

Understanding the Role of Social Media in Community Resilience: A Study of Healthcare Communities

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Table of CONTENTS

List of Figures	vii
List of Tables.....	ix
Abbreviations	xi
Statement of Original Authorship	xii
Copyright Notice 1.....	xiii
Copyright Notice 2	xiv
Acknowledgements	xv
Abstract	xviii
<u>1</u> Introduction	1
1.1 Community Resilience.....	2
1.2 Social Media.....	4
1.3 Management of chronic disease in healthcare	6
1.4 Research problem	7
1.5 Research Purpose	8
1.6 Research Question	10
1.7 Research Approach.....	10
1.8 Significance of the Study	12
1.9 Overview of the Thesis Structure	13
1.10 Publications	14
<u>2</u> Literature Review	16
2.1 Introduction.....	16
2.2 Community Resilience.....	18
2.2.1 Psychological Perspective of Community Resilience	19
2.2.2 The Socio-ecological Perspective of Community Resilience.....	21
2.3 The Role of Environmental Factors in Community Resilience	24

2.3.1	The Role of Social Milieu	24
2.3.2	The Role of Regulations and Policies	26
2.4	The Role of Individuals' Capacities in Community Resilience	28
2.4.1	The Role of Social Network.....	28
2.4.2	The Role of Communication Abilities.....	30
2.4.3	The Role of Learning Capacities	32
2.4.4	The Role of Adaptability	33
2.5	The Role of Community Capital in Community Resilience	34
2.5.1	The Role of Social Capital	35
2.5.2	The Role of Human Capital	37
2.5.3	The Role of Supporting Infrastructure.....	38
2.5.4	The Role of Culture	39
2.6	Approaches to the Role of ICT in Community Resilience.....	40
2.6.1	Information and Communication Technology Transforms Communities by Removing Traditional Barriers	41
2.6.2	Information and Communication Technology Supplements Communities by Providing Alternative Means of Interactions	42
2.6.3	Information and Communication Technology Weakens or Diminishes Communities by Eroding Real Human Interaction	42
2.7	Theoretical lens: Sociomateriality	43
2.8	Preliminary Conceptual Model.....	45
2.9	Defining Social Media.....	48
2.9.1	The Significance of Social Media in Scholarly Studies.....	51
2.9.2	Role of Social Media in Community	54
2.9.3	Approaches to Social Media in Healthcare Studies.....	60
2.9.4	Information Systems Studies of Social Media in Healthcare.....	64
2.10	Chronic Care Management: The Context of Study	66

2.10.1	Understanding Chronic Care Management through the Lens of Community Resilience.....	71
2.10.2	Social Media and Chronic Care Management.....	72
2.11	Chapter Summary.....	78
3	Research Methodology	80
3.1	Introduction.....	80
3.2	The Methodological Position of This Study	80
3.3	Research Philosophy.....	83
3.3.1	Approach to Data Analysis: Hermeneutics Interpretative.....	88
3.4	Research Approach: Case Study.....	90
3.4.1	Important Characteristics and Significance of the Case Study	91
3.4.2	The Relevance of Case Study Strategy to This Study	92
3.4.3	Unit of Analysis.....	93
3.4.4	Approach to Generalisability	94
3.5	Research Design	96
3.6	Exploration, Conceptualisation, and Corroboration Stage.....	99
3.6.1	An Approach to the Research Method: Grounded Theory	99
3.6.2	Data Collection Strategy	107
3.6.3	Data Collection Process	110
3.6.4	Data Analysis.....	119
3.7	Theorisation Stage	122
3.7.1	Theoretical Coding.....	122
3.7.2	Theoretical Lens.....	123
3.8	Use of Nvivo™ Software for Coding and Data Analysis.....	125
3.9	Chapter Summary.....	128
4	Emergence of Affordances of Social Media	130
4.1	Introduction.....	130
4.2	Affordances of Social Media Theme	131

4.2.1	Chain of Evidence	132
4.2.2	Building a Sense of Community	132
4.2.3	Emotional Support.....	144
4.2.4	Empowerment.....	152
4.2.5	Knowledge Co-Creation	163
4.3	Key Findings	171
5	Unfolding Community Resilience	172
5.1	Introduction.....	172
5.2	Community Resilience Theme.....	173
5.2.1	Chain of Evidence	175
5.2.2	Adaptation.....	175
5.2.3	Communication.....	185
5.2.4	Community Support	192
5.2.5	Social Inclusion	201
5.3	Key Findings	216
6	Emergence of Social Media Constraints.....	218
6.1	Introduction.....	218
6.2	Social Media Constraints.....	218
6.2.1	Chain of Evidence	219
6.2.2	Experienced Constraints.....	220
6.2.2.1	<i>Emotional Discomfort</i>	221
6.2.3	Perceived Constraints	227
6.3	Key Findings	231
7	Discussion	233
7.1	Introduction.....	233
7.2	Significance of the Key Findings	234
7.2.1	Key Findings Related to Affordances of Social Media	234

7.2.2	Key Findings Related to Community Resilience	254
7.2.3	Key Finding Related to Social Media Constraints.....	261
7.3	Reflection on the Preliminary Conceptual Framework	269
7.4	Chapter Summary	276
8	Building Theory.....	278
8.1	Introduction.....	278
8.2	Building a Theory of Social Media.....	278
8.2.1	Theorising the ‘Affordances of Social Media’ Theme.....	279
8.2.2	Theorising ‘Community Resilience’ Theme.....	286
8.2.3	Theorising the ‘Social Media Constraints’ Theme.....	291
8.2.4	Building A Theory of Social Media for Resilience of Chronic care management.....	294
8.3	Scaling-up the Theory.....	303
8.3.1	The Emerged Theory as a Sociomaterial Phenomenon	308
8.4	Chapter Summary	311
9	Conclusion.....	313
9.1	Introduction.....	313
9.2	Summary of the Findings	313
9.3	Answers to the Research Question	314
9.4	Theoretical Contribution	317
9.5	Implications for Practice	325
9.6	Research limitations and reflections on the research process.....	326
9.6.1	Key Areas of Reflection	327
9.6.2	Research Limitations and Challenges	330
9.6.3	Reflection on the Study.....	333
9.7	Future Research.....	334
9.8	Concluding Thoughts.....	335

Bibliography	337
Appendix 1- Ethics: Example of explanatory statement and consent form.....	366
Appendix 2- Sample questions of Semi-structured interviews	371
Appendix 3– reflective framework.....	372

LIST OF FIGURES

Figure 1.1 Overview of the research design.....	12
Figure 2.1 The main areas of literature review	17
Figure 2.2 Preliminary conceptual model.....	46
Figure 2.3 Wagner Chronic Care Model (Wagner, 1998).....	67
Figure 2.4 Kaiser Permanente Model of Care (National Health Services, 2007)	68
Figure 3.1 Unit of analysis	94
Figure 3.2 Embedded case study design versus a holistic case study design (adopted from Yin, 2014).....	97
Figure 3.3 An overview of the research design	98
Figure 3.4 A middle-range approach to coding (adopted from Urquhart, 2013)	103
Figure 3.5 Examples of the online patient support forums.....	116
Figure 3.6 The use of Nvivo 10™ for coding and data analysis.....	126
Figure 3.7 An example of Nvivo 10™ advanced analysis tools: words repetitions and potential relations	127
Figure 4.1 An overview of the development of the affordances of social media theme	131
Figure 4.2 The analytical development of the building a sense of community category	133
Figure 4.3 The analytical development of the emotional support category.....	145
Figure 4.4 The analytical development of the empowerment category	153
Figure 4.5 The analytical development of the knowledge co-creation category	164
Figure 4.6 Sharing knowledge via photo (Photo 1).....	168
Figure 4.7 Sharing knowledge by photo (Photo 2)	169
Figure 4.8 Sharing knowledge by map (Photo 3)	169
Figure 5.1 An overview of the development of the community resilience theme	174
Figure 5.2 The analytical development of the adaptation category	176
Figure 5.3 The analytical development of the communication category	187
Figure 5.4 The analytical development of the community support category.....	193
Figure 5.5 The analytical development of the social inclusion category	202
Figure 6.1 The analytical development of social media constraints theme.....	219
Figure 6.2 The analytical development of experienced constraints category	220

Figure 6.3 The analytical development of perceived constraints category	227
Figure 8.1 Relationships between the categories of the Affordances of Social Media theme	279
Figure 8.2 Relationships between the categories of the Community Resilience theme	286
Figure 8.3 Relationship between the categories of the Social Media Constraints theme	291
Figure 8.4 Relationships between the emergent themes	295
Figure 8.5 Some instances of the ‘maintaining’ relationships between affordances of social media and Community Resilience	296
Figure 8.6 Examples of the relationship between affordances of social media and Community Resilience	297
Figure 8.7 The ‘screening’ relationship between affordances of social media and Community Resilience	299
Figure 8.8 The ‘socialification’ relationship between Community Resilience and affordances of social media	300
Figure 9.1 Modified and extended conceptual model.....	318
Figure 9.2 An overview of the reflective framework.....	327

LIST OF TABLES

Table 2.1 A summary of the preliminary conceptual development.....	23
Table 2.2 The landscape of social media studies in information systems	54
Table 3.1 Major perspectives about the relations between technology and a social phenomenon.....	84
Table 3.2 Epistemological perspectives about the relations between technology and social agencies (adopted from Barely, 1998)	85
Table 3.3 Summary of the philosophical approach adopted in this study	90
Table 3.4 An overview of the adaption of the grounded theory method in this study	106
Table 3.5 An overview of the collected data at each stage of the study	114
Table 3.6 An overview of data sources in each case.....	115
Table 3.7 An overview of the research methodology	129
Table 4.1 An overview of chain of evidence: linking data sources to the emergent theme of affordances of social media	132
Table 4.2 A summary of the key findings related to affordances of social media	171
Table 5.1 An overview of chain of evidence: linking data sources to the emergent theme of community resilience	175
Table 5.2 A summary of the key findings related to the community resilience	217
Table 6.1 An overview of chain of evidence: linking data sources to the emergent theme of social media constraints.....	219
Table 6.2 A summary of the key findings related to social media constraints.....	232
Table 7.1 Key findings related to affordances of social media	235
Table 7.2 Key findings related to Community Resilience.....	254
Table 7.3 Comparison between the findings of this study and other similar studies	259
Table 7.4 Key findings related to Social Media Constraints	261
Table 7.5 Links between community capital and the findings	272
Table 7.6 Links between individuals' capacities and the findings.....	273
Table 7.7 Links between environmental factors and the findings.....	274
Table 7.8 Links between technology (that is, social media) and the findings	275

Table 8.1 Overview of the relationships between the constructs of the affordances of social media theme and their significance	285
Table 8.2 Overview of the relationships between the constructs of the community-resilience theme and their significance.....	290
Table 8.3 Overview of the relationships between the constructs of the social media-constraints theme and their significance	294
Table 8.4 Overview of the relationship between the constructs of the theory of social media and the resilience of chronic care management, and their significance	303
Table 8.5 A theoretical framework for understanding the emergent theory through the lens of sociomateriality	307
Table 9.1 Overview of the literature areas enriched by the findings of this study	320
Table 9.2 Framework for presenting the theoretical contribution of this study (adopted from Walsham, 1995)	323
Table 9.3 Summary of the implications of this study for practice.....	325
Table 9.4 Summary of reflections	328

ABBREVIATIONS

AIHW	Australian Institute of Health and Welfare
AV	Arthritis Victoria
CV	Carers Victoria
ICT	Information and Communication Technology
IS	Information Systems
GP	General Practitioner
GTM	Grounded Theory Method
OCASA	Online Community Attraction–Selection–Attrition
WHO	World Health Organisation

STATEMENT OF ORIGINAL AUTHORSHIP

I hereby declare that this thesis contains no material which has been accepted for the award of any other degree or diploma at any university or equivalent institution and that, to the best of my knowledge and belief, this thesis contains no material previously published or written by another person, except where due reference is made in the text of the thesis.

Signed:

12th May 2015

The research for this thesis received the approval of the Monash University Human Research Ethics Committee (Reference number: CF12/1132 – 2012000540)

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ABSTRACT

Resilience is a core attribute of thriving and vibrant communities. It represents the capacity of a community for absorbing abrupt change and its ability for dealing with unexpected challenges. Resilience has become an important concept for understanding the relation between a community's dynamics and its environment, including technology. The purpose of this study is to employ this concept to unpack the complex relationship between social media and community resilience, and build a theoretical understanding that represents the nature and dynamics of such a relation.

Through an iterative and interlinked process of data collection and data analysis, a substantive theory of social media for community resilience emerged. 'Affordances of social media, 'community resilience, and 'social media constraints' are the three major concepts that underpin this theory. These concepts emerged through a rigorous process of coding and they are strongly grounded in empirical findings. The emerged theory is also interpreted and understood through the theoretical lens of sociomateriality, analytically generalised to a more abstract and formal level.

Healthcare provides a fruitful context to this study as many aspects of healthcare activities, resonate strongly with the characteristics of community resilience. In particular, communities of patients and carers that form and emerge around chronic care management activities, provide rich settings for observing different dimensions of resilience and investigating the interaction between community resilience and social media. As such, this study focuses on the management of chronic disease to understanding the role of social media in the resilience of chronic care management communities.

By taking an inductive and exploratory approach, this study provides a detailed and qualitative account of the role of social media in the resilience of chronic care management communities. Designed as an embedded case study, and informed by the grounded theory method, the study focuses on different chronic disease types. Three levels of open, selective, and theoretical coding provided the study with a detailed account of the nature and relations between social media and the resilience of chronic care management communities.

This study makes theoretical contributions by building a theory of social media, presenting new concepts, and providing deep insight into the role of social media in communities and community resilience. It also has implications for practice by providing new insights into patients' and carers' communities. Further, the study has implications for research by creating new research questions and opening potential areas of investigation.

1 INTRODUCTION

The aim of this opening chapter is to bring to the fore the significance of this study. My endeavour here is to underline motivations for conducting this research and to highlight the importance of the problem that this study investigates. In this chapter, I will also accentuate how investigating and addressing the research problem can add to the existing body of knowledge and will underline some of the major implications of the findings for research and practice.

With the increasing presence of new information and communication technologies in different aspects of people's lives, this study, at its core, is concerned with understanding how such presence influences the behaviour and attributes of communities. In particular, this study aims to understand the relationship and interplay between social media and community resilience, especially when communities may face long-term and ongoing challenges or adversity.

With the ever-growing application of social media in healthcare communities, the focus of this study is on the resilience of communities that emerge and form around the process of chronic-care management. This process provides a relevant, rich, and fruitful context for exploring and investigating the influence of social media on the resilience of communities when striving against challenges and uncertainties.

As such, the three founding areas of this study are *community resilience*, *social media*, and *chronic-care management*. The importance of these concepts is briefly explained in this chapter. Further, by discussing the research problem, this chapter provides an overview of the adopted research method in this study and highlights its significance for answering the formulated research questions.

To highlight the significance of this research, I will continue this chapter by presenting a brief background to this study and delineating its purpose and motivations. This leads to a section where the research problem is elaborated, followed by a section where the primary and secondary research questions are highlighted. I will then provide an overview of the adopted research method, highlighting how the method helped to explore and unpack the dynamic relationship between social media and the

resilience of patients' and carers' communities. This is followed, in the penultimate section, by an overview of the theoretical contribution and practical implications of this research. The last section of this chapter presents the publications that were produced during the course of this dissertation.

1.1 Community Resilience

A *community* is recognised as a dynamic social entity, emerging through complex interactions among individuals, groups, organisations, and institutions (Breckon & Lancaster, 1998). It might have geographic boundaries, but, in general, a community represents groups of people who share expertise, values, norms, interests, and experiences (MacQueen et al., 2001; McMillan & Chavis, 1986).

Carl Moore (1996), a pioneer anthropologist and an activist, sheds some light on the concept of community by highlighting some of the principle constituents of this complex social entity and describing it by a set of attributes. Moore (1996, p28) states:

“Community is the means by which people live together. Communities enable people to protect themselves and to acquire the resources that provide for their needs. Communities provide intellectual, moral, and social values that give purpose to survival. Community members share an identity, speak a common language, agree upon role definitions, share common values, assume some permanent membership status, and understand the social boundaries within which they exist”.

In this definition, Moore (1996) paints an image of community that is centred on collaboration and change. He highlights how community members who share different values and interests can work together to become more resourceful in the face of change. Other scholars such as Hyland and Bennett (2005) also contend that communities experience constant change from multiple sources as no community can presume a future without change and its implications.

As Nelson, Adger, and Brown (2007) explain, many aspects of change within a community are unpredictable and individuals cannot have a full knowledge of their own natures; therefore, they cannot know the intensity or ultimate impacts of change.

As such, communities need to actively develop resources and capabilities to successfully respond and adapt to unpredictable change and learn how to deal with its unanticipated impacts. Such capabilities that are the pivot and central attribute of a community are known as *community resilience* (Holling, 1973).

Resilience is a core attribute of dynamic and thriving communities that strive to uphold and protect their values and existences (Magis, 2010). In its general form, community resilience is the capacity of individuals and a community as a whole in absorbing change, adapting to new circumstances, and overcoming challenges as they face disturbances or adversity (Holling, 1973). This relationship between change, and a community's capacity to respond to change, makes resilience a critical aspect for communities and their survival.

The concept of community resilience was first coined by Holling (1973) in his influential article about the characteristics and relationships between actors in a resilient system. He argues that resilience is an attribute of community, and represents the persistence of relationships among actors in the face of adversity. Holling's notion of resilience has been adopted and employed by other researchers to understand the capacity of human systems including individuals, families, and communities, and their abilities to withstand and recover from disturbing events and experiences. This notion is specifically used to describe the ability of communities to accommodate unexpected circumstances (Pelling & Manuel-Navarrete, 2011), to adapt to adversity (Gunderson, 2003), and to learn from their experiences and possibly become stronger (Folke, 2006).

From a community-resilience perspective, human communities are complex social entities with emerging characteristics and it is important to recognise that people's social lives exist with incomplete knowledge about their future. This implies that the resilience of a community cannot be based on the assumption that the future events are expected; rather, the focus needs to be on the preparation of the system to face unexpected situations (Folk, 2006).

Among the many factors that can influence a community's characteristics, technology - and namely information and communication technology (ICT) - has become a centre of attention for many scholars. They believe that with the wide-spread diffusion and application of ICT in communities within recent years, the traditional notion of

community and its attributes have become blurred. For example, Yar (2004) argues that because of ICT, communities have become less structured and more diverse, and, as social units, they are becoming less recognised by their physical attributes and boundaries. In fact, it is suggested that ICTs are extending the boundaries and functionalities of communities such that understanding the nature of these social entities and their core attributes requires a new interpretation of their behaviours and a new evaluation of their characteristics.

It appears that the new ICTs are reshaping our communities, or at least accelerating the process of change. They are transforming our traditional view about community from a local and situated social entity with distinct and definitive boundaries, to one that is fluid, virtual, and structurally amorphous. As such, the amalgamation of new information technology and people has implications for our understanding of communities and their attributes because, over time, these concepts have become bewildering and vague. Therefore, the shift in the nature of communities requires a new understanding of the dynamics of these social entities and calls for a new evaluation of a core and significant attribute: community resilience.

1.2 Social Media

The term *social media* was first coined in 1997 by Ted Leonsis, an executive at AOL¹, when he was talking about the need to offer users “...*social media, as places where they can be entertained, communicate, and participate in a social environment*” (Bercovici, 2010). Since then, and with the emergence of Web 2.0 technologies, social media has appeared in many forms and types including blogs, forums, social networks, wikis, microblogging, virtual realities, social bookmarking, social tagging and content communities, just to name a few. Since then, the concept and definition of social media has been presented in many different ways by practitioners and scholars. However, one of the most popular and accepted definitions of social media is presented by Kaplan and Haenlein (2010). They define social media as a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user-generated content.

¹ AOL Inc. is a multinational mass-media corporation based in the US.

Since the introduction of social media, however, the use of these technologies is clearly on the rise and the technologies have influenced many social aspects of communities. Studies about the application and the likely benefits of social media strongly suggest that social media has great potential to facilitate users in building communities that enable strong communication and support among their members (Dufty, 2012; Taylor, Wells, Howell, & Raphael, 2012).

In healthcare communities, the strong trend of using social media indicates that these technologies are likely to become an increasing fact of life for millions of patients and caregivers around the world (Hawn, 2009). In fact, recent evidence shows that social media is used by patients, carers, and practitioners for a variety of reasons. These range from seeking health-related information and education, to building relationships and gaining emotional support from peers (Burton, Tanner, Giraud-Carrier, West, & Barnes, 2012; Hackworth & Kunz, 2010). Studies also indicate that social media has the potential to improve the health behaviour of communities by leveraging social support, creating positive social models, and providing dynamic content to keep users engaged in behaviour change (Richardson et al., 2010).

In particular, the potential role of social media in the management of chronic disease is highlighted in many recent studies. As Nordfeldt, Hanberger, and Berterö (2010) point out, the modern management of chronic illness requires that patients and carers have access to continuous support and learning opportunities. They argue that social media has great potential for supporting patients and their families by enhancing shared experiences, learning opportunities, and information retrieval. Other studies draw our attention to the means by which social media, when sharing information about chronic illness, can decrease the sense of isolation of patients and carers, and increase a sense of community between them. In fact, these technologies will likely result in novel approaches for empowering, engaging, and educating patients with chronic disease and their carers through better communication and providing opportunities for making proactively informed decisions.

With its ability to benefit actors within the healthcare domain, the process of chronic-care management provides a promising situation and a rich context for studying and investigating the role of social media and its influences on the resilience of the community that emerges around this process.

1.3 Management of chronic disease in healthcare

Generally, chronic diseases are characterised as non-curable health conditions with complex causes, long duration, and generally slow progression that can develop into other health complications (Lindholm, Burstro, & Diderichsen, 2001). Chronic-disease rates are growing globally and by the year 2020, the World Health Organization has predicted that globally, chronic disease and its burden on societies will have grown 60% (The World Health Organisation, 2011).

According to The World Health Organization (2011), the prevalence of chronic disease is one of the major challenges of the 21st century for many of the developing and developed countries around the world. For example, a recent report by the Australian Institute of Health and Welfare (2013) shows that although Australia is one of the healthiest countries in the world, chronic diseases are prevalent in Australia and more cases of different chronic-disease types are diagnosed every year. The report also indicates that at the end of 2012, of the 22.3 million of the people living in Australia, a large number of the population (more than 53%) suffered from at least one type of chronic illness. For instance, with more than 6.3 million cases, arthritis is the most prevalent chronic condition in the country.

As a result of the prevalence of chronic disease, the process of managing chronic care is placing increasing demands on limited monetary and scarce and expensive healthcare resources. Consequently, chronic-care management has become a major social and economic priority for Australia and its healthcare system (Australian Institute of Health and Welfare, 2013).

If we regard the process of chronic-disease management from a community perspective, chronic illness arises from the interplay of influences within a complex system of actors that act dynamically through time. From this perspective, people with chronic disease need different resources and support from the community to successfully manage their disease in their daily lives (Sallis, Owen, & Fisher, 2008). As such, the management of chronic disease is a multifaceted social process with a wide range of players (Wagner, 1998).

The process of chronic-care management therefore lies at many levels: with individuals, with health professions, and with families and friends where the process

goes beyond clinical settings and into the community (Greenhalgh, 2009). From this point of view, the process of chronic-care management should be seen as a complex and dynamic community of diverse actors, who use different tools and methods to influence each other's decisions and actions (Earls & Carlson, 2001). Conceptualising the management process in this way allows this study to investigate the role of social media in the resilience of such a community.

1.4 Research problem

Human communication and discourse can powerfully shape how individuals within communities interpret different aspects of their activities and incorporate them into their everyday social life (Charmaz, 1990). Many people, however, increasingly rely on virtual environments and social media to engage in discourses about implications of their social activities and the long-term and impending consequences for their communities (Kane, Fichman, Gallagher, & Glaser, 2009).

Research into communities recognises that ICT can influence the attributes of a community by changing the ways people within communities interact with each other (Smith & Stirling, 2010). In light of this influence, social-media platforms have become popular technologies, offering new ways for community members to communicate and expand their social networks to a level that would not have been possible before the introduction of social media

In the context of healthcare, communities that emerge around healthcare activities are recognised as complex social systems that are often accompanied by surprises and uncertainties (Begun & Kaissi, 2004). As such, healthcare communities are susceptible to stresses and disturbances. Developing a capacity that makes them resilient is therefore vital for their performance and outcomes (Carthey, De Leval, & Reason, 2001).

Recent studies show a growing trend of healthcare communities using social media (e.g. Li, 2013a). This trend becomes even more evident in the process of chronic-care management where the use of social media is likely to become an increasing fact of life for millions of patients and carers around the world (Hawn, 2009). The growing popularity of social media is to such an extent that some researchers believe this trend is transforming chronic-care management from a clinical-laden process to one that is

more self-driven and community dependent (Eysenbach, 2008; Ressler, Bradshaw, Gualtieri, & Chui, 2012). This is because social media affords new types of behaviours and activities that were previously difficult or even impossible to achieve by patients and carers (Majchrzak, Faraj, Kane, & Azad, 2013; Merolli, Gray, & Martin-Sanchez, 2013).

While more empirical evidence is being reported regarding the different aspects of such a transformation (O'Connor, 2010), recondite information and a lack of solid scholarly knowledge foil attempts to explain the empirical patterns of the use of social media in chronic-care management activities and the ways in which social media could influence or support the resilience of the process. In other words, despite the growing popularity of social media and its potential influence on complex healthcare communities (Richardson et al., 2010), little attention has been given to understanding the role that social media can play in supporting the resilience of the process of chronic-care management (Mignone & Henley, 2009; Simpson, 2005).

While Urquhart and Vaast (2012) pay heed to this issue, the general and important concern of the information system (IS) discipline has been the lack of theories that could help the IS researcher to make better sense of new and emerging socio-technical phenomena such as social media. They argue that this concern is still of paramount importance in the IS discipline and it is especially an issue in terms of new socio-technical artefacts, such as social media, and their emerging complexities (Urquhart & Vaast, 2012).

This lack of knowledge calls for a deeper understanding of how social media can interact with a community and how these technologies may relate to community attributes such as resilience. Further, there is a need to explore how the online activities that occur through social media can influence the resilience of communities in real and offline contexts. This problem led to the formulation of the research question (presented in Section 1.7).

1.5 Research Purpose

Traditionally, developing an understanding and theorising the complexities of the new socio-technical processes emerging from the development of new technologies have benefited the IS discipline (Weber 2003, Orlikowski 2007, Taylor et al 2010). Over

decades, IS studies have generated insightful and useful theories, empirical findings, and tools for better understanding of the design, impacts, interactions, and implications of information technologies on organisations and on humans' social life (Urquhart & Vaast, 2012). However, given the current evidence of unprecedented shifts associated with technologies in practice, such as social media, our existing theories are incapable of fully explaining the reality of the dynamic, complex, and multi-faceted nature of these technologies in communities, in terms of their resilience.

Given the relative novelty and originality of social media in healthcare, as Scott and Orlikowski (2014) and Fichman, Kohli, and Krishnan (2011) contend, the existing traditional theories lack the theoretical apparatus that researchers can employ to adequately understand the processes and practices of social media. They argue the current theories used by the IS researchers are not sufficiently rich and up to date to fully explain the implications of the new technologies. As such, it is more relevant to develop ways of thinking that do not assume a world of technology and social media that is relatively stable, singular, and separable. This lack of theoretical understanding and the fast growth and widespread use of social media in chronic-care management makes it imperative to find a better means of understanding how social media can influence the resilience of patient and carer communities.

I therefore contend that the IS discipline is deeply interested in new theories to explain the complexities of these new technologies and to understand the means by which they can influence the dynamics of communities. The fast growth and widespread use of social media and the incorporation of social media into people's daily lives and communities therefore makes it imperative for IS researchers to find better means of conceptualising processes by which social media influence and change people's daily practices within communities.

In light of these motivations, the purpose of this study is to explore, unpack, and theorise the potential role of social media in the resilience of a community of patients and carers involved in chronic-care management. In a broader sense, this study aims to understand and theorise how social media can support the resilience of communities.

1.6 Research Question

The focus of this study is on the communities of patients and carers that emerge around the process of chronic-care management. Therefore the primary research question that this study aims to answer is:

What is the role of social media in the resilience of chronic-care management communities?

To answer this research question, three sub questions were formulated. These questions provide manageable focuses for an empirical investigation. The three sub questions are:

- *How is the notion of community resilience interpreted in chronic-care management communities?*
- *How can social media support the resilience of chronic-care management?*
- *What are the constraints of social media in the resilience of chronic-care management?*

Answers to these three questions provide a clearer picture of the role of social media in the resilience of chronic-care management.

1.7 Research Approach

According to Urquhart and Vaast (2012), making sense of the emergent dynamics of social media requires new theories that can fit new observations about these technologies. In this regard, Orlikowski (1993) argues that, in the absence of useful theories, ‘grounded theory’ allows a study to generate an accurate account of the complexities of a phenomenon by grounding the account in empirical observations or data.

Glaser and Strauss (1967, p.5) highlight the characteristics of such theory by arguing:

“The adequacy of a theory and its ability to fit and work (predict, explain, and be relevant) cannot be divorced from the process by which it is generated. Thus one canon for judging the usefulness of a theory is how it was generated - and we suggest that it is likely to be a better theory to the degree that it has been inductively developed”

This notion is also echoed by Vaast and Walsham (2013) as they argue that grounded theory can help IS researchers to understand processes and dynamics related to social-media environments. They contend that social-media participants engage in relatively new socio-technical contexts where they develop and learn original behaviours as they interact with each other through these new communication platforms. Therefore, the characteristics of social media as a dynamic phenomenon, and the lack of theoretical accounts about them, makes grounded theory an especially well-suited methodology for the development of new theories about these new technologies.

Taking a qualitative case-study approach (Flyvbjerg, 2011), this study aims to explore the role of social media in supporting the resilience of healthcare communities. The focus here is to develop a contextual and process-oriented understanding so that I could understand, describe, and explain the means that social media can influence the process of chronic-care management. As a result, I could theorise the role social media can play in the resilience of the community that forms around the management process.

The inductive, contextual, and exploratory approach I take to the research problem lends itself to an interpretative research perspective (Orlikowski, 1993; Orlikowski and Baroudi, 1991). This is also due to the fact that in chronic-care management, the emergence of a patients’ and carers’ communities and its attributes are subjective and they are linked to patients’ and carers’ understanding of the process and its dynamics.

For this study, sociomateriality is adopted as a theoretical lens to understand and explain the key findings of this study (Orlikowski & Scott, 2008). By offering a relational perspective, this theoretical lens enables the study to bring to the fore the unique and distinctive roles and capabilities of social media in chronic-care management that exist beyond the material features of these technologies and the

agency of their users, alone. Figure 1.1 provides an overview of the research design for this study. This design will be teased out and explained in more detail in Chapter 3.

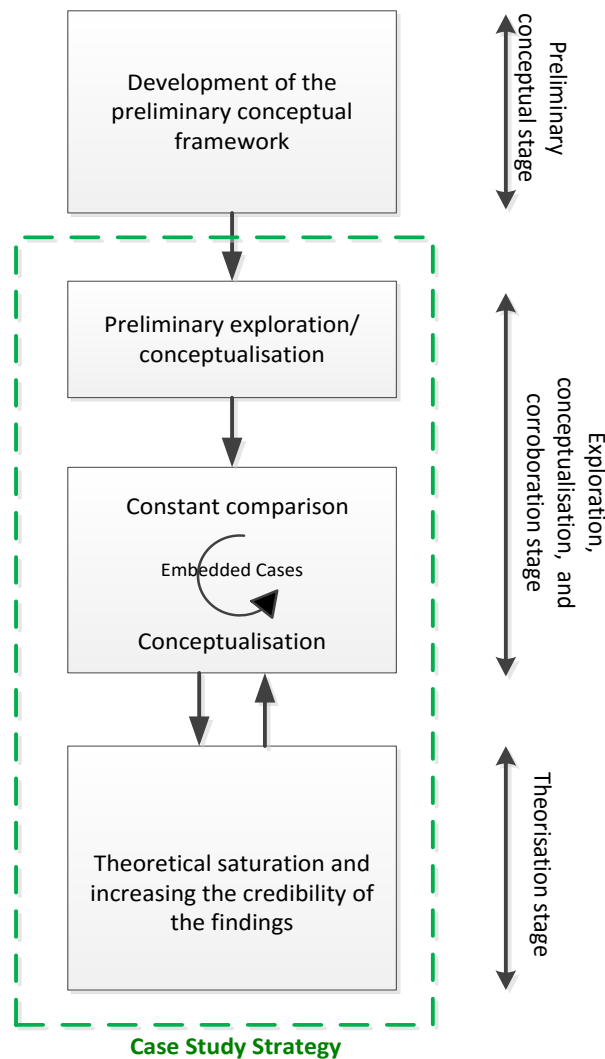


Figure 1.1 Overview of the research design

1.8 Significance of the Study

By expanding our understanding of the role of social media in chronic-care management, this study makes a theoretical contribution to the field of IS and Health Informatics in four ways. First, it creates new concepts. Second, it builds a new theory of social media. Third, it has specification implications for the design and use of IT

tools and services for patients' and carers' communities. Fourth, the findings provide a rich insight into the daily experiences of patients and carers using social media.

The findings also have implications for practice, as they may be benefit:

- patients and caregivers who use social media as part of the process of self-management within their communities;
- practitioners who use social media for the process of patient-centred care and provide support to patients and carers;
- healthcare researchers by assisting them to gain a better understanding of how patients and carers can engage with social media as a community;
- policy-makers who may aim to use social media to build and support resilient communities; and
- IS researchers by creating new insights, theories, and concepts about the role of social media in the resilience of online and offline communities.

1.9 Overview of the Thesis Structure

To support the argument of this thesis, the dissertation is structured into nine chapters. This first chapter highlights the importance and significance of the topic, and introduces key concepts. Chapter 2 provides the theoretical and intellectual foundation of this study by accentuating, framing, and discussing its core concepts in the light of the research question. By grounding these core concepts within the landscape of theory and practice, this chapter gradually develops and highlights the conceptual model that guides and informs the rest of the study.

Chapter 3 is concerned with the practical aspects of the study. By delineating my philosophical position to research, I argue for the suitability of the case study as an overarching framework and the strengths and usefulness of adoption and adaption of the grounded theory. The practical aspects of data collection and data analysis are then explained in light of these arguments.

Chapters 4, 5, and 6 are dedicated to the findings of the study. Each chapter presents the findings related to the three major emergent themes of Affordances of Social Media (Chapter 4), Community Resilience (Chapter 5), and Social Media Constraints

(Chapter 6). At the end of each chapter, the key findings of the emergent themes are presented.

The discussions presented in Chapter 7 delineate the significance of the key findings in relation to the existing literature and highlight the areas of the literature that can be enriched or expanded through the key findings of the study.

The findings of the study are theorised in the penultimate chapter. Chapter 8 underlines the relationship between emergent concepts and presents the processes of theorisation at both category and theme levels.

The conclusion of the study is presented in Chapter 9 and the research questions answered. Moreover, this chapter gives prominence to the theoretical contributions of the study and pays heed to the practical implications of the findings. By reflecting on the research process, this chapter also underlines some of the important lessons learnt throughout the study.

1.10 Publications

During the course of this study, the progress and findings of the study were reported at different stages. Here I present a list of the publications that were produced during this PhD project:

- Pousti, H., Urquhart, C., and Linger, H. (2015). Exploring the Role of Social Media in Chronic Care Management: A Sociomaterial Approach. In B. Doolin, E. Lamprou, N. Mitev & L. McLeod (Eds.), *Information Systems and Global Assemblages: (Re)Configuring Actors, Artefacts, Organizations*. Berlin: Springer.
- Pousti H., and Burstein F. (2014), '*Barriers of using social media in supporting health-related decisions: A sociomaterial perspective*', 17th IFIP WG 8.3 and AIS SIGDSS Conference of 'DSS 2.0 – Supporting decision making with new technologies', June 2014, Paris, France.
- Pousti H., Burstein F., Urquhart C., and Linger H., (2013), *Methodological implications of Social Media as a research setting for IS healthcare studies: Reflections from a grounded theory study*, Proceedings of 24th Australasian Conference on Information Systems, ACIS2013, Melbourne, Australia.

- Pousti H., Urquhart C., Burstein F., and Linger H., (2013), *Building Resilient Communities in Healthcare: Investigating the Role of Social Media in the Management of Chronic Disease*, Poster presented at Melbourne Innovation Day, Melbourne, Australia
- Pousti H, Linger H., and Burstein F., (2011), *From Evidence-Based to Knowledge-Based Healthcare: A Task-Based Knowledge Management Approach*, Proceedings of 19th International Conference on Information Systems Development, Prague, Czech.
- Pousti H., Burstein F., and Linger H., (2010), *A Task-based Approach to Patient-centered Care Model of Clinical Practice: A communicative perspective*, International Conference on Addressing Research Challenges; Emerging Research, ARCHER10, Melbourne, Australia.

2 LITERATURE REVIEW

2.1 Introduction

The prime purpose of this chapter is to present the conceptual foundation of this study. It aims at forming a preliminary understanding of a phenomenon in the social world (i.e. the interrelation between social media and community resilience), which is grounded in the existing body of knowledge. As such, in the light of the main research question presented in Chapter 1, the focus of this chapter is on presenting a review of the existing relevant literature that supports the conceptual foundation of this study.

A literature review is a concept-centric process (Webster & Watson, 2002). In the context of qualitative research, the aim of such a review is to develop conceptual 'sensitivity' around various concepts that are relevant to the problem domain (Marshall & Rossman, 2011). It is argued that such sensitivity can be gained through the development of a conceptual model or framework (Klein & Myers, 1999).

The significance of such a conceptual model is that it provides a primary system of conception of what is out there to be studied and how preliminary concepts, assumptions, and relations can inform the design and conduct of a study. Miles & Huberman (1994) recognise such a framework as a 'tentative theory' that informs the domain of study. Klein & Myers (1999) take a sharper approach in describing the role of such a conceptual model by recognising it as a 'sensitising device' that enables the researcher to view and study the social world in certain ways. As Maxwell (2005) puts, a conceptual model is in fact an incomplete theory that helps the researcher to assess and refine the goals of a study, develop realistic and relevant research questions, and select appropriate methods.

Taking into account the significance of such a 'sensitising device', this study is 'informed' by grounded theory method. The implication of this method for the conceptual foundation of this study is that the approach to literature is highly influenced by the guidelines and recommendations of grounded theory method. More

precisely, this means that literature review in this study is a non-committal review (Urquhart & Fernández, 2013).

According to Glaser & Strauss (1967), in grounded theory, a literature review is a phase within a study in which the researcher starts looking at relevant concepts without trying to fit data into them. Urquhart (2013) elaborates further on this point by explaining that once the theory has been built, the researcher has to make a decision based on the emergent concepts of what literature is relevant. Charmaz (2006) explains that the process of literature review is an ongoing process which doesn't stop or finish until the very end of the study.

As such, this chapter continues by discussing the very fundamental concepts and major focuses of this study. In so doing, the initial literature review for this research consists of three streams of literature, as shown in Figure 2.1, which are initially found to be relevant to the research problem. Here, the endeavour is to bring to the fore the major conceptual and intellectual foundations of this research; aiming to unpack and clarify the preliminary underlying assumptions and the driving concepts that fuelled this study.

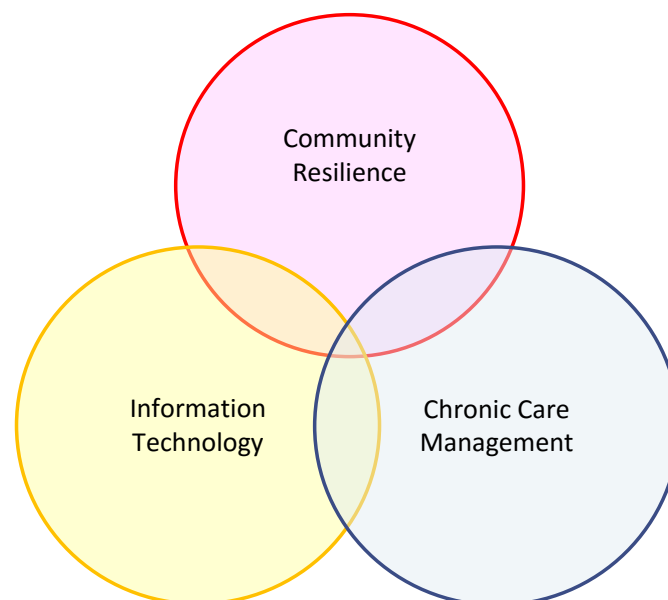


Figure 2.1 The main areas of literature review

A review of the first stream of literature focuses on the concept of '*community resilience*' and aims at understanding this concept from different perspectives and

teasing out their relevant aspects. By delving into the underlying layers of these concepts, the chapter provides a clearer picture of what the object of this study is, and how it can be better understood in relation to the broader landscape of theory and practice. This lays the groundwork for the presentation of a conceptual model, which is elucidated later in this chapter; as well as a concise discussion of the theoretical lens adopted in this study. In the light of ‘sociomateriality’ (Orlikowski & Scott 2010), as the theoretical lens, concepts unpacked from a review of the first stream of literature will be brought together to form a preliminary conceptual framework for this study.

The chapter then proceeds from an abstract and high-level conceptual discussion, to detailed review of the second stream of literature. This review aims to shed light on the technological focus of this study (i.e. social media) and identify issues related to different aspects of ‘*social media*’, particularly in the context of healthcare activities and the process of chronic care management. This leads to a review of the third stream of literature that underlines characteristics of the process of ‘*chronic care management*’, as the context of this study.

2.2 Community Resilience

The concept of community resilience has its roots in many different disciplines including psychology (e.g. Rutter, 1987), public health (e.g. Carthey et al., 2001), disaster response (e.g. Manyena, 2006), community development (e.g. Zautra, Hall, & Murray, 2008), natural resource management (e.g. Davidson-Hunter & Berker, 2003), and social–ecological systems (e.g. Folke et al., 2010). In particular, some of the seminal works on the concept of community resilience were developed by Judith Kulig and her colleagues who were working mainly in developmental and positive psychology in the area of health promotion (Kulig, 2000; Kulig, Edge, & Joyce, 2008).

However, the concept can be readily extended to include elements from different disciplines. These might include elements from disaster response and crisis management such as the survivability of physical infrastructure (Walks, 2001), to less tangible issues related to sociology such as public trust and social cohesiveness (Magis, 2010). Although each discipline has taken a novel way to conceptualize and discuss this construct and has shed new light on this characteristic; yet the theoretical and empirical literature on community resilience shows little overlap and consensus about the definition of this construct and its dimensions. That said, the existing literature

suggests that the two dominant and fruitful views on community resilience are the psychological perspective and the socio-ecological view.

2.2.1 Psychological Perspective of Community Resilience

Resilience research has its origin in psychology and traditionally the focus has been on understanding this construct at the individual level (Coutu, 2002). From this perspective, resilience is a trait of individuals and as Wagnild and Young (1990) point out, it is a personality characteristic that moderates the negative effects of stress and promotes adaptation. As such, a review of the literature shows that much of the resilience research and writing has focused on individuals and, for example, the focus of pioneering studies by Garmezy (1991) was on the role of resilience in the mental health of children.

From the psychological perspective, resilience refers to a dynamic process that encompasses positive adaptation in the presence of significant adversity (Schetter & Dolbier, 2011). As Stewart & Yuen (2011) point out, this definition represents two critical conditions. First, it underlines an exposure to significant threat or severe adversity. Second, it focuses on individuals' achievement of positive adaptation despite their exposure to adversity.

While the early work on resilience was concerned with individuals, more recent studies show that there has been a slight shift of focus, by giving more recognition to the role of community in individuals' resilience (Fleming & Ledogar, 2008). This has created some variation in the use of resilience as a term from a psychological perspective. For example, some studies adopt Werner's (1995) view of resilience that is based on an individual's development of protective factors despite his or her exposure to high risk environments. However, as Luthar (2006) contends, the most common definition of resilience in psychology is positive adaptation despite adversity.

Studies by Resnick (2000) and Norris et al.(2008) showed that the notion of community resilience in psychology developed from the recognition that many of the factors that influenced the resilience of individuals were in fact external to them. This recognition has extended further the discourse on resilience, arguing that it is not a condition of individuals alone, but also exists as a trait of an individual's social, cultural, and political settings (Luthar, 2003).

In this modern psychological view on resilience, researchers interested in psychological and social determinants of health picked up the concept and extended its use from the domain of individual mental health to community health in general (Fleming & Ledogar, 2008). In this approach community resilience is the successful adaptation of groups or the whole community to stressful situations, oppressive systems, and other challenges of life (Case & Hunter, 2012). However, as Ungar (2011) points out, to make these adaptations possible, it is necessary to understand the interlinked biological, psychological, and sociocultural aspects of individuals that underpin the resilience attribute of a community.

In general, recent resilience studies in psychology can be categorized into three main streams. First groups are studies that focus on the resilience of individuals who have experienced adversity at different stages of their lives. Good examples of this group are Werner's (1995) study of children living in physically abusive homes, or Luthar's (2003) study of individuals with mental illness who live in poverty.

The second group of studies related to resilience is concerned with people with life threatening medical conditions such as HIV or cancer. The studies in this group investigate the factors associated with adjustment to the disease, quality of life, and remission or survival (Harrington, 2009; Mo & Coulson, 2010). This group of studies goes slightly beyond individuals' attributes by bringing into the picture elements from community and the surrounding environment that could influence the resilience of individuals (Pakenham & Cox, 2009; Park, Chmielewski, & Blank, 2010).

A third approach to resilience studies focuses on the reactions of people and their responses to acute trauma. This stream of research tries to examine how individuals adapt emotionally to unexpected and traumatic events especially to community disasters such as hurricanes or earthquakes (Kilmer, Gil-Rivas, Tedeschi, & Calhoun, 2010). This category of research recognises individuals as a part of a larger community where individuals' resilience does not lead to community resilience, but rather they are part of community capital and their resilience is a necessary condition for their community resilience (Knapp, Bauer, Perkins, & Snell, 2013).

The latter stream of research is more attractive as it has advanced the study of community resilience by theorizing it as three overlapping constructs. First, 'recovery' which refers to the psychological elements that enable a community to return to its

baseline functionalities following a major stressor or adversity (Zautra, Arewasikporn, & Davis, 2010). The second dimension of resilience in this theoretical approach is 'sustainability'. Sustainability represents the psychological capacity of a community to continue forward during disturbances or stressors and maintain functioning without any disruption (Winter & Koger, 2011). The third aspect of community resilience from this perspective is 'growth' that places emphasis on the new motives and capacities that a community gains for adaptation that in turn can take the community beyond its original levels of functioning (Quiros, 2010).

2.2.2 The Socio-ecological Perspective of Community Resilience

In this view the focus of community resilience emerges from a web of interlinked actors within a community that aim to maintain the existence of their community and improve the efficiency of its functionalities (Callaghan & Colton, 2008). From this perspective, success in reducing uncertainty by highly controlling and managing one aspect or group of actors that often fluctuates in the community, leads to changes in other actors or variables that operate at other levels or scales of the community (Gunderson, 2003).

A more accurate picture of community resilience that is based on socio-ecological view is presented by Berkes & Ross (2013). While previous research on community resilience mainly focuses on human aspects of resilience (e.g. Fleming & Ledogar, 2008), Berkes & Ross (2013) argue that the resilience of a community emerges from the dynamic and cross-scale interplay between environmental (e.g. abrupt change) and human (e.g. cultural attributes) factors. These factors can vary from human and social capital (Callaghan & Colton, 2008) to technology and physical infrastructure (Cocciolo, Mineo, & Meier, 2010).

By taking this approach, as Folke et al. (2010) put, community resilience goes beyond the notion of resistances to changes or recovering from disturbances. It is then more about learning how to use resources efficiently and understand the opportunities that disturbances create for the community to recombine its structures and process, and understand the new emerging trajectories (Nelson et al., 2007). Folke (2006) argues that this approach enables a community to develop adaptive capacities as the essential ingredient of community resilience.

As Carpenter and Gunderson (2001) state, the key role that individuals and small groups play in community resilience is 'to learn to adapt to and manage by changes' rather than simply to react to them. According to Carpenter and Gunderson (2001), ability to absorb disturbances, maintaining functions and identity, self-organisation, and the ability to build and increase the capacity for learning and adaptation are the major characteristics of community resilience.

However, it is important to recognise that not all communities are able to develop these capacities and gain these capabilities. As Magis (2010) explains, in the face of uncertainties and challenges, communities can fall within a spectrum between 'resilient' and 'vulnerable'. At the 'resilient' end, communities have the capacity to deal with the problems and disturbances posed by their environments and develop capabilities to effectively support their members and their needs (Davidson-Hunter & Berker, 2003). These communities are able to develop social, intellectual, and technological capacities that enable them to understand change and take the necessary measures and steps required to support their members. They are willing and prepared to learn from challenges and problems, embrace new changes, and adapt to them in order to maintain the structure and functionalities of their community (Manyena, 2006).

At the other end of the spectrum, communities lack the capacities to accept, understand, and learn from the changes and they are incapable of incorporating those changes into their lives (Harrington, 2009; Magis, 2010; Proudfoot et al., 2010). These communities generally find it difficult to embrace change and they do not have the social resources to learn from change and adapt to the new conditions (Adger, 2006). These communities may be stable but they are not resilient against disturbances, but rather, they are vulnerable to the changes imposed by their environments. In reality, as explained by Walker and Salt (2006), most communities exhibit a degree of resilience and vulnerability when they face disturbances.

The two highlighted perspectives about community resilience suggest that there are a number of constructs that chiefly contribute to community resilience. The different dimensions of these constructs can be subsumed under three broad categories: individuals' capacities, environmental factors, and community capitals. Further, these perspectives show that technology - information and communication technology in

particular- as the fourth category that plays a significant and influential role in the dynamics of communities and the development of their capacities and capabilities. Research into community resilience recognises that technology can play an influential role in the development of new capabilities in communities.

In particular, research in this area shows that technology can support people's increasing need to access information about the risks and uncertainties in order to decide on the best possible approaches (O'Sullivan, Kuziemy, Toal-Sullivan, & Corneil, 2013; Simpson, 2005; Sterbenz et al., 2013). That said, among many types of technologies employed by communities, in the last several years, communities have witnessed a tremendous growth in the emergence and application of information and communication technology (ICT), and the opportunities that are brought by these technologies (Castells, 1996).

Table 2.1 A summary of the preliminary conceptual development

Preliminary areas	Informing perspective	Example studies
Environmental factors	Socio-ecological perspective	Nelson et al. (2007), Bernard and David (2006)
Individuals' capacities	Psychological perspective	Gunderson (2003), Wang and Ramiller (2009)
Community capital	Socio-ecological and psychological perspectives	Berkes and Ross (2013), Callaghan and Colton (2008)
Information technology	Information systems literature	Simpson (2005), Mignone and Henley (2009)

Reissman, Spencer, Tanielian, and Stein (2005) argue that people rely more and more on information and communication technology as they increasingly need to get access to more information and they need the information quickly. This behaviour and need are even more evident and critical if the situation is marked by uncertainty about exposure, health, and the consequences and risks involved when following the unreliable sources of information (Mignone & Henley, 2009). As such, the influences of information and communication technology on different aspects of community resilience have been at the centre of attention from many researchers (Grace & Sen, 2013). In summary, the four major constructs that each plays a role in community

resilience are environmental factors, individuals' capacities, community capital, and information and communication technology. Table 2.1, provides a summary of these constructs as the preliminary conceptual development of this study. Each concept will be discussed in details in the rest of this section.

2.3 The Role of Environmental Factors in Community

Resilience

Literature about community and its attributes shows there is a strong relation between community resilience and the role of environmental factors. This relation is more evident in the studies that take a socio-ecological approach toward community attributes. This body of literature suggests social milieu, regulations and policies, and culture as three major environmental factors that have an impact on a community's resilience.

2.3.1 The Role of Social Milieu

Literature about socio-ecological communities emphasizes the importance of social environment in shaping community resilience (Holling, 1973). As this body of literature suggests, the most influential aspects of social environment in community resilience are the diversity of the actors and resources within a community (e.g. Walker et al., 2006); a community's demographical structure (e.g. Campbell-Sills, Forde, & Stein, 2009); and the institutions that influence the functionality of a community (e.g. Haddad, 2005).

Studies show that the diversity of the available resources to members of a community and the variety of its functional groups contributes to its resilience (Garmestani, Allen, & Cabezas, 2008). Community resilience, according to Cutter et al. (2008), not only depends on the amount and strength of economic, social, and human resources, it is also a function of the diversity of these resources.

Ben- Hur, Fragman- Sapir, Hadas, Singer, and Kadmon (2012) and Walker et al. (2006) argue that it is useful to recognize the necessity of existence of two kinds of diversity in a community. First, the functional diversity of different groups, and second, the skills diversity within each group that shows the landscape of possible responses to disturbances. Walker et al. (2006), argue that diversity plays a central

role in the resilience of communities because the effective resources of communities that are dependent on a narrow range of actors exhaust quickly and those communities are less capable of coping with abrupt changes.

Kavanaugh, Carroll, Rosson, Zin, and Reese (2005) and Hampton, Lee, and Her (2011) also suggest that information and communication technology can offer a new means of expanding the diversity of a community, by enabling people to form new social networks and reduce the traditional barriers (e.g. geographical barriers) that would prohibit people from accessing diverse opinions and resources. However, Castells (2004) argues that ICT has not always had this type of effect on communities as the diversity of the actors across a community can have an adverse impact on how technology is adopted and used by members of a community. As Selwyn (2006) points out, gaps in the actors' computer literacy, age, and communication skills can create inconsistencies in the adoption of technology and can even create resistances in using them.

The demographic aspects of community, as a major constituent of community resilience have also received considerable attentions in the literature (e.g. Banks, Knight, McBurney, Blair, & Lindenmayer, 2011; Hugo, 2005; Wells, 2009). Hugo (2005) recognises community demographics as an indicator of community resilience as it has direct influence on human, economic, and social capital of the community through generation and allocation of tangible and intangible resources. A recent study by Wells (2012) also shows the influence of a community's demographics is central to its resilience as any changes in demographics can create changes to adaptability and coping capabilities of a community.

Further, by bringing out the influential role of community demographics in resilience, Campbell-Sills et al. (2009) argue that effective approaches to community resilience require a deep understanding of the complex interplay between a community's human capital and its demographics. Concurring with Campbell-Sill et al. (2009), Jin, Park, and Kim (2010) argues that the introduction of information technology to communities and their fast growth in many aspects of communities' lives have created a new way of understanding and talking about their demographics. Jin et al. (2010) believe that these technologies have shifted the attention from individuals' characteristics such as age or gender, to the things that they can find in common

through online interaction such as common interests. Traud, Kelsic, Mucha, and Porter (2011) argue that this shift has added a new dimension to a community's demographics that would not be possible to observe before.

Institutions affect the way humans interact and live in community (Nelson et al., 2007). Therefore, as a major constituent of the social environment of a community, institutions have direct implications for the resilience of a community and its possible scale of adaptation (Demiroz & Sana Khosa, 2011). As Nelson et al. (2007) point out, numerous institutions, organisations, and formal social entities contribute to community resilience by influencing the provision of resources for developing adaptive capacity and coping abilities over time. Studies by Haddad (2005) and Gunderson and Light (2006) shows that many of these resources are concerned with economic capital, technology and infrastructure, information, knowledge, and learning capacities within a community. Also, Olesen and Myers (1999) show how institutions can influence communication and the exchange of information among members of a community. According to Longstaff, Armstrong, Perrin, Parker, and Hidek (2010) institutions also contribute to community resilience by providing forums for civic dialogue and action, by enhancing the quality of life and social welfare, and also by playing key roles in recovery from disruptions and stresses.

Bertot, Jaeger, and Grimes (2012) also underscore how information technology has influenced the interaction between citizens and institutions, for example, by giving more power and voice to ordinary citizens and holding institutions more responsible for performance and even their internal affairs. However, issues such as trust and the reliability of imparted information by the institutions, according to Welch, Hinnant, and Moon (2005), have created uncertainties around the use of technology by citizens.

2.3.2 The Role of Regulations and Policies

Researching communities, MacKinnon and Derickson (2013) suggest that community resilience is not only vulnerable to abrupt changes in the social and physical environments; it is also susceptible to changes in the policy and regulations that influence the relations and interactions between community members.

To show the relationship between community resilience and community policies Janssen, Anderies, and Ostrom (2007) argue that developing policies for communities

is not akin to playing a game of chance. Ostrom (2007) argues that failure in developing effective resilience can be in response to the failure of impromptu policies and actions that have created unbalanced shifts in social relations and community values.

According to Scheffer, Westley, and Brock (2003) and Leiserowitz, Kates, and Parris (2006), social systems are bounded by thresholds that may be triggered by responses to particular situations, and policies can shift these thresholds over time. These changes in the social thresholds, according to Brock (2004), have implications for community adaptation, because they represent shifts in what are socially accepted as approaches to the management and governance of disturbances or social changes.

As Gunderson and Light (2006) point out, resilience development in communities is not one-off activities; hence communities can become adaptable and resilient if the policies and regulations are conducive to maintaining ongoing relevant activities that can support and augment their resilience. Nelson et al. (2007) foreground this point by arguing that a critical challenge for communities and policy makers is to understand how policies are influenced by, and in turn influence, the performance of communities and their adaptive capacities.

Any shift in adaptability of communities and support for their resilience cannot occur without strong political support (Hughes, Graham, Jackson, Mumby, & Steneck, 2010). The next major challenge to support communities according to Garmestani et al. (2008) is the recognition that developing good policies that can produce optimal results for communities, is not a linear process, rather; it is an iterative process that requires constant monitoring and recalibration of the parameters driving the policy formulation.

The role of policies and regulation in the dissemination of information and people's access to information in communities has also been investigated (Bertot, Jaeger, & Hansen, 2012; Jha, Doolan, Grandt, Scott, & Bates, 2008). The focus of many of these studies has been on the role of technology and how technologies and policies can shape one another (Jaeger, Lin, & Grimes, 2008). For example, Jha et al. (2008) show how restrictive policies and privacy concerns can limit the application of technology in some communities. On the other hand, Kane et al. (2009) and Ali and Fahmy (2013) studies of the empowering role of information technology show how information

technologies (IT), such as mobile phones and social media have enabled members of different communities to have strong influence on the policies that have effected their environments and their lives.

2.4 The Role of Individuals' Capacities in Community

Resilience

Literature about community resilience highlights the strong relation between community resilience and the capacities of individual members of a community. This relation is evident in both socio-ecological and psychological approaches toward community resilience. Literature suggests that social network, communication abilities, learning capacities, and adaptation are the four major capacities that can play a role in community resilience.

2.4.1 The Role of Social Network

Social networks refer to the nature and extent of linkages between individuals (Kirmayer, 2009). According to Kim, Sherman, and Taylor (2008) social networks are the very foundation of communities and they represent the links between individuals and groups of people that are shaped through a variety of practical, instrumental, and emotional bonds. In their study of some indigenous communities, Plickert, Cote, and Wellman (2007) place emphasis on the values of social networks by arguing that these networks can provide their members with material, economic, and informational resources that assist them to attract social and emotional support from other members. The relation between individuals and their social networks, according to Kim, Sherman, and Taylor (2008), is a complex giving-and-receiving relationship. In this relationship, as Plickert et al. (2007) argue, people are embedded in a web of relatedness that provides them with social roles and statuses as well as a common purpose and direction to their life.

Adger (2000) discusses people's motivations in forming social networks and expanding them. Later, Adger (2006) argues that by building larger social networks, people try to have access to a diverse range of resources so they can have a larger capacity to address their problems. Adger believes this is because if they fail to develop strong social networks then they will be dependent on a narrow range of resources that

could exhaust quickly or become less relevant. Therefore, the whole community may become less capable of coping with change as the limited resources they have access to may provide them with insufficient capabilities to manage changes (Adger, 2006).

There is also a large body of studies that documents the profound mental and physical health impacts of social networks (Berkman, 2000). Research in this area suggests that social networks can buffer and absorb disturbances and challenging life events, thereby helping individuals to protect their mental health during difficult times (Thoits, 2011). Also studies concerned with the impact of social networks on the life of individuals suggest that there are direct physical health benefits for people when they get support from their social networks (Burke, Marlow, & Lento, 2010).

This notion of community resilience builds on the work of Bourdieu (1986) who posited the importance of individual-level connections as determinants of economic success and well-being. Building on Bourdieu's work, Wilkinson and Pickett (2009) underscore the value of social networks for community resilience by arguing that individuals can overcome life challenges and obstacles if they feel that their lives are interwoven in a close social network that supports them. The significance of social networks for community resilience is accentuated by (Berkes & Ross, 2013). They contend that community resilience is how people overcome stress, trauma and other life challenges by drawing from their social networks and cultural resources embedded in their communities.

Poortinga (2012) explains the significance of social networks in community resilience from the theoretical perspective of social capital. He argues that resilient communities have a high level of social capital that is manifested in the mutual trusts and participations in social networks. As such, according to Adger (2006) and Stokols, Lejano, and Hipp (2013) these social networks enable communities to boost their resilience by acquiring and possessing the necessary resources required to overcome vulnerabilities and adapt positively to change. An empirical study by Vásquez- León (2009) also shows that the development of social networks in different communities has reduced their vulnerability to change and disturbances. Therefore, communities with strong social networks and social support should be marked by a high level of community resilience (Berkes & Ross, 2013; Poortinga, 2012). As such, the existence of social networks is vital for community resilience.

While studies show that social networks play an important role in community resilience, the role of information technology in supporting social networks has also attracted much scholarly attention. Kavanaugh et al. (2005) and Matzat's (2010) studies of information technology, and social media in particular, reveal the positive impact of these technologies on the formation and functionalities of online and offline communities. Further studies related to virtual communities (Camerini, Diviani, & Tardini, 2010; Lev-On, 2010), tools that support communities of practices (Ranmuthugala et al., 2011; Wenger, 2000), and online healthcare communities (Bender, Jimenez-Marroquin, & Jadad, 2011; Van Uden-Kraan, Drossaert, Taal, Shaw, et al., 2008), all indicated the important and even crucial role of information technology in supporting social networks within communities.

2.4.2 The Role of Communication Abilities

The literature on community resilience strongly suggests that community resilience is intimately associated with good and effective communication and it can be increased through improvements in communication practices at both individual and institutions level (Cutter et al., 2008; Paton & Johnston, 2001; Stewart, Kolluru, & Smith, 2009). As Pooley, Cohen, and O'Connor (2006) contend that community resilience is characterised by people's knowledge as well as open and frequent channels of communication between and among individuals and institutions. The role of communication in fostering and supporting community resilience can be seen in three major areas of empowerment (Marsh, Kamuya, Rowa, Gikonyo, & Molyneux, 2008), creation of common meanings (Comfort, 2005), and sharing vital information (Dufty, 2012).

Pfefferbaum, Reissman, Pfefferbaum, Klomp, and Gurwitch (2005) refer to communication within a community as the creation of common meanings and understandings between the members of the community and the provision of opportunities for them to articulate their needs, viewpoints, and attitudes. The literature shows that different means and methods of communication are used by individuals to create common meaning in their communities. An early study by Couto (1989) suggests that verbal communication, story-telling, and the use of symbols are mechanisms that can be used to help members of a community to clarify their thoughts and create a common understanding about their issues. Later Tierney, Bevc, and

Kuligowski (2006), Norris et al. (2008), and Taylor et al. (2012) argue that the use of metaphors and telling the story of the community's experience through electronic media can play a positive role in understanding of the disturbances that may affect community. Tierney et al. (2006) and Taylor et al. (2012) also highlight the role of electronic media in facilitating communication between community members and policy-makers and how, by sharing their stories, people could influence the policies that would impact the resilience of their communities.

Studying the resilience of communities that faced crises, Abramowitz (2005) conducted multiple anthropological studies of different communities facing natural disaster or economic turbulence. Abramowitz (2005) argues that communities with higher level resilience are those who are able to plan and develop strategies that minimise their vulnerabilities, by developing and expanding methods and systems that can be used for effective communication and sharing vital information within a community. He argues that communication is one of the basic ingredients of community resilience as it enables the flow of information about the existing situation of the community, the threats it may confront, the services it can provide, or the resources that have to be recruited or mobilised.

When a community is faced with disturbances, individuals are in a great need of information. Without good communication of information, communities and individuals under stress are unable to make proper decisions (Winkworth, Healy, Woodward, & Camilleri, 2009). As such, being a mechanism for empowerment, Marsh et al. (2008) show that communication and dialogue can support community robustness. Nicholls (2012) argues that dialogue as a two-way communication supplies specifically required information to the involved parties and also informs the providers about what information is being sought. As such, communication is a key means for people and agencies to understand how individuals perceive and act on processes that contribute positively (or negatively) to their own adaptive behaviours.

The role of information technology in supporting communication among individuals has also been discussed widely in the literature (Greene, Choudhry, Kilabuk, & Shrank, 2011; Morreale, Spitzberg, & Barge, 2007; Murray, Burns, See, Lai, & Nazareth, 2005; Ressler et al., 2012). Hawn (2009) focuses on how information technology has enabled individuals to use multiple channels of communication to interact with each other.

Studies by Bouwman, Hooff, Wijngaert, and Dijk (2005) focuses on individuals' communication in the organisations and show how the uses of information technologies have provided new means of communication within communities of practitioners.

Chou, Hunt, Beckjord, Moser, and Hesse (2009) and O'Connor (2010) turn their focus on larger communities and their findings provide compelling support for the use of information technology to improve communication between individuals in healthcare communities. While some studies cast doubts upon the positive role of information technology in communication (Lee 2009; Putnam, 2000); most studies reveal that information technology such as social media (Ellison, Steinfield, & Lampe, 2007) and mobile devices (Seto et al., 2010) have made revolutionary changes to the way individuals communicate with each other (Burton et al., 2012).

2.4.3 The Role of Learning Capacities

Learning and learning capacity is foregrounded within the literature as one of the important factors that determine resilience of community (Folke et al., 2010; Grace & Sen, 2013; Gunderson, 2010). Walker, Holling, Carpenter, and Kinzig (2004) define resilience as the ability of a social system to respond and recover from disturbances, and includes conditions that allow the system to absorb impacts and learn in response to a threat.

As Walker and Salt (2006) point out, the amount of change the community can undergo and still adapt depends on the ability of its members to learn from their experiences. This capacity to adapt requires learning and the ability to make sense of the circumstances, especially using a combination of various sources of information and knowledge (Gunderson & Light, 2006; Smit & Wandel, 2006) .

Garmestani et al. (2008) characterises community resilience by three types of learning, including incremental learning, episodic learning and transformational learning that are necessary to understand changes and adapt to new circumstances. Incremental learning is a formal process of learning by which individuals learn as they try to understand change and solve problems (Greenwood, 1998). Episodic learning occurs as members of a community experience disturbances and try to reflect on their actions and decisions (Argyris, 1977). Transformational learning is the most profound

form of learning and it requires the reframing of the problem at several levels of community that can lead to a new understanding and interpretation of the problems and potential means of dealing with them (Walker et al., 2004).

In giving prominence to the importance of learning in community resilience, Nelson et al. (2007) contend that a community's ability to adapt and respond to change, is predicated on three fundamental characteristics: retaining structure and function, self-organisation, and the capacity for learning. Nelson et al. (2007) argue that communities that are more likely to face challenges and disturbances must be able to learn about their potential disturbances and options and develop the capacity to work together flexibly and creatively to solve problems.

Saadé and Bahli (2005) and Punie (2007) discuss the process of individual learning in the context of technology. Their studies in along with Cox and Marshall (2007), Lindsay, Bellaby, Smith, and Baker (2008), and Marziali (2009), highlight different trends of using information technology such as games, and different forms of social media, to support and augment learning at different levels. Conole, De Laat, Dillon, and Darby (2008) also suggest that the innovative applications of new information technologies has changed the whole paradigm of learning in a way that learning has become more personalised and focused rather than following pre-defined structures and processes.

The role of social media in individual learning has also attracted the attention of many scholars. For example, Wankel (2009) and Dabbagh and Kitsantas (2012) study this role in the context of formal education in schools and universities, while Lindsay et al. (2008) and Hawn (2009), have focused on how social media can support learning in healthcare activities.

These bodies of literature show that learning is a significant and necessary aspect of community resilience and in this context, information and communication technology has a promising potential to support individual learnings.

2.4.4 The Role of Adaptability

Adaptability is a central characteristic of community resilience (Folke et al., 2010; Hubbard, 2009; Smit & Wandel, 2006). Walker et al (2004) argue the more adaptive people are within a community, the greater the likelihood that the community will be

resilient in the face of disturbances and adversities. According to Castleden, McKee, Murray, and Leonardi (2011) the common element among different interpretations of community resilience is the ability of individuals to adapt to new situations.

In the resilience literature, adaptability is referred to as the capacity of individuals in a community to build resilience through collective learning and action (Ebi & Semenza, 2008; Pelling & Manuel-Navarrete, 2011). In other words, as Gunderson & Light (2006) contend, adaptability is the capacity of actors of a system to learn how to manage resilience. Walker et al (2004) and Plummer, Armitage, and De Loë (2013) argue this is because the dynamics and direction of changes in a community are dominated by human actions, and therefore adaptability of a community is a function of the social relations between individuals and the resources they can share.

Learning is a central and important aspect of adaptability (Berkhout, Hertin, & Gann, 2006; Livneh & Antonak, 2005). For individuals to be able to adapt to new circumstances or develop adaptability capacities; it is essential for them to learn about the new conditions they face and the means by which they can cope (Colland, 1993), adapt to change (Brown & Westaway, 2011), or transform (Folke et al., 2002). As such, the role that information technology plays in adaptability of individuals is mainly through supporting learning (Levin, 2008), and enabling individuals to find new ways of accessing the information that they need (Huysman & Wulf, 2006).

2.5 The Role of Community Capital in Community Resilience

Community capital is defined as the community resources, such as human and social capital, from which a community receives benefits and on which the community relies for continued existence (Rolfe, 2006). According to Callaghan and Colton (2008) community resilience relies upon various types of resources, capabilities, and capital stocks into which all community members contribute.

In general, research into community resilience shows that there are a variety of types of community capital, resources, and capabilities and the most important community capital and resources that contribute in resilience are human capital (Coleman, 1988; Storper & Scott, 2009), social capital (Bourdieu, 1986; Callaghan & Colton, 2008), and a community's supportive infrastructure (Berkes & Ross, 2013). The following section briefly explains these major community capitals and resources.

2.5.1 The Role of Social Capital

For a community, to gain resilience capacities, it is necessary to develop and have access to the resources of resilience (Callaghan & Colton, 2008). Aldrich (2012) identifies social capital as the major resource of resilience in a community and argues that social capital facilitates trust and creation of social networks within a community. Such network that are built on social relations, according to Folk et al. (2005), are the essential elements for a community to develop capacities for moving toward resilience.

The principal idea of social capital is that social networks are comprised of different resources and people invest, access, and use these embedded resource to gain returns (Lin, 2002). Putnam (2000) describes social capital as a set of relationships between the members of a community that have developed around shared values, norms, and trusts. Based on this perspective, the cognitive, psychological, and social foundations of these shared values, norms, and trusts are social networks (Coleman, 1988; Murphy, 2007; Steinfield, DiMicco, Ellison, & Lampe, 2009).

From a social capital perspective, the value of these social networks is that the resources embedded in them can be mobilised by actors (Dale & Newman, 2010; Simpson, 2005). As Dale and Newman (2010) explain, social networks are the major generators of social capital within community as they can identify how a community functions and to what degree its members are able to access community resources and support each other. Adger (2010) suggests that communities are limited in their abilities to adapt by their abilities to act collectively, and social capital, trust, and organisations greatly influence this capability to act collectively (Pelling & High, 2005)

This implies that social capital does not simply exist as an independent attribute of community, but requires actions to establish and maintain it. As Callaghan and Colton (2008) stress, social capital cannot be observed on its own, but only in the interactions between individuals and among groups. As such, the activities that support the formation or expansion of social networks can help to build or support social capital within a community (Western, Stimson, Baum, & Van Gellecum, 2005).

In the context of community resilience, social capital has received much attention from researchers. Adger (2010) argues that the resilience capacities of communities are

limited by their abilities to act collectively, and suggests that social capital can influence this capacity by creating the means by which people can develop trust and share resources.

According to Murphy (2007) community resilience is highly influenced by the level of social capital as it can become the basis for creating mutual trust, new social norms, and participation of community members in social changes. Aldrich (2012) highlights the importance of social capital by arguing that community resilience is intertwined with the degree to which people in their community demonstrate a sense of shared responsibility and trust. Poortinga (2012) believes social capital enables a community and its individual members to take advantage of opportunities for addressing community needs and confronting situations that threaten the safety and well-being of the community members.

Therefore, social capital can be the source for the necessary strengths and abilities required to overcome vulnerabilities and adapt positively to changes. As Mancini and Bowen (2009) and Jones, Rowson, and Broome (2010) points out, the social capital of a community is its repertoire of social energy and capacities that generate actions and interactions within and between formal and informal social networks, in order to drive changes or adapt to new situations.

The role of information technology in social capital has been vastly studied. There are two dominate perspectives. The first perspective dismisses any positive role of information technology in a community's social capital, by arguing that these technologies diminish or weaken the real social relationships among people, and weaken the ties that can form through face to face interactions (Putnam, 2000; Valenzuela, Park, & Kee, 2009).

The second group believes that information technology is a ubiquitous phenomenon and it has provided people with capabilities for social networking and opportunities that would not be possible in the absence of these technologies (Mignone & Henley, 2009; Tomai et al., 2010; Williams, 2006). By acknowledging the challenges these technologies, this group provide empirical evidence to show that some technologies such as mobile devices (Campbell & Kwak, 2010), social media (Ellison et al., 2007), or virtual reality platforms (Huvila, Holmberg, Ek, & Widén-Wulff, 2010), have helped

people to enhance their social capital and improve those aspects of their lives that are influenced by their social networking and trust.

2.5.2 The Role of Human Capital

In the existing literature, human capital is often known and described as the role that human knowledge and skills can play in the growth of a community, particularly in economic growth (Barro, 2001; Cohen & Soto, 2007) . From this perspective, knowledge and skills are the necessary ingredients for the growth of most communities; however, the type of skills and knowledge that are important for the growth of a community depend upon the specific context within which a community exists and the future vision of that community (Teachman, Paasch, & Carver, 1997).

Some scholars advocate the role of human capital in community and believe that the diversity of context dependent knowledge and skills are necessary to the existence of a community (Cohen & Soto, 2007). However, they also argue that such knowledge and skills are not sufficient elements to maintain the strength and ongoing functionality of a dynamic community (Davenport, 1999). Other necessary components, according to De Raadt and De Raadt (2005), that play significant role in the resilience and strengths of a community are: personal values, basic moral character, emotional stability, and physical health.

Bollman (1999) argues that institutions which can promote and facilitate social activities, play significant roles in developing social and contextual skills, and supporting different aspects of human capital within a community. Callaghan and Colton (2008) believe that establishing and enhancing such institutions provide the social infrastructure for building the required capacities to enrich human capital at both personal and community levels.

Many studies, however, suggest that the existence effective institutions is dependent on the way technology is used within a community (e.g. Chari & Hopenhayn, 1991). This group of scholars mainly give emphasis to the relationship between information technology and human capital to show how communities can be benefitted from these technologies and become stronger and more cohesive (e.g. Colombo & Grilli, 2005; e.g. Doménech, 2006). For example, Ketteni, Mamuneas, and Stengos (2011) show that communities that have a higher level of information technology, possess a higher

level of human capital as there are more means and opportunities to create and share knowledge. Benhabib and Spiegel (1994) focus on the level of education as an indicator of human capital in communities and show the more reliance of information technology in education and learning create higher output in the community's human capital. Ciccone and Papaioannou (2009) and Tambe and Hitt (2012) findings on the other hand reveals that the higher level of human capital in community can create a growth in the applications of information technology in communities. As such, as Lund Vinding (2006) point out, information technology and human capital are important factors that driving the growth of one another.

2.5.3 The Role of Supporting Infrastructure

Supportive infrastructure refers to technologies, services, and facilities that are in place to meet the needs of community members by promoting social interaction, supporting social networks, and enhancing overall quality of life (Cox, Arnold, & Tomás, 2010). Community supportive infrastructure covers a wide range of services, technologies, and facilities, from roads, water systems, and parks to communication technologies and the institutions that support and maintain the operation of these services and facilities (Ostrom, 2007).

In particular, the technological infrastructure that supports communication within communities has gained extensive attention within the literature (Magis, 2010; Ostrom, 2007). Many of these studies show that the existence of a flexible and reliable communication infrastructure is an essential component and feature of community resilience, because such an infrastructure provides effective support to the dissemination of local information (Leidner, Pan, & Pan, 2009), raising awareness (Keim & Noji, 2011), and facilitating learning (Urquhart, Liyanage, & Kah, 2008).

Studies also highlight that communication infrastructure can support community social and human capital by facilitating the emergence of social networks (Ellison, Steinfield, & Lampe, 2006) and improving the quality of community and personal knowledge and education (Huysman & Wulf, 2006). As Folke et al. (2010) contend, in a given community, the existence of adequate and proper communication infrastructure provides a base upon which to develop a strong foundation of human, social, and cultural capital within a community that can lead to more resilience.

2.5.4 The Role of Culture

Hofstede (1984, p.260) defines ‘culture’ as

“the collective programming of the mind which distinguishes the members of one human community or group from another”.

Research into community has identified culture and cultural capital as one of the core contributors in community resilience (Callaghan & Colton, 2008). For example, Castro and Murray (2010) coin the term ‘cultural adaptation’ to underline resilience as part of a community’s cultural repertoire. Studies in this area also strongly suggest that what is valued culturally is also socially determined, and the strength of social and human capital as the major aspects of resilience, are largely dependent upon the strength of the community’s cultural values and norms (Panter-Brick & Eggerman, 2012).

In many social science studies resilience and adaptation in human communities have been concerned with the strength or survival of a culture. For example, researchers such as Schetter and Dolbier (2011) and Smit and Wandel (2006) suggest that resilience is a consequence of cultural adaptation and practices which have allowed a culture to survive through time.

From this perspective a resilience approach implies that the social and cultural capital of a community cannot be considered in the absence of one another but must be understood as related aspects of a community (Callaghan & Colton, 2008). This means that community may be able to absorb changes from a social perspective, but a lasting resilience cannot be achieved unless the culture of adaptation is accepted and practiced by people within a community (Panter-Brick & Eggerman, 2012).

The interaction between community culture and the use of information technology has been the subject of many information systems studies (Al-Gahtani, Hubona, & Wang, 2007; Alavi, Kayworth, & Leidner, 2006; Vance, Elie-Dit-Cosaque, & Straub, 2008). According to Leidner and Kayworth (2006) it is important to understand the relation between culture and the use of information technologies as culture at various levels, including national, organisational, and group, can influence the successful use of information technology.

Gallivan and Srite (2005) discuss the influence of information technology on community culture by arguing that beliefs and values regarding information technology permeate communities, and from a variety of ways it is important to recognise the importance of articulating the cultural assumptions that are embedded into information technology. Vance et al. (2008) further expand the influence of information technology and community culture by showing that not only community culture directly affects people's trust in information technology artifacts, but also the characteristics of information technologies can moderate the cultural beliefs that can affect people's trust in technology.

2.6 Approaches to the Role of ICT in Community Resilience

Considering the purpose of this thesis (i.e. understanding the role of social media – as instances of ICT - in supporting community resilience), it is important to understand how the relation between information and communication technology and community resilience is discussed within existing literature.

Some studies suggest that information and communication technology is considered to have negative impact on community resilience by decreasing or diminishing the real social relations among people and debilitating its social capital. Putman (2000) defines social capital as the connections among individuals that is manifested in their social networks and the norms of reciprocity and trustworthiness that arise from them. Putnam (2000) argues that electronic communications have created adverse impacts on a community's social capital by reducing civic involvement in collective social activities.

He states that the increasing use of information and communication technology is one of the most powerful social trends of modern life that has lightened people's souls and enlightened their minds, but it has also made them dramatically private and passive. By providing evidence, Putnam argues that the onset of this trend coincides exactly with the decline in social connectedness within different communities and shows those people who spend more time using technology are distinctively disengaged.

Fischer (2005) challenges Putnam's arguments about the impact of information and communication technology on community resilience. She argues that the decrease in social capital is not constant across all measures of social capital and the unlikely

decrease of social relations through the use of information and communication technology are short-term and negligible.

A more recent study by Kennan, et al, (2008) claims that as the result of wide spread usage of information and communication technology, a transition in our understanding of the concept and nature of social relations and connectedness is inevitable. They argue that the force behind this major transformation is the new modes of social interaction that challenge the traditional and strong notion of local community and civic relations and bonds. This transformation has become the motivation for the formation of different interest-based online communities that are more spatially dispersed and more diverse in their formation, management and utilisation (Haythornthwaite & Kendall, 2010; Shklovski, Palen, & Sutton, 2008).

In general, the debate among scholars has led to the creation of three dominant perspectives about the impact of information and communication technology, and specifically the use of new Internet-based technologies, on community resilience and the social relations among community members. In brief, these perspectives can be cast in three broad genres of arguments:

2.6.1 Information and Communication Technology Transforms Communities by Removing Traditional Barriers

Some scholars believe that information and communication technology provides innovative means to overcome traditional barriers to communication and interaction with people who have similar interests but live in remote geographical locations (Urquhart et al., 2008; Wellman, Boase, & Chen, 2002; Wellman, Hasse, Witte, & Hampton, 2001). They believe this impact of information and communication technology on communities can lead to a major transformation in social relations and civic involvement by shifting the notion of collective action and collaboration from local and group-based solidarities towards more spatially-dispersed and interest-based social networks.

2.6.2 Information and Communication Technology Supplements Communities by Providing Alternative Means of Interactions

Scholars who advocate this view believe that information and communication technologies are not necessarily replacing the existing patterns and methods of interactions, but instead they facilitate existing social relationships and help to increase methods and patterns of social relations and civic involvement (Mignone & Henley, 2009; Quan-Haase, Wellman, Witte, & Hampton, 2002). As a result, they argue that information and communication technology can create stronger social relations and communities that are more resourceful through the elevation of trust and an increase in possible alternative options.

2.6.3 Information and Communication Technology Weakens or Diminishes Communities by Eroding Real Human Interaction

Based on this view, information and communication technology provides massive entertainment and information capabilities that draws people away from real interaction and communication with others. The proponents of this view also argue that although information and communication technology can facilitate communication on a global scale, at the same time, it reduces people's interest in investing their time and effort to boost connectedness in their local community (Lev-On, 2010; Nie, Hillygus, & Erbring, 2002; Putnam, 2000). As such, based on this view, the consequence is that small communities become weaker as they lose their capabilities to support each other effectively and become resource-less in dealing with potential threats and hardships.

Over time, studies about the roles and influences of ICT on community resilience have been shown to be inconsistent (e.g. Calhoun, 2007; Day, 2005; Wang & Ramiller, 2009); however, as Smith & Stirling (2010) point out, one thing that is obvious and almost common in most studies is that no community can survive without relying on the capabilities that technologies can offer them. As such, it is justified to pay special attention to technology as one of the major constructs that have considerable influence on community resilience.

Two of the above perspectives suggest that information and communication technology can support communities to create new social networks or expand the existing ones and therefore, have potential for influencing community resilience. As such, along with a community resilience perspective, these studies suggest that information and communication technology can be seen as an actor or construct within community that influences the creation and mobilisation of the resources which are important to community resilience (Magis, 2010).

Up to this point, the presented literature featured the important aspects and dimensions of *community resilience*. It also highlighted significant interplays between different aspects of *community resilience* and *ICT*. While, those concepts and relations are significant to this study, it is also prominent to see them through a lens of an abstract and high-level theory that makes it possible to frame and make a better theoretical sense of the discussed concepts. As such, the next section provides an overview of the adopted theoretical lens for this study.

2.7 Theoretical lens: Sociomateriality

There are many theories to draw on in order to understand the characteristics of technology and explaining their impacts on people's life and on communities. For example, the set of concepts that are recognised under the banner of Social Capital (Bourdieu, 1986) or the ones that discussed by Activity Theory (Engeström, Reijo, & Raija-Leena, 1999), all can appropriately be adopted and adapted to explain and understand the complex social relations between people and ICT in communities. Also, theories such as Social Learning Theory (Bandura, 1977) can be employed to explain the impact of ICT on people's learning activities, their behaviours, values, and attitudes within communities.

One common characteristic of these theories is their view toward the social world is either undersocialised or oversocialised (Bloomfield, Latham, & Vurdubakis, 2010). In another word, in explaining the social phenomena, by abstracting social from material, most of the existing theories (e.g. Social Capital or Social Learning Theory) undermine or completely ignore the social aspects the material features of a phenomenon (Orlikowski & Scott, 2008). These attributes do not mean that these theories are incomplete or misleading, as they have generated insights into many of the contemporary social and technological phenomena. As Weber (2003) argues, the

characteristics and the nature of the phenomena under investigation were lending themselves to the explanations offers by these theories.

However, as Scott and Orlikowski (2014) point out, new technologies such as social media requires new theoretical approaches that can fully explain their dynamic and emergent nature. According to Treem and Leonardi (2012) and Majchrzak et al. (2013), what makes social media and other new information and communication technologies different from the more traditional ones is the existence of strong ties and relations between their social dimensions and their material features. As Scott and Orlikowski (2014) argue, this characteristic of new and emerging technologies calls for new ways of conceptualising them, by which we can gain a balanced insight into their nature and their roles in human's life. As such, they argue that a set of concepts that are wrapped under the banner of *sociomateriality* exhibits promising theoretical apparatuses and constructs for understanding and explaining these new technologies such as social media.

Sociomateriality is a theoretical framework that conceptualises the social world by explaining the relation between the material agency of technological artifacts and the social agency of human in practice (Orlikowski & Scott, 2008). The sociomaterial perspective attempts to explain the social world as the enactment of meanings and materiality in everyday practices (Orlikowski, 2010). In doing so, this perspective focuses on the performativity of 'social object' – the term that what was initially coined by Berger and Luckmann (1967) - and its relation to its material features (Zammuto, Griffith, Majchrzak, Dougherty, & Faraj, 2007); rather than representing it through language and numbers (Barad, 2003).

The concept of 'agency' is at the heart of sociomateriality. However, this theory makes a distinctive move away from seeing agents (i.e. humans and artifacts) as primarily independent and self-contained entities that influence each other, either through impacts (deterministic approach) or interactions (constructivist approach) (Barley, 1998). Instead, the focus is on agencies that have so thoroughly saturated each other in a way that boundaries between them are dissolved.

In this perspective materiality refers to the constituent features of a technological artifact that are available to all users in the same way (Leonardi, 2012). However, as Majchrzak and Markus (2013) put, because people come to materiality with diverse

goals and perceptions, an artifact can afford distinct possibilities or limitations for particular actions. This is because the material out of which an object is made can provide multiple affordances and it is possible that one object can produce multiple outcomes (Treem & Leonardi, 2012). Therefore, although materiality exists independent of people, affordances do not.

Looking at information systems artifacts through the lens of sociomateriality provides several advantages. The main advantage, according to Treem & Leonardi (2012), is that focusing on the entangled relationship between users' agencies and the material features of technologies, such as social media, enables researchers to avoid giving privilege the social determinism approach in explaining the patterns of technology adoption and use by users which entails ignoring the material properties of the technology itself. The implication of such approach for research is that researchers need to base their analysis on the entangled and symbiotic relationships between the actions to be taken in a specific context and the capabilities of these technologies (Majchrzak et al., 2013), rather than abstracting them within constructs and concepts (Bloomfield, Latham, & Vurdubakis, 2010).

2.8 Preliminary Conceptual Model

As discussed in previous sections, *community resilience* is a multidimensional concept that is used widely in many disciplines. That said, to study new and emerging technologies such as *social media*, and their potential roles in *community resilience*, a preliminary conceptual model was developed. A critical review of the presented literature in sections 2.2 to 2.7 gave rise to a model that underpins the conceptual foundation of this study. This model not only brings together the major concepts related to *community resilience* and *ICT*, it also frames those concepts within the boundaries of the adopted theoretical lens. Figure 2.2 provide an overview of this model.

The model presented in Figure 2.2 is a high-level conceptual framework, which provided this study with preliminary and major areas of conceptual focus that were important to the research question. As a result, by using this model as a guide during different phases of the study, I was able to avoid being overloaded by the intricacies of different concepts that might look promising to this study. The model also helped me to avoid getting overwhelmed by different aspects of research activities, especially

when I was steeped in different sources of qualitative data and inundated with the demanding tasks of data analysis.

The diagram presented in Figure 2.2 was used as a guiding research model to this study. For example, in relation to *community resilience*, the model brings to the fore the major and preliminary assumptions about the relationships between *environmental factors*, *community capitals*, *individuals' capacities*, and *information and communication technology (ICT)*, and shows how these concepts are interrelated to each other.

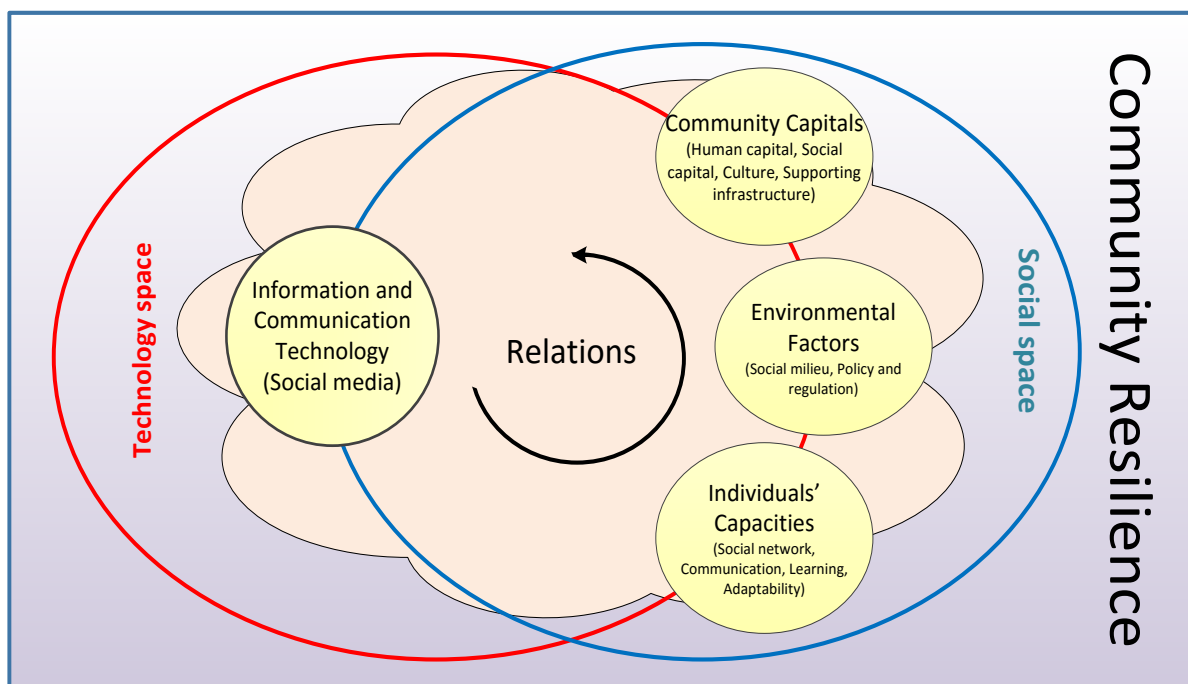


Figure 2.2 Preliminary conceptual model

However, it is also important to note that this conceptual model was not regarded as a rigid set of fixed premises that would tightened my openness and sensitivity to the empirical data. Rather, as Walsham (1995) and Klein & Myers (1999) suggest, it was treated as fluid and flexible set of conceptual entities, which made it possible for me to think about alternative views on take flexible approaches in interpreting the empirical data and exploring unexpected findings. As such, this model was treated as a conceptual guide that was subject to revisions and modifications as new empirical data were coming into play.

Briefly, Figure 2.2 suggests that *community resilience*, as an attribute of community, is influenced by four major interconnected constructs: *environmental factors*,

community capitals, individuals' capacities, and information and communication technology. By taking a holistic and critical view on the reviewed literature, the model shows that one way of looking at these constructs is by grouping them based on the nature of and entanglement of their agencies and therefore, categorising them into two categories of '*social space*' and '*technology space*'.

This way of categorisation, provides a new understanding of the concept of *community resilience* that is more abstract and theoretical. That said, the *social space* captures the human and social agencies of *community resilience*, while the *technology space* represents the technical features and technological agencies of *ICT*.

This holistic view on *community resilience* that is informed by the notion of sociomateriality suggests that it is nearly impossible to think about either space without recognising and understanding the influences of these spaces on each other. In other words, these spaces are entangled and interrelated to each other in a way that there is a constant and ongoing engagement between and among the elements of each space.

This implies that theoretically, it is difficult, if not impossible, to perceive the agency of the constituents of one space in the absence of the agencies of the actors in the other one. This means while each space represents the agency of its constituents independently, in practice, these agencies are in a dynamic and context dependent relationships with each other. As such, this approach suggests that *community resilience* is not a predefined and fixed concept, rather, it is dependent on how, within a specific social context, the social agencies of human actors entangle with the material agencies of specific technologies.

Conceptualising *community resilience* in this way has a number of implications for this study. First, it has implications for the philosophical position as this view is a departure from both pure constructivist and pure positivist views, but it requires a philosophical position that acknowledges both the social agency of human actors and the material agency of technology. Detailed discussion on this issue is presented in Chapter 3.

The second implication of the presented conceptual framework is for positioning the study within the landscape of theory. Understanding the dynamic relations between agents of *community resilience* as an ongoing engagement between two spaces of

technology and *social*, strongly suggests that theories, which could provide a balanced view about those agencies, are proper and fruitful theoretical approach for the interpretation of the empirical data. This means that I needed to base my analysis on the entangled and symbiotic relationships between human activities in a specific context (*social space*) and features and functionalities of *ICT* (*Technology space*) within that context (Majchrzak et al., 2013).

The presented discussions in this section outlined a detailed overview of the developed conceptual model that is grounded in *community resilience* and *ICT* literature. While the concept of *community resilience* and its dimensions were discussed in details in previous sections, the presented material in section 2.9 provides a detailed discuss on the technological focus of this study (i.e. social media).

In general, literature about *social media* suggests that these technologies have the potential to influence many attributes of communities and the relations between their members (e.g. Dufty, 2012; Frazier. J., 2011; Gruzd & Haythornthwaite, 2013). However, empirical findings in this area present a wide range of theories and models that are not necessarily convergent. Some studies argue that social media can have adverse impact on a community's social behaviour (e.g. Nie & Hillygus, 2002), while other studies suggest that technologies such as social media can support the expansion of boundaries beyond geographical limitations into 'virtual communities', and strengthen individuals social relations in the ways that were not possible before (e.g. Kobayashi, Ikeda, & Miyata, 2006; Räsänen & Kouvo, 2007).

As such, to provide more insight into the relation between social media and attributes of a community, following sections presents a critical review of the seminal works about *social media* and its potential influences on the dynamics of communities, especially, in the context of healthcare and *chronic care management*.

2.9 Defining Social Media

A review of the IS literature within the past few years shows that three distinctive approaches are used by IS researchers to define social media in their studies. In the first approach, that covers the majority of the social media related studies, the definition of social media is essentially unacknowledged and in Orlikowski & Scott's

(2008) language, it is '*absent presence*', that is unaccounted for in those studies (e.g. Forte, Larco, & Bruckman, 2009; Kane et al., 2009).

In the second approach, the definitions are too narrow, focusing on specific features of social media. Considering that social media cover a wide range of applications and features, these definitions present a limited picture of social media with a narrow scope of applicability. For example, boyd & Ellison (2007) present a definition of social media that is more oriented toward the social networking features of the social media. They define social media as the Internet-based media that enable and allow users to present themselves by constructing profiles within bounded systems; articulate a list of other users with whom they share a connection; and view and modify their lists. A similar approach for defining social media is taken by other authors as they merely focus on certain features or applications of social media in their studies (e.g. Arazy, Nov, Patterson, & Yeo, 2011; Gray, Parise, & Iyer, 2011). This approach to the definition of social media is only fruitful when a study is concerned only with specific features of social media (e.g. social networking) and the other features and applications are not included in its scope.

The third approach, takes a more general and broader perspective toward the definition of social media, however; publications that fall under this category essentially borrow their definitions from other disciplines. This approach is evident in more recent high quality IS publications, for example Urquhart and Vaast (2012) adopt a useful and high level definition of social media that originated within business and marketing literature.

Kaplan and Haenlein (2010) take a broader approach in defining social media by arguing that social media are neither Web 2.0, nor are they User Generated Content (UGC); rather they incorporate both these concepts and their associated technologies into a coherent class of Internet-based platforms, known as social media. Kaplan and Haenlein (2010) define social media as a group of Internet-based applications built on the ideological and technological foundations of Web 2.0, allowing users to generate content and exchange it over the Internet. This definition of social media encompasses different features of social media and presents a clear departure from the narrow definitions that merely focus on certain features or applications of these technologies.

Along with Kaplan and Haenlein (2010), others scholars like Kietzmann, Hermkens, McCarthy, and Silvestre (2011) take an inclusive approach to the definition of social media by arguing that the existence of the rich and diverse ecology of social media platforms entails a definition that spotlights their major functionalities. In defining social media, Kietzmann et al. (2011) highlight seven functional building blocks of social media, including identity, conversations, sharing, presence, relationships, reputation, and groups, and explain that these building blocks are neither mutually exclusive, nor do they all have to be experienced by users in a social media activity. However, they believe that the value of defining social media in this way is that it enables us to make a better sense of how different levels of social media functionality can be understood and be configured in practice.

While Kaplan and Haenlein (2010), and Keitzmann et al., (2011) adopt some broad ideological and practical perspectives for defining of social media, Treem and Leonardi (2012) present an alternative approach in defining these technologies. They criticise the exiting definitions of social media by arguing that the current definitions are either too application-focused, preventing them to be generalised across different contexts, or too broad, obscuring the ways social media may influence social behaviours. In other words, as Baym (2009) puts, studies of single feature or applications of new electronic media can give us an understanding of what happens within these electronic social contexts, but then we have very limited understanding of how individuals and groups link these contexts to one another as they traverse the Internet and meet the same individuals across multiple domains.

The implications for research, according to Treem & Leonardi (2012), is that any of these approaches provides limited insight into why the use of social media produces particular effects in different social contexts and how these technologies can become mutually constituted with the social contexts in which they are embedded. Alternatively, Treem & Leonardi (2012) take a theoretical approach that eschews a definition that is based on features of social media, but it is based on the affordances these technologies can offer to users including visibility, persistence, editability, and association. Visibility refers to social media's ability to make user behavior, knowledge, personal information and networks visible to others. Persistence pertains to the lingering availability of information communicated through social media even after it has occurred. Editability refers to the ability to refine and craft communications before

and even after it is viewed by others. Finally, association is the connections between/among individuals and between individuals and content.

Building on Kaplan and Haenlein (2010) and Treem & Leonardi (2012), the following definition of social media is adopted for this study:

Social media are a group of Internet-based applications that exhibit the following characteristics:

- Allows users to interact and collaborate with each other in virtual environments (Web 2.0 foundations) (O'reilly, 2007)
- Enables users to generate contents and exchange them in virtual environments. (UGC) (Van Dijck, 2009)
- Affords users the ability to make their behaviours, knowledge, preferences, and communication network connections that were once invisible or hard to see, visible to others (Visibility)
- Enables users to access the content they generated through their interactions even after communication between them is finished (Persistence)
- Affords users to craft and re-craft their communicative acts before make it visible to others (Editability)
- Supports the establishment of connections between individuals and between individuals and generated content (Association)

Defining and characterising social media in this way allow to approach and understand these technologies through a wider scope of their features and applications. This definition also enables to theorise social media in a way that is independent of their specific technological features, but bases on how users see and understand the capabilities of these technologies within and across different social contexts.

2.9.1 The Significance of Social Media in Scholarly Studies

The importance of social media and the significance of studying these technologies as new technological innovations have been widely discussed by scholars from different disciplines. Within the IS literature, the topic has been approached from a variety of perspectives, and studies in this area have shown fruitful findings and outcomes. For example, in their studying of 'digital natives', Vodanovich, Sundaram, and Myers

(2010) highlight how social media as a class of ubiquitous information systems is blurring the traditional boundaries between formal social contexts and informal personal spaces and they argue that the emergence of social media calls for a new IS research agenda and even a new IS research paradigm.

Oestreicher-Singer and Zalmanson (2013), also show that the widespread adoption of social media by individuals and groups is giving rise to new forms of user interaction and co-creation of community content in virtual spaces, which calls for a new approach to the reformulation of business strategy in many organisations. The implications of social media for decision making within virtual communities is also explicated by Chandra, Srivastava, and Theng (2012) while Vaast and Walsham (2013) highlight how social media can provide new research opportunities for the IS researchers. Moreover, in the study of organisational communication, Treem & Leonardi (2012) bring to attention the affordances of social media as social and material artifacts.

In other related areas such as IS-healthcare studies, for instance, Burton et al. (2012) show how social media can improve health communication in clinical and non-clinical settings, while Ressler et al. (2012) discuss the communicative aspect of social media in chronic care management.

These studies all provide valuable insights into the role of social media in different social phenomena and show how social media are shaping and being shaped by people's experiences of their social life. As Baym (2009) points out, with the prevalent use of social media the online realms are no longer contained within their own boundaries and what appears to be a single online entity often turns out to be a multimodal phenomenon. As such, it is important for researchers to examine and understand how people integrate these media into their daily social experience and what the underlying dynamics, through which these technologies form and change our relations, our communities, and ourselves, are.

Most researchers from different disciplines maintain the view that the growing popularity of social media and the diversity of their applications make these technologies attractive phenomena to be studied (e.g. Beer, 2008; Pachucki & Breiger, 2010). They argue for the significance of social media studies by contending that our knowledge about the influences of these technologies on people's personal and social behavior is still in its early infancy (Majchrzak, 2009). A deeper investigation of the

growing IS literature also underlines that the diverse motives of the IS researcher in studying social media are entrenched in their interests in exploring and understanding the implications of these technologies for personal (e.g. Zhao, Grasmuck, & Martin, 2008), social (e.g. Grieve, Indian, Witteveen, Anne Tolan, & Marrington, 2013), organisational (e.g. Da Cunha & Orlikowski, 2008), and communal (e.g. Oh, Agrawal, & Rao, 2013) aspects of the social world.

To make a better sense of this diverse and puzzling landscape of motives, the discussed reasons and presented arguments within the IS literature for justifying the significance of social media studies are grouped into seven major types of reasoning, as shown in Table 2.2.

This categorisation is not necessarily exhaustive but it provides a preliminary understanding of the major reasons why social media have increasingly become a central focus for many IS studies. It also provides a clearer picture of how these technologies can be positioned within the IS discipline and offers a valuable insight into the understanding of the existing and emerging trends of social media studies in the IS research.

Table 2.2 The landscape of social media studies in information systems

Areas of reasoning	Example of presented justifications	Sources (example studies)
Affordances of social media are important	<ul style="list-style-type: none"> • Provide new affordances • Affordances are unique • Affordances are dynamic • Affordances are unexplored 	<ul style="list-style-type: none"> • Vaast and Kaganer (2013) • Treem & Leonardi (2012) • Majchrzak et al. (2013) • Leonardi (2009)
Social media have implications for virtual teams and communities	<ul style="list-style-type: none"> • Facilitate communication • Support collaboration • Facilitate knowledge sharing • Give access to community resources 	<ul style="list-style-type: none"> • Wakefield, Leidner, and Garrison (2008) • Ransbotham and Kane (2011) • Chiu, Hsu, and Wang (2006) • Ellis, Oldridge, and Vasconcelos (2004)
Social media have operational implications for organisations	<ul style="list-style-type: none"> • Online/off-line relations • Structural implications • Social implications • Management implications 	<ul style="list-style-type: none"> • Vaast (2007) • Ridings and Wasko (2010) • Ellison et al. (2007) • Da Cunha and Orlikowski (2008)
Social media have implications for social changes	<ul style="list-style-type: none"> • Empowerment • Blur traditional boundaries • Support social movements • Create new relationships 	<ul style="list-style-type: none"> • Zhao et al. (2008) • Vodanovich et al. (2010) • Ali and Fahmy (2013) • Arora (2012)
Social media create new social opportunities and challenges	<ul style="list-style-type: none"> • Create new social ties • Create new social participations • Enable cultural change 	<ul style="list-style-type: none"> • Urquhart et al. (2008) • Wellman et al. (2001) • van Dijck (2013)
Social media have implications for personal developments	<ul style="list-style-type: none"> • Facilitate Learning • Improve communication • Support health promotion 	<ul style="list-style-type: none"> • Kane and Fichman (2009) • Baym (2009) • Korda and Itani (2013)
Social media have implications for research	<ul style="list-style-type: none"> • Implications for data collection • Influence research quality • Ethical implications • Create paradigm challenges 	<ul style="list-style-type: none"> • Murthy (2008) • Bhutta (2012) • Flicker, Haans, and Skinner (2004) • Pousti, Burstein, Urquhart, and Linger (2013)

2.9.2 Role of Social Media in Community

Studying community and its relation to social media have developed two broad bodies of literature. While the general purpose of both groups is to understand how people can employ social media to form communities, and how resources can be maintained, transformed, shared, or expanded by the use of these technologies, each group takes a different approach in defining and treating social media. For the first group, the major focus is mainly on the aspects and attributes of different type of communities and the role of technology is barely acknowledged. In most of the studies within this group,

there is almost no clear reference to the role of technology in the formations of communities and it seems that technology is there, but it is always in the background. For example, in his seminal work about communities, Cox (2005) draws on the notion of online communities of practice to argue for the importance of technologies such as social media in supporting the formation of communities. According to Cox (2005), a community can be understood as: (a) a group of people involved in a coherent craft or practice, (b) an informal group of workers doing the same or similar jobs, (c) a set of social relations and meanings that grow up around a work process when it is appropriated by participants, and (d) an informal club or a special interest group inside an organisation, set up explicitly to allow collective learning and cultivated by management action. As such, in his definitions of a community, Cox does not provide any reference to technology and only focuses on the social aspects and relations of a community.

However, the second group of studies are mainly influenced by the growing popularity of ICT among users, producing a growing body of research that has positioned itself at the intersections, crossovers, contradictions, and synergies between technology, (social media in particular) and offline worlds. As Haythornthwaite and Kendall (2010) argue, this shift of focus, has turned the old question of whether a community could exist online, to the new one that whether a community can exist without going online.

The focus of this stream of research is mainly on the ways people use ubiquitous Internet services, such as social media, to drive changes in communities and create new ways of defining, attaching to, and retaining communal attributes across different online and offline environments (e.g. Kavanaugh et al., 2005; Reich, Subrahmanyam, & Espinoza, 2012; Subrahmanyam, Reich, Waechter, & Espinoza, 2008). Of interest to many of these studies are the kinds of ties and relations that form such communities (e.g. Ellison et al., 2007; Van Cleemput, 2010; Wang & Wellman, 2010). Many studies also are interested in investigating how the level of online interactions within these communities may transform, extend, or augment their structures or functionalities (e.g. Dwyer, Hiltz, & Passerini, 2007; Oh et al., 2013; Valkenburg, Peter, & Schouten, 2006).

For example, in their study of social media and the reaction of community to disasters, Oh et al. (2013) study of social media in community crises highlights that how these technologies can operate as the intellectual infrastructure of communities and provide first-hand knowledge to the community and public that is not possible to access through any other ways. In their study, they present cases by which they show how the use of social media can change the role of ordinary people to become online citizens, and how these temporary citizens can act as the intellectual backbone of the community. Their findings show how community members can become first responders to their local issues and can leverage their local knowledge, that are typically not available to professionals, to mobilise their community resources, enabling the community to face unforeseen challenges. Their study clearly shows how the use of social media can empower a group of dispersed people to form and boost their sense of community, and distribute and use their local knowledge to deal with local threats or issues that can influence the integrity of their community.

The role of social media in increasing community participation is studied by Oestreicher-Singer and Zalmanson (2013). Their study focuses on social media as a vehicle for content generation by users. Their findings suggest that social media users, who are more active in their online communities, are substantially more likely to participate in their community growth and are more willing to support it through content generation and promotion. Their study shows that a community's viability is related to its level of user participation, and social media can facilitate such participation through innovative and ubiquitous communication.

Yates, Wagner, and Majchrzak (2010), turn our attention to the role of social media in the transition between traditional and modern ways of community formation. Building on the notion of knowledge sharing and knowledge shaping, Yates et al. (2010) provide a comparison between traditional approaches to community building and the use of social media as an emergent approach to community formation. They explain that in the traditional approach, building a community is bounded to geographical and interpersonal communication limitations; however, they argue that the use of social media gives the user a variety of capabilities by which they can obviate many of those limitations, and in many innovative ways. In their study, they explicate how social media can enable users to not only generate and share knowledge within a community; they also underscore the capabilities that some of the members can gain

to shape knowledge, that is, a purposeful activity of transforming existing knowledge into more useful knowledge. They conclude that social media can create a new community asset by facilitating the emergence of community knowledge-shapers, who are the protectors of community against knowledge noise through integration and diversity.

Inspired by Ellison et al.'s (2007) work, Erickson (2010) also investigates the role of social media in the formation of communities by looking at the social practices and technological affordances of these technologies. By comparing two different microblogging platforms, Erickson (2010) shows that the affordances of these technologies and the way they are practiced socially, create quite different bases for the formation and viability of communities. This study suggests that with the diversity of social media platforms and their affordances, there are varied ways to expect that social media can support and foster cohesive community formation.

Treem & Leonardi (2012) study the role of social media in communities from communication perspective. While their study extends Erikson's (2010) findings, their evidence is in contrary to the findings of some other researchers that suggest online communication would isolate users (Wellman et al., 2001). They show that social media can create a bridge between individuals and help build a greater sense of community by supplementing existing relationships. Treem & Leonardi (2012) argue that social media afford a number of different associations through both active connections and features of the technology. They suggest that such affordances have implications for communities through three means: supporting social connection, allowing community members access to relevant information, and enabling the emergence of new connections.

Kane et al. (2009), provide a broader perspective on the means that social media can support the formation and viability of communities. They argue, that in general, social media can support communities in four major fronts: (a) they enable communities to remove the geographical barriers and incorporate all the interested parties within their dynamic boundaries, (b) social media can significantly increase a community's speed of formation and magnify its impact and reach, (c) they create more democracy and equity within communities as the members can come together quickly and often be led by different people at different moments, and (d) social media platforms enhance

the power of online communities. Kane et al., (2009) underline the latter influence of social media by arguing that empowerment of community through social media can be achieved through four means:

Promotion of deep relationship: By using social media, community members can establish multifaceted relationships that are far richer than those used in earlier methods of interactions such as message boards and emails.

Fast organisation and mobilisation: Social media enable the easy formation of electronic communities, where the message can be communicated effectively, action around common interests or upcoming events can be promoted, and resources can be mobilised quickly.

Creation and synthesis of knowledge: Modern online communities built through social media can aggregate the knowledge generated by members into persistent documents and other more traditional artifacts.

Better filtering and control: Social media enable users to harness the dissemination of unreliable knowledge that would be worth little if there were no way for people to separate reliable knowledge from poor information.

The role of social media in community formation and viability is also studied by Ellison et al. (2006). Their study focuses on how social media can accumulate more online and offline social relations. They investigated this question from the social capital perspective and argue while not all aspects of Internet use necessarily increase the sense of community and social relations, the use of social media can foster closer relationships between users and accumulate more social capital for them. They show that such accumulation can be gained through the development of new relationships, connectedness, and the maintenance of relations as people move from one offline community to another. They also contend that online interactions through social media do not necessarily remove people from their offline world, but such interactions may indeed be used to support their relationships and keep people in contact.

The interconnection between online and offline influence of social media is further discussed by other scholars. Because most people connected through social media are also connected offline, Baym (2009) argues, that it is not right to treat online and offline environments as two contrasting and different entities and to perceive that

what happens in an online environment stays within its own borders. Baym (2009) contends that with the advent of new social media platforms, what happens via these new technologies is completely interwoven with what happens face-to-face and via other media and therefore, online realms are no longer contained within their own boundaries and the boundaries between online and offline realms are made to be transcended.

The focus of a number of studies has been on the relations between the online and offline worlds of social media users. Vass's (2007) study of a knowledge management system shows the continuity between the relations and interaction of members of an online community and their offline relations. In her research, Vaast (2007) adopted a situated learning perspective in an organisation to highlight how, within a hierarchical community, the use of social media can create a continuity between the practices of the tasks in online and offline interactions.

Vaast's (2007) findings are in contrast with Subrahmanyam, Reich, Waechter, and Espinoza's (2008) studies of the online-offline relation of social media. Their study revealed that although social media can influence the extent of connectedness in communities, the use of social media between different age-groups within a community can have different impacts on the connectedness within communities. Their study also shows that connecting the offline and online worlds through online communication is a variable of people's understandings of technology which not always represents a clear relation between their online and offline lives.

van Dijck (2013) provides a unique perspective toward the notion of online community. He looks to the issue from the perspective of human agency and technological affordances of social media and argues that Web 2.0 platforms are facilitators of both offline and virtual communities. van Dijck (2013) argues however, that these communities are not exclusively a product of human collectively and agency but also of technological agency and technical connectivity of social media. As such, he contends that the technical affordances inscribed in the architecture of social media can create quite different implications for the identity of individuals and the formation of communities.

A clearer picture of the role of social media in the formation of online communities is provided by Lovejoy and Saxton (2012). In their research, they focus on microblogging

and show that the two main functions of community-based activities on social media are community-building and dialogue. They provide a detailed explanation of how giving recognition and thanks and acknowledgment of current and local events, are primarily the dimensions of community-building element of social media, while responding to public reply messages and response solicitation are more directly associated with the dialogue aspect. Lovejoy & Saxton (2012) argue that what binds all these aspects is the goal of building and engaging with a productive and healthy online community.

The studies presented in this section share a number of common focuses about the relationships between social media and the formation or maintenance of communal relationships. First, they show that online interaction via social media has positive outcomes on the emergence and functionality of communities by supporting the interpersonal ties between the members and their participants. Second, they strongly suggest that the online and offline worlds of community, as a whole, are inseparable and it is necessary to study these two aspects together when the focus is the interaction of ICT and community. Together, these studies also show how social media present different affordances, that in turn can influence the ways these technologies are socially practiced, and the means by which they may affect communities and their attributes. Further, these studies demonstrate the rich potential for the application of different theories for explaining the phenomena that are at intersections between communities and social media.

2.9.3 Approaches to Social Media in Healthcare Studies

The existing literature about social media suggests that these media can influence many aspects of people's lives, including their health and well-being, and evidence shows that there is a growing rate of using of social media in many aspects of people's social life. However, literature about social media and their roles in people's lives mainly underlines two major aspects and influences of these technologies: opportunities and uncertainties.

In particular, in the healthcare arena, opportunities relating to social media platforms, such as patient forums, microblogging, and social networks, have been discussed and criticised by scholars from different disciplines. For example, Gruzd and Haythornthwaite's (2013) study of social media use in healthcare shows how these

technologies can bring new opportunities for healthcare to form and maintain communities that can be expanded into online realms. Their study shows that within such community, the participants may take different roles and have different influence on the dynamics of the relationships. By focusing on Twitter and patients' forums, Gruzd and Haythorthwaite's (2013) study revealed that in healthcare communities one of the most influential groups people who employ social media to provide health content to other patients and care givers.

For example, a study by Cavallo et al. (2012) underline the potential role of social media in supporting public health and promoting a healthy life style by creating new opportunities for conversations, dialogues, and interactions between patient, practitioners, care givers, and providers of health services. They attribute this characteristic of social media to two of their important functionalities: enabling extensive reach, and enhancing social support.

Also, in highlighting the potential roles of social media in healthcare, Greene et al. (2011) draw special attention to the growing applications of these technologies in supporting communication and social networking between patients and practitioners, particularly in the process of chronic care management. They show that social media have become important communication platforms for patients living with chronic disease, as much chronic disease-specific information is being exchanged on social media between them and practitioners. Greene et al. (2011) argue that social media provide new sources of knowledge, support, and engagement by providing forums for patients to share personal experiences, ask questions, and receive direct feedback from other patients or practitioners.

Cooper and Kar's (2014) study of patient with chronic disease is also consistent with Greene et al. (2011) findings. Their study reveals that social media is becoming an integral part of patients' self-management process. In their study of patient with diabetes, they show how patients use social media to share knowledge and build the expertise they require for their self-management activities. Through their study, Cooper and Kar (2014) found that social media were extensively used by people with diabetes to generate and contribute to online content, share experiences, and make contact with and support other people in a similar situation.

A more comprehensive map of the potential applications and challenges of using social media in healthcare is charted by Hawn (2009). Hawn discusses a number of areas in which the use of social media may influence healthcare related activities including: communication, legal concerns, empowerment, transparency, and the quality of the healthcare services. Her study shows that by giving patients the power of comparing care options and outcomes, and enabling them to share their insights and experiences about healthcare services; social media is transforming healthcare practices from a practitioner-dependent and unilateral decision making process to the one that is bilateral and more responsible.

Some studies turn their focus from patients to professionals and practitioners and investigate the role of social media in practitioners' activities. For example, a study by McGowan et al. (2012) focuses on the ongoing debate within the practitioners' community regarding the trustworthiness of social media. In their study of the use of social media among physicians, they try to address two significant questions. First, how physicians use social media to share and exchange medical information with other physicians; and what factors influence physicians' use of social media as a component of their lifelong learning and professional development. The findings of their study suggest that the use of social media can provide an efficient and effective method to physicians to keep up-to-date, to share medical knowledge with other physicians within the medical community, and to improve the quality of patient care.

Despite the growing number of studies in supporting that spotlight opportunities that may arise by the use of social media, a notable body of literature cast some doubt upon the usefulness of these technologies in healthcare. For example, while Cavallo et al. (2012) argue for the importance of social media in healthcare activities, findings from their study questions the use of social media for producing greater perceptions of social support, when these technologies are combined with formal and traditional methods of public health education. Greene et al. (2011) also show while producing and sharing information is common in social media, there are concerns about the accountability or checks for authenticity of the information shared through these technologies. Further, Cooper and Kar (2014) argue that although their findings show that social media can empower patients by bringing the community of patients and practitioners closer to each other, caution should be taken as some of the content available on social media may not be reliable and could be misleading.

Another major concern is brought out by Li et al. (2013) in their study of the impact of social media in supporting public health education and patients' life style change. Li et al. (2013) conceptualise social media as interactive bidirectional interventions. They argue that although social media has the potential to bring about a desired behaviour change, it is important to harness the content of the relationships to ensure that the use of social media leads to likely sustainable outcomes. They also brought to the fore issues related to privacy protection in social media usage. This concern is also echoed by Von Muhlen and Ohno-Machado (2012) as they contend that although social media is becoming a critical part of healthcare, the issue concerned with breaching patient confidentiality by practitioners is an area of great concern within healthcare.

Grajales et al. (2014) take a critical approach toward the employment of social media in healthcare related activities. They argue that despite the high penetration rate of these technologies in the general population, in healthcare, a large number of stakeholders are unaware of the social implications of these technologies and they generally do not know how to understand and mitigate associated risks. In the light of this argument, they show that the influence of social media in healthcare sector is still in its early stages and many questions in terms of governance, ethics, professionalism, privacy, confidentiality, and information quality need to be answered.

The focus of Thackeray, Neiger, Smith, and Van Wagenen (2012) is on the communicative aspect of social media in healthcare. Despite the growing literature that places emphasis on how social media can enhance communication between individuals and organisations and also has the potential to augment health communication; their study provides an insight into the limitations of these technologies to support health related communication. Thackeray et al. (2012) study suggests that the reach of social media is limited as most healthcare organisations use social media as a channel to distribute information rather than capitalizing on the interactive capabilities of social media to create conversations and engage with the health consumers.

As the presented literature in this section show, social media increasingly play influential roles in supporting healthcare activities. These roles are more evident in the process of chronic care management as patients, carers, and practitioners employ

these technologies to improve the outcome of the management process. However, studies also underline challenges and uncertainties of using social media in healthcare activities and chronic care management, such as reliability of imparted information over these technologies.

2.9.4 Information Systems Studies of Social Media in Healthcare

Despite the growing body of research that focuses on the applications and potential contributions of social media in supporting different healthcare related activities, a closer examination of this literature shows that most of the studies conducted in this area are either too clinically oriented (Evans et al., 2010; Jennings, Powell, Armstrong, Sturt, & Dale, 2009) or the nexus between their approaches and theory seems trivial (Van Uden-Kraan, Drossaert, Taal, Seydel, & van de Laar, 2008).

These points are further accentuated by Chiasson, Reddy, Kaplan, and Davidson (2007). They contend that the current trend of studying information technology in healthcare is mainly influenced by the principles and issues that are at the core of medical informatics field. According to Chaisson et al. (2007), the focus of research in this field is primarily on assisting practitioners in clinical environments (e.g., physicians, nurses, pharmacists) by providing them with more efficient means of delivering healthcare services in clinical settings. They argue that the aim of medical informatics research is to boost the quality of clinical care by improving the application and the design of technological artifacts that are used by the practitioners.

This view takes a narrow approach to healthcare activities and it not only downplays the role of patients as the major consumers of healthcare services, also according to Davis, Schoenbaum, and Audet (2005), it dismisses the value of their perspectives. As such, as Chiasson et al. (2007) point out; there is a need for a clear and new theoretical foundation that could help scholars and practitioners to elevate their understanding of the social and organisational facets of information technology in a broader healthcare context.

Agarwal, Gao, DesRoches, and Jha (2010) contend that the importance of ICT in healthcare is expanding globally as it plays more significant role in making healthcare services more affordable and broadening its reach. They argue that the significant role of IT in modern healthcare calls for more attention from IS researchers, especially in

three areas: health IT design, measurement of health IT, and extending the traditional realm of health IT.

They also argue that the idiosyncratic role of social media is changing the traditional realm of healthcare activities and practice through the emergence of new patterns of technology usage, generation of the sheer volume of new healthcare content by users, and the impact of these new activities on health and well-being.

All of these activities and capabilities, according to Agarwal et al., (2010), calls for closer attention from IS researchers to take advantage of the opportunities that the booming online health communities and social networking can bring to the IS discipline through the development of new methods and theories.

Fichman et al. (2011) explain that the popularity of social media in forming virtual health communities is not an accident as they have been particularly active in the healthcare domain (Kane, Fichman, Gallagher, & Glaser, 2009). What makes these communities more important is the ways they are changing the image and even the structure of the provision of health care services through decentralised pockets of users who autonomously generate health content. They argue that such commons-based peer production is the primary driver of value in these communities and it appears especially to be well suited to healthcare activities.

Fichman, et al. (2011) suggest that the decentralised health content generation and interaction outside medical settings, is challenging the status quo in the medical discipline, which is characterised by rigid hierarchies that harness the flow of medical information and identify who is allowed to generate and provide such information.

As such Fichman, et al. (2011) argue that social media has potential to influence the image of the healthcare domain by supporting different aspects of these emerging health communities; however, it is important for the IS researcher to understand what conditions lead to the formation of health-oriented social-media communities, and how these platforms can support these communities.

In the light of these questions, Fichman, et al. (2011) call for more vigilant attention from the IS community to seek the opportunities that social media can offer IS researchers to understand the challenges and benefits of social media for virtual health communities.

2.10 Chronic Care Management: The Context of Study

Chronic disease are characterised as non-curable health conditions with complex causes, long duration, and generally slow progression that can develop into other health complications (Lindholm et al., 2001). Chronic disease rates are growing globally. By the year 2020, the World Health Organisation has predicted that globally, there will be a 60% growth in chronic disease and its burden on societies (The World Health Organisation, 2011). A deep review of the literature about chronic care management suggests that in general, the activities involved in this process can be subsumed under two major categories: practitioner-led activities and patient-led activities.

In general, medical and clinical practices are inseparable aspects of chronic care management (Epstein et al., 2005). That said, the aim of these types of practices is to improve or maintain the quality of life of those who are diagnosed or those who are at high risks of chronic illness (Norris, Glasgow, Engelgau, O'Connor, & McCulloch, 2003). The practitioner-led (mainly clinical) aspect of chronic care management is mainly guided and informed by a number of practice models that have been widely adopted by general practitioners (GPs), specialists, and other healthcare professionals. Among many different models that have been developed for the clinical dimension of chronic care management, the Wagner's Chronic Care Model, and the Kaiser Permanente Model have gained substantial popularity and attention from practitioners across different healthcare systems around the world (Coleman, Austin, Brach, & Wagner, 2009).

These models recognise that chronic care management is a social phenomenon and a major part of the management process takes place outside clinical environments (Glasgow, Orleans, Wagner, Curry, & Solberg, 2001; Shah & Mountain, 2007). These models also highlight the importance of the social context of chronic care management (Glasgow, Orleans, Wagner, Curry, & Solberg, 2001). The broader aim of these models is to bridge the traditional gap between medical activities and the social aspect of chronic disease, by integrating all the necessary activities into a coherent and multi-faceted management practice (Silvestre, Sue, & Allen, 2009).

Drawing on concepts that stem from the social determinants of health (Marmot, 2005; Noone, 2009), patient empowerment (Bartholomé & Maarse, 2007), and social

learning theories (Bandura, 1978b; Rosenstock, Strecher, & Becker, 1988), the primary focus of these models is to shift the practice of chronic care management from a purely medical oriented practice to a more biopsychosocial approach (Engel, 1980). These models try to bring together the clinical aspects of chronic care management with the psychological needs of individuals and the social aspects of the wider community.

For example, Wagner's Chronic Care Model (Wagner, 1998), as shown in Figure 2.3, is the most widely adopted model of chronic care management within the healthcare industry (Coleman et al., 2009). The aim of this model is to provide an integrative framework for providers to deliver accessible, inclusive, and equitable services and programs to patients and those in need of services.

By identifying six interdependent areas that are necessary for delivering good quality care to patients by providers (Wagner, 1998), this model recognises that meeting the diverse needs of both individuals and the broader community is the essential ingredient of high quality chronic care management. Therefore, the outcomes of the management process can be notably improved through systems and activities that facilitate the formation of communities of patients, practitioners, care givers, and other players involved in chronic care management (Bodenheimer, Wagner, & Grumbach, 2002).

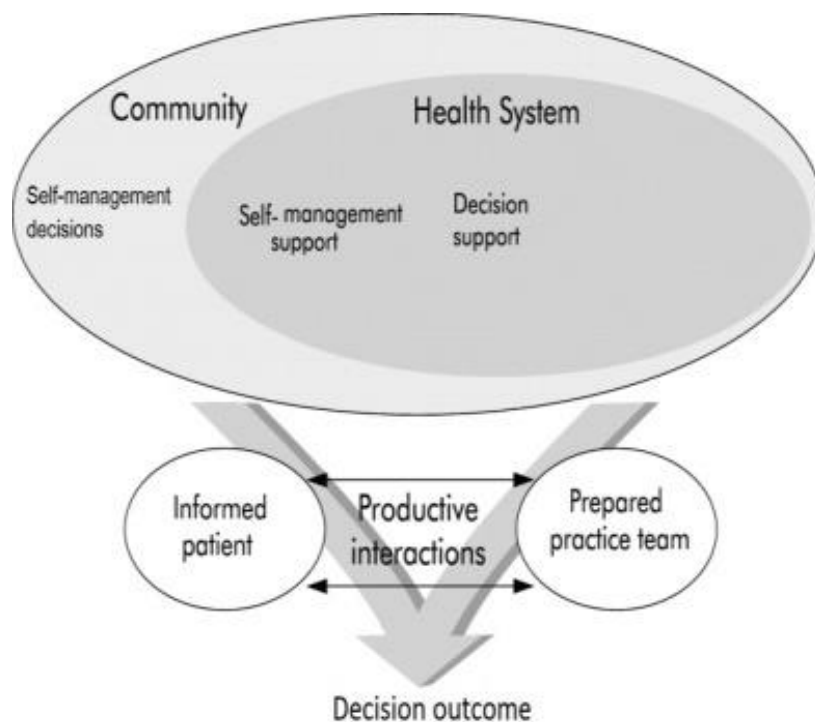


Figure 2.3 Wagner Chronic Care Model (Wagner, 1998)

The Kaiser Permanente Model (Feachem, Sekhri, & White, 2002) also aims to improve the health and quality of life of patients by providing personalised, systematic and ongoing support. The model heavily relies on the capabilities of information and communication technology to support patients to become self-managed, by using existing resources outside clinical settings rather than solely focusing on medical and clinical services (Chen, Garrido, Chock, Okawa, & Liang, 2009).

As shown in Figure 2.4, in this model, patients are divided into three groups: level 1 (community focus), level 2 (community and clinical focus), and level 3 (clinical focus). Each group represents a different level of complexity in health conditions and a different level of medical services and resources that patients in each group may receive to complement their self-management activities.

The aim of this categorisation is to mitigate the impact of the disease through the promotion of self-management activities and the provision of an appropriate level of care to patients in greater needs (Chen et al., 2009).



Figure 2.4 Kaiser Permanente Model of Care (National Health Services, 2007)

The focus of the Kaiser Permanente Model is on methods and activities that support patients and carers education and the means by which quality information can be mobilised to support them (Feachem et al., 2002). By giving more power to patients and their care givers, this model promotes the formation of stronger support networks

that can assist patients to make informed and independent management related decisions (Chen et al., 2009).

An important influence of these models in chronic care manage is shifting the focus of the management process from traditional clinical-based activities to a more patient-centered approach. In this shift, management process takes place mainly by patients and carers, who more autonomously are able to use various medical and non-medical resources to get actively involved in self-management activities (Silvestre et al., 2009).

Chronic diseases are social phenomena and their causes and impacts are intertwined with the social state of patients and the social context within which diseases are diagnosed and managed (Greenhalgh, 2009). In fact, the process of chronic care management inhibits within a complex web of social interaction and patients are the centre of this process (Boxer & Snyder, 2009; Osborne, Jordan, & Rogers, 2008). Medical practices and interventions are inseparable aspects of chronic disease management (Norris et al., 2003); however, many of the management activities take place outside medical settings and through the interaction of patients and carers with people other than medical and health professional such those at schools, workplaces, parties etc. This is because chronic illnesses are not generally curable and in most cases they remain with an individual for a lifetime. Some of the major implications of such lingering impacts for the afflicted person and those close to him/her is that they need to develop skills that help them to learn from their experiences, understand the dynamics of the disease, and become expert in self-management (Lorig et al., 2008; Osborne et al., 2008). As such, a great deal of chronic care management activity is patient-led activity (Wagner, 1998; Wagner et al., 2001).

The literature on chronic care management suggests that along with the medical aspects of chronic care management such as taking medications, the patient-led activities related to this process can be grouped into four major categories: adaptation (Compas, Jaser, Dunn, & Rodriguez, 2012; Weinert, Cudney, Comstock, & Bansal, 2011), learning (Colland, 1993; Hill-Briggs, 2003), communications (Murray et al., 2005; Stevenson, Barry, Britten, Barber, & Bradley, 2000), and support (Doull, O'Connor, Welch, Tugwell, & Wells, 2005; Mo & Coulson, 2010).

A considerable body of literature on chronic care management suggests that patients' adaptation and the ability of those close to them to adapt to new circumstances is a

major aspect of this process (Biesecker & Erby, 2008; Livneh & Antonak, 2005). In this context, adaptation is defined as the degree to which an individual responds both physiologically and psychosocially to the stress of living with a chronic illness (Whittemore, Jaser, Guo, & Grey, 2010). According to Gannoni and Shute (2009) adaptation to a chronic illness is a complex process involving internal and external factors that influence responses and the subsequent level of adaptation to the illness. The nature of such a process, as Sturgeon and Zautra (2010) points out, is a function of multiple factors, some of which are related to the physiological characteristics of the illness, whereas others are related to the psychological, social, and cultural environments of the individual. As such, as Reinhardt, Boerner, and Horowitz (2009) observes, as long as the illness persists, adaptation will be an ongoing process that constitutes a large portion of patients' and carers' psychological and social activities and focuses.

'Learning' has also gained a great deal of attention in the literature. As Luban-Plozza (1995) and Colland (1993) highlight, it is crucial for individual patients and their caregivers to learn about their experiences of chronic illness and also about the systems that work, or fail to work to meet their needs. Such learning is crucial because, as Fox, Ward, and O'Rourke (2005) argue, it gives the patients the ability to make their needs understood, to be treated with respect and compassion, to learn what to expect about their health condition and treatment, and to have caregivers and institutions they can trust.

Lorig et al. (2008) emphasise that it is important to help patients to learn the skill they need to solve problems related to their conditions as opposed to having a clinician do the problem solving for them, so they develop the capacity to address barriers themselves. Detsky (2011) and Griffiths, Foster, Ramsay, Eldridge, and Taylor (2007) look at the importance of learning from the safety perspective. They argue that ensuring patient safety requires patients and their families to be informed and included in the learning process about uncertainties, risks, and treatment options. This ensures that patients and their families who provide them with care are fully informed about the potential implications and impacts of their activities or decisions.

The literature also strongly points to the significance of patients' communication (Boxer & Snyder, 2009; Dowsett et al., 2000; Zolnierek & DiMatteo, 2009) and their

participation in support networks (Barak, Boniel-Nissim, & Suler, 2008; Mo & Coulson, 2010; Nakayama et al., 2009; Thoits, 2011; Vilhauer, 2009), in improving the outcome of chronic care management as well as the role of policies (Dennis et al., 2008) and culture (Kleinman, 1981) in this process.

The reviewed literature in this section strongly suggests that the emphasis of practitioner-led approach to chronic care management is on promoting the process of self-management in a way this process takes place within a wider community. The review also shows that many aspects of the modern patient-led approach also resonate with the notion of community as its emphasis is on protecting and sharing management resources within communities. In the context of this study, it means that conceptualising the process of chronic care management as a community of actors, makes it possible for me to look carefully into this process and investigate some of its core attributes such as 'resilience'. As such, I can see community resilience as a construct that retains its importance throughout the life span of patients with chronic disease, as well as other people (e.g. patients' family members, colleagues, or local community) who might get affected by the implications of this type of disease.

The reviewed literature suggest that the concept of community resilience provides a distinctive means to capture the factors that may push patients and other people around them, to negative psychological or social states. As such, I should be mindful of the fact that the process of chronic care management is not limited to the activities and goals discussed above. Rather, the above discussion shows that core attributes of the process of chronic care management strongly resonates with the notion of community resilience.

2.10.1 Understanding Chronic Care Management through the Lens of Community Resilience

Greenhalgh (2009) suggests that taking a socio-ecological perspective toward the management of chronic diseases can provide a holistic understanding of this process. She argues that the social-ecological perspective provides a framework to understand the environmental, social, cultural, and medical dimensions of the management process as complex system of interrelated activities.

From this point of view, chronic illness is the result of the interplay between influences of biological, social, and environmental systems that acting dynamically through time. As such, the process of chronic care management is intelligible if seen as a community of actors where responsibility for managing diseases lies at many levels including individual patients, care givers, and health professionals, and with community (Harrington, 2009).

Greenhalgh (2009) takes this view to characterise the management of chronic illness as a process that is adaptive and diverse, and entails proactive roles to be played by patients and community throughout the process. Greenhalgh (2009, p4) points out:

“Social ecology approaches generally reject standard protocols in favour of diversity of provision and adaptation of local programmes to meet the individual and cultural needs of different audiences. The patient is a vital member of the team, since the process of planning and implementing care for anyone is essentially one of negotiating personalised goals in the family, social, and cultural context.”

So, one way of understanding the management of chronic diseases is to look at the process through the lens of community resilience. From the resilience perspective, the process of chronic care management is a dynamic and complex web of relationships where actors’ decisions, choices, behaviours, and actions are influenced by each other on an ongoing basis. (Bronfenbrenner, 1977; Bronfenbrenner & Evans, 2000).

Therefore, the purpose of this community is to use the available resources to support individuals and the whole community to become resilient against the issues and adversities of chronic illness and maintain their health and wellbeing as much as possible (Kralik, Van Loon, & Visentin, 2006; Schetter & Dolbier, 2011).

2.10.2 Social Media and Chronic Care Management

Studies of the role of technology in chronic care management suggest that information and communication technology can alleviate the adverse impact of chronic disease by supporting many aspects of the management process and potentially improving its outcomes (Greene et al., 2011; Jennings et al., 2009). There has been a tremendous rise of interest in understanding how new and emerging Internet-based technologies

can play a role in supporting patient self-management activities (e.g. Hill-Briggs, 2003; Li, Townsend, & Badley, 2012; Lorig et al., 2013). Witness to this interests are the invention of new terms such as 'Medicine 2.0' (Eysenbach, 2008) and 'apomediation' (O'Connor, 2009) that foreground the ways that new Internet-based technologies are shifting the means by which chronic disease can be managed by changing the roles of the actors involved in the process (Eysenbach, 2008; Goldberg, Ralston, Hirsch, Hoath, & Ahmed, 2003; Stinson, Wilson, Gill, Yamada, & Holt, 2009).

In particular, increasing attention is given to the growing trend of using social media in chronic care management (e.g. Li, 2013a), to the extent that some researchers believe this trend is transforming the process from a clinical-based activity to a more self-managed and community dependent process (Eysenbach, 2008; Ressler et al., 2012). This is because social media afford new types of behaviours that were difficult or even impossible to achieve before these new technologies were adopted by patients and carers (Majchrzak et al., 2013; Merolli et al., 2013). Most of the studies in this area show that social media platforms have created opportunities for interactions and conversations between people who have similar health conditions or among those who are involved in the management process in different ways. The following presented review of literature aims to underline some of the major ways that social media is affecting the process of chronic care management, potentially through the emergence of online and offline communities that form around chronic disease.

Chretien and Kind (2013) discuss the role of social media in the emergence of peer-to-peer healthcare as a source for patient information and support. According to Chretien and Kind (2013), for patients with chronic conditions, particularly those with rare diseases, peer-to-peer healthcare can result in positive outcomes. They argue that social media provide unique and new opportunities for patients and carers to establish supportive and meaningful online relationships with their peers and expand their online support network in ways that were not possible before the advent of the Internet.

Bender et al. (2011) show the ways in which social media can assist patients with chronic disease to address some of the financial aspects of the management process by

attracting resources from the community and raising money for their illness or for their personal healthcare costs.

Studies also show that social media can support patients with chronic conditions and their caregivers to make informed decisions regarding possible treatment options. For example studies by Wicks et al. (2010) and Christodoulou (2011) show social networking online communities can be used as data-sharing platforms, providing opportunities for patients to share different types of information and learn from other patients' experiences.

Jent et al. (2011) shift the focus from patients to practitioners and as their study of social media shows that physicians can also use social networking to share information and crowd-source answers to clinical questions. They studied physician-only online communities that formed through a social networking platform and highlighted the mechanisms (e.g. restricting participations to qualified physicians) used by practitioners to maintain the quality of information within those communities.

In the study of social media, Ben- Yakov and Snider (2011) and Otto (2011) underscore the role of the public in the management of chronic disease, and how social media can be used for practitioners to draw on the public as a reservoir of information that may serve as a source of patient information to aid clinical care. In their study Ben- Yakov, & Snider (2011) show that social media are used by both patients and, especially, by practitioners to search for information about diseases or additional patient information if necessary.

The role of social media in facilitating the interaction between practitioners and patients are also spotlighted in some of the studies that are concerned with chronic care management. For example, a study by Jain (2009) brings out how social networking sites are used by practitioners who deliberately decide to become friends or connect with their patients to engage patients and also become more approachable. However, this issue has also been tackled by other researchers, whose findings reflect more of the complexity of this type of interaction and cast doubt on the effectiveness of such approaches.

The use of social media as tools for supporting telemedicine and creating virtual clinics is underlined by Lancet (2012) and Garcia-Romero, Prado, Dominguez-Cherit, Hojyo-Tomomka, and Arenas (2011). Also, Currell, Urquhart, Wainwright, and Lewis (2000)

argues that social media is transcending geographical boundaries and by facilitating the extension of clinical care to distant patients where traditional telecommunication services fails to be feasible and reliable.

The use of social media as tools for marketing and community engagement is also studied by a number of researchers. For example a study by Keckley and Hoffmann (2010) shows how the use of social media can shift the balance of power to the community. They argue social media platforms such as microblogging and social-tagging are power tools for reviewing and rating health service providers and make them freely available for anyone to see.

Merolli et al. (2013) conduct a thorough review of the literature to identify the affordances of social media in chronic care management. Their initial findings showed that social media can affect the health outcomes of the management process by improving engagement/participation, social interactions, disease-specific knowledge, psychosocial states, and perception about physical conditions. They then followed Treem & Leonardi's (2012) footprints and identified identity, flexibility, structure, narration and adaptation as new affordances of social media that are specific to the management of chronic disease.

Stellefson et al. (2013) present an analytical comparison between the traditional methods of providing health related information to patients with chronic disease and the new trend of using social media. They argue that with traditional methods, public health experts have provided chronic disease information in a static form through Web 1.0, which primarily makes written and audio materials available to patients. However, the rapid growth in adoption of social media have provided opportunities for participatory Internet interventions, helping individuals with chronic diseases to become actively engaged in their own health care activities. Studies shows that such participatory intervention can take advantage of capabilities of social media in providing more effective information sharing, education and training, as well as extending the reach of resources necessary for self-management activities (Murray et al., 2005; Samoocha, Bruinvels, Elbers, Anema, & van der Beek, 2010).

A study by Chou et al. (2009) focuses on the communicative aspect of social media and investigates this aspect of social media on different age groups with chronic disease. They argue that the recent growth of social media has not been uniformly distributed

across different age groups and therefore, it is important to investigate how social media can influence different age groups when it comes to health communication. Their findings suggest that social media can change the pattern of communication between health providers and consumers as more people move toward adopting these new technologies. They argue that social media as communication and health promotion platforms have the potential to narrow the health disparities gap, as these media have the capacity to reach a wider audience than traditional media have been able to reach. However, their findings also draw special attention to some inconsistencies within different age groups, as some younger generation patients and practitioners may benefit from these changes of communication pattern while older patients, who constitute a major portion of patients with chronic disease, may find it challenging.

In their paper Lau, Gabarron, Fernandez-Luque, and Armayones (2012) investigate the potential harms of using social media in chronic care management. Their study focused on community content generation and their findings identified five major areas of concerns including: harmful health material targeted at consumers; public displays of unhealthy behaviour; tainted public health messages; psychological impact from accessing inappropriate, offensive or biased social media content; and using social media to distort policy and research funding agendas. They argue that these potential harms and risks are not specific to social media but the prevalence and easy access to social media makes their risks more significant. They suggest that this does not mean that patients and practitioners should not engage in the use of new technologies but what is needed is a better understanding of how, consumers digest online content, and how in the social media world, potential harm can be mitigated.

The psychosocial effects and motivating factors for using and maintaining social media by patients with chronic pain or illness are discussed by Ressler et al. (2012). They use the theory of Health as Expanding Consciousness to frame their theoretical position as the creation of online health communities, where patients can comment on and read others' illness stories to support the concepts framed by this theory. This theory posits that individuals strive to regain a sense of health by connecting with self and others, and finding growth, meaning, and purpose in life experiences (Newman, 1990).

Ressler et al., (2012) argue that the use of social media patients with chronic illness or their carers allows for the creation of real-time sharing of experience with family and a community of others in similar situations; in contrast, traditional journal writing does not permit this same process. The key findings of their study show that patients felt that the use of social media can help them create a sense of being less alone and less isolated by their illness, when engaging in the process of sharing their stories within their community.

Li (2013a) takes a collective wisdom approach to the application of social media in the management of chronic disease. Li (2013a) argues that the wisdom of crowds is smarter than any individual no matter how expert that person is. As such, when patients with the same chronic disease share matters related to their disease, their collective wisdom can support clinical insights beyond the understanding of any single patient. Li (2013a) calls attention to the significant role of the community that can form via social media around chronic disease management and argues that these technologies can enable patients to harness the power of community to change unhealthy behaviours, promote health, and gain the knowledge and wisdom that other resources such as doctors may overlook.

Eysenbach (2008) focuses on the social aspect of chronic diseases by highlighting that diseases such as diabetes and obesity are more often social and behavioural diseases. They argue that the traditional medicine works well for acute conditions, such as an infection, but it is not effective for complex chronic disease, which heavily relies on patients' knowledge about their social life style and methods of adaptation. The findings of Eysenbach (2008) strongly suggests that social media can be used as environments for delivering information and tools needed for a healthy lifestyle, since unlike face-to-face interventions, online health communities have the potential to provide access to a broader population and to high risk groups.

Moorhead et al. (2013) present a useful classification of the potential benefits and limitations of social media in the management of chronic diseases. In terms of benefits, they identify six major ways that the general public, patients, and health professionals may benefit from using social media for chronic care management. Accessing a wide range of information, accessing more tailored and customised information, removing traditional barriers of accessing information, equity in accessing information, peer-to-

peer social and emotional support, and increasing public awareness and education were the main potential benefits as identified by Moorhead et al. (2013). They also identified twelve limitations of social media for the management of chronic disease including: information quality concerns; the lack of reliability of the health information; and concerns about privacy, confidentiality, data security, and the potential harms of using social media, as the most central limitations.

2.11 Chapter Summary

The purpose of this chapter was to provide a detailed account of the current state of research in three major areas of ‘community resilience’, ‘chronic care management’, and ‘social media’. In the outset, the presented materials in this chapter explored in an exhaustive way, highlighting how these three areas could come together to inform the conceptual foundation of this study.

In addition, a review of the principal concepts pertaining to the nominated theoretical lens i.e. sociomateriality was presented in this chapter. As the result, a preliminary conceptual model (Figure 2.2) was developed in order to be used as a guide, even provisionally and partial, for both data collection and interpretation of the data during the analysis stage.

Further, this chapter presents an extensive review of the literature that underline the characteristics of the technological focus of the study i.e. social media, and the context on which the study has focused on i.e. the process of chronic care management. Together, these materials provide the conceptual foundation and the boundaries that frame the scope of this research. Such a scope provides a direction and focus for the conduct of the practical aspects of this study as they are presented and discussed in the following chapters.

The review of literature in this chapter showed that although ‘social media’ and ‘community resilience’ are becoming increasingly important concepts within different disciplines, there is little known about their potential relationships. This chapter showed that these two concepts have been attracting interest from many disciplines; however, no detailed and deep studies have been done to investigate how they might influence one another, and how communities might benefit from these multi-faceted technologies. In particular, this chapter brought to the fore the promising role that

social media technology can play in healthcare communities; however, it is not yet empirically and theoretically understood how these two concepts may interrelate. As such this chapter highlights some of the major ambiguities around these significance concepts and brings to our attention the significance of this study and its objectives.

3 RESEARCH METHODOLOGY

3.1 Introduction

In this chapter, I present and discuss the major methodological decisions I have made to conduct this study and by grounding my decisions in the relevant literature, I aim to provide an insight into the rationales behind them. Further, I will discuss how, in relation the characteristics of my research settings, those methodological decisions were implemented.

In its broader sense, the purpose of this chapter is to provide a framework that portrays the underlying assumptions, appropriateness, and the boundaries of the methodological approaches adopted in this study. Such a framework makes it possible to outline how the viability and rigour of the practical aspects of this study support the integrity of its findings. In particular, the purpose is to discuss how the adopted approaches to data gathering and data analysis assisted this study to find novel and meaningful answers to its research questions.

As a result, this chapter provides clear answers to two important questions: ‘how the study was conducted?’ and ‘how the evidence was obtained?’. Further, by offering a detailed account of the methodological decisions, this chapter aims at providing more confidence in the conclusions drawn from the findings.

3.2 The Methodological Position of This Study

This study is a qualitative research study. Denzin and Lincoln (2011, p3) elucidate the characteristics of qualitative research as:

“Qualitative research is a situated activity that locates the observer in the world. Qualitative research consists of a set of interpretive material practices that make the world visible. These practices transform the world. They turn the world into a series of representations, including field notes,

interviews, conversations, photographs, recording, and memos to the self.”

Denzin and Lincoln (2011) frame the underlying basis of qualitative research as three interconnected areas of ontology (i.e. what reality is out there?), epistemology (i.e. what is the valid knowledge?), and methodology (i.e. how knowledge can be obtained?). They assert that positioning a study within the landscape of qualitative research entails a clear elaboration on how its underlying assumptions relate to each of these three primary dimensions of qualitative research.

In most qualitative approaches, however, the boundaries between these three principal areas are not easily discernible as they are usually enmeshed across all aspects of a study (Myers, 2013). Nevertheless, as Miles and Huberman (1994) point out, their impacts are normally evident in the conceptual or theoretical development of a qualitative study, in the methods and techniques employed for collecting data, and also in the adopted theoretical lens for producing evidence. As such, to position this study within the domain of qualitative research, this chapter sheds light on its underlying ontological, epistemological, and methodological assumptions and principles.

Starting from the conceptual development, a thorough review of the literature in Chapter 2 gave rise to a preliminary conceptual framework as a ‘sensitising device’ (Klein & Myers, 1999) that guided this study. This sensitising device does not present a set of fixed variables or constructs, rather it provides a framework for conceptions and thinking. At its core, this sensitizing device represents an intertwined relation between me, as a qualitative researcher, and a means I adopt to approach the social world to understand it. This is consistent with Denzin and Lincoln (2005) as they believe that inevitably behind any qualitative research is a gendered multicultural researcher who is situated within a distinct research community. They argue that any interpretation of reality by this researcher entails an abstraction of the social world in that the researcher frames his or her views within a set of ideas and questions. As such, the process of developing a conceptual framework - as was discussed in Chapter 2 - is a proper representation of an ontological view of this study, that is consistent with the principles of qualitative research.

The focus of the rest of this chapter will be on the position of this study with regard to the other major dimensions of qualitative research including: approaches to epistemology, methods of study, and data analysis.

Hence, I will start to discuss the methodological framework used for this study by outlining my philosophical position. Then I will shed light on how the use of ‘case study’ as the overarching research methodology assisted in forming the research activities. Also, the reasons for selecting each of these elements will be explained. It is important to note that I am not clinically trained and my approach to the topic of this study is not from a clinical point of view, rather my approach is mainly from an information systems perspective.

This chapter will also turn its focus to how the use of Grounded Theory (GT) has informed the strategies for collecting and analysing data within a case study framework. The ultimate goal of the rest of this chapter is to paint a clearer image of how the methodological framework that was used in this study. This framework has assisted this research to explore and understand the role of social media in supporting resilience within the context of chronic care management.

Klein and Myers’ (1999) principles of ‘dialogue reasoning’ and ‘suspicion’ put emphasise on the importance of self-reflection as an intrinsic aspect of qualitative research. As Marshall and Rossman (2011) explain, qualitative researchers influence every step of their research process and therefore, it is their responsibility to carefully reflect on every aspect of their studies to avoid being blinded or misdirected by what they bring to the study. It is specifically important for those who study technological artifacts. This point is also highlighted by Barley (1998, p238) as he argues:

“Being at the forefront of technology carries potential dangers, however. Perhaps because technological changes are more obvious, if not more rapid, than changes in other areas of social life, researchers in our field [IS] run the risk of being too easily enamoured by the novel. Even when one is but an observer at the leading edge, wonder can sometimes overpower scepticism.”

Therefore, a reflection on the methodological approach employed in this research will be presented later in the final chapter.

3.3 Research Philosophy

As the research question suggests, the broader purpose of this study is to expand our understanding of the role of social media in community resilience. This is an area within the information systems discipline for which our knowledge is very limited.

In general, one fruitful way of expanding our knowledge in this area is by investigating how the interaction between the actors of a community and social media can help unravel and categorise the complexity of their interplay (Maxwell, 2005). This view implies that this study is an exploratory one, taking a qualitative, contextual, and detailed approach to the investigation of its main research question.

Based on a researcher's epistemological perspective, qualitative research can be interpretative, positivist, or critical (Myers, 1997). However, adopting an epistemological perspective is not necessarily always a free choice that is independent of the purpose of a study; rather it can be profoundly informed or even dictated by the goals of the study and by what the researcher wants to achieve (Dey, 1993 , Chapter 16). This is what is recognised by Miles and Huberman (1994) as wrestling with the issue of meta-theory before engaging in the practical aspects of a qualitative study. Once a researcher is settled on an overarching set of beliefs, principles, and a system of thinking, he or she can employ them as a guiding framework to conduct a specific study (Denzin & Lincoln, 2011).

In the context of this study, adopting an epistemological perspective was not purely based on a personal choice. It was significantly influenced by the researcher's position toward the nature of technology. This is because according to Zammuto et al. (2007), those who study technology often toil at the boundary between physical and social phenomena and therefore, they must first and foremost take a clear stand in their approaches to the nature of technology in social phenomena. This is specifically important to study as technology is at the core of IS studies and investigation of the role of technology in social phenomena is of significant interest to the IS discipline (Vaast & Walsham, 2013).

Barely (1998) argues that any approach to the nature and agency of technology and its relation to social behaviour depends on a researcher's perspective about two major issues. The first issue is the 'causes of human behaviour'. This issue is mainly

concerned with a researcher’s position toward the problem of determinism vs. voluntarism that is also known as the problem of ‘free will’ (Caruso, 2012). According to Barely (1998) the second issue that an IS researcher has to pay attention to is the dilemma of materialism vs. idealism. This second issue is mainly concerned with a researcher’s position toward the ‘types of causes’ that influence human action. The differences between these issues and concepts are summarised in Table 3.1.

Table 3.1 Major perspectives about the relations between technology and a social phenomenon

<i>Perspective</i>	<i>Approach to human behaviour and human action</i>	<i>Reference</i>
Determinism	Human behaviour is caused by forces and conditions that exist independently and often external to the actors themselves	Bandura (1978a)
Voluntarism	Human behaviour is predicated on the choices that actors make and humans are authors of their existence	Janoski and Wilson (1995)
Materialism	Human action is the result of material properties and interactions and stems from physical contexts and causes such as technology	Churchland (1981)
Idealism	Human action is driven from the human’s subjective ideas, norms, values, ideologies and beliefs.	Forsyth, Nye, and Kelley (1988)

According to Barley (1998), the antinomy of these perspectives (i.e. determinism vs. voluntarism and materialism vs. idealism) can be cross-classified. This classification, at its heart, presents the different possible epistemological assumptions that a researcher can adopt to study a piece of technology within the context of a social phenomenon. One of the major implications of this way of classification for a study is that it denotes four major epistemological perspectives of materialistic-determinism, idealistic-determinism, materialistic-voluntarism, and idealistic-voluntarism. A summary of these four perspectives and their implications for studying technology and social phenomenon in IS research are illustrated in Table 3.2. Among these different types of possible assumptions that a researcher might adopt, I have found the materialistic-voluntarism approach an especially rich vein to draw on. This perspective helped me to create an adequate account of the relation between technology and human behaviour by weaving together human action and choice, the functions and features of specific technologies, and the contexts of a technology's use.

Table 3.2 Epistemological perspectives about the relations between technology and social agencies (adopted from Barely, 1998)

<i>Relations between technology and social</i>	<i>Assumptions about technology</i>	<i>Epistemological implications</i>	<i>General research objectives</i>	<i>Example</i>
Materialistic-determinism	Technologies and other physical artifacts directly cause social phenomena	Positivist approach	Seeking theories that explain the relationship between technology and social behaviour that is sufficiently general to make prediction about the effects of technology across different types of social contexts	Huber (1990)
Idealistic-determinism	Socio-technical trajectories are driven by cultural ideologies since technologies are manifestations of ideology. Human action is intentional and rational	Positivist approach	Understanding how the rational design and the use of technology can improve efficiency and help to overcome discrepancies in the system	Brown and Duguid (1991)
Materialistic-voluntarism	The choices that shape human behaviour and action are influenced by the materiality of technology	Weak constructivist approach	Understanding how the material properties of technology can influence users' perception about the constraints and affordances of technology in a specific context	Treem and Leonardi (2012)
Idealistic-voluntarism	Technology is a socially constructed phenomenon and its effects are rooted in the beliefs and values of designers and users	Strong constructivist approach	Understanding how users shape a technology's meaning and its constraints and affordances	Orlikowski (1992)

However, as Orlikowski and Barley (2001, p149) argue:

“Technologies are simultaneously social and physical artifacts. Consequently, neither a strictly constructionist nor a strictly materialist stance are adequate for studying technologies. Elements of both perspectives are required”.

Bringing all these perspectives together, their implications for adopting an epistemological view in this study are three fold. First, epistemologically it positions this study in the domain of ‘weak’ constructivist, in that the choice between the positivist and interpretative approach is strongly based on the research question and the objectives of the study, and is informed by the nature of the phenomenon of interest (Orlikowski & Baroudi, 1991).

This means that in the context of this study, adopting the interpretative perspective was a promising approach since it would not conceive the world as a fixed constitution of objects. Rather it sees the world as emergent social processes that are extensions of people’s consciousness and their subjective experiences (Orlikowski & Baroudi, 1991). This notion would allow me to investigate and understand the emerging concepts and their attributes as they are deeply embedded in the actors’ situated and subjective understandings of reality.

Second, this perspective has ontological implications too. Ontologically the emphasis of this study is on the importance of subjective meanings and social and historical processes through which humans construct and reconstruct their reality. However, it also acknowledges and recognises the objective reality of material aspects of technology and their influence on the construction of subjective meanings by humans (Hutchby, 2001).

By the material aspects of technology, I mean those properties of technological artifacts that do not change over time and remain the same in different locations (Leonardi, 2012). This is unlike the premises of the positivist perspective in that the principal assumption is that social phenomena are objective realities and the role of the researcher is to discover and explain their causal relationships (Hirschheim, 1992). As such, I adopt materialistic-voluntarism for the interpretation and analysis of the empirical findings of this study.

The third implication of adopting the materialistic-voluntarism approach is to adopt methods to conduct this study. In general, as per the interpretivist perspective, the appropriate research methods to generate valid knowledge are those that examine humans' perspectives within their social settings. As Denzin and Lincoln (2011, p3) put:

“Qualitative research involves an interpretive, naturalistic approach to the world. This means that qualitative researchers study things in their natural settings, attempting to make sense of or interpret phenomena in terms of the meanings people bring to them”.

These methods are normally based on field studies. The approach is to do in-depth examinations of a phenomenon without imposing any pre-defined view (Kaplan & Maxwell, 1994). In the light of this approach, this study follows Orlikowski and Baroudi (1991, p5) description of interpretative research as:

“Interpretative studies assume that people create and associate their own subjective and intersubjective meanings as they interact with the world around them. Interpretive researchers thus attempt to understand phenomena through accessing the meanings that participants assign to them.”

However, the materialistic-voluntarism approach also indicates that along with the interpretative perspective, there is also an objective reality out there that mainly relates to the materiality of technology. Therefore, not all the concepts for explaining the subject matter emerge out of people's perspectives within their social settings. Rather, they may come as well-defined sets of constructs from existing theories that altogether allow this study to paint a clearer image of the phenomena under study, and provide a more accurate answer to its research problem. This approach is consistent with the 'weak constructivist' epistemological view of this study.

As such, the inductive, contextual, and process-oriented approach I take in this study, lends itself to an interpretative research perspective. Given the purpose of this study, adopting this research perspective is not only appropriate, it is also essential. This is

because in the process of chronic care management, the affordances of technology and the concept of community and its attributes are all deeply embedded in the actors' subjective understanding of the processes of chronic care management and their impacts.

3.3.1 Approach to Data Analysis: Hermeneutics Interpretative

Interpretive researchers posit circular and reciprocally interacting models for understanding humans' views of their social world (Orlikowski & Baroudi, 1991). According to Walsham (1995) there are four major philosophical bases for different types of interpretive approaches that represent substantively different strands of thoughts: phenomenology, ethnomethodology, the philosophy of language, and hermeneutics.

Among these approaches, according to Klein and Myers (1999), hermeneutics is a major branch of interpretive philosophy. It focuses on human understandings of a phenomenon through iterations between the constructions of meanings of parts of a whole, as they emerge.

Hermeneutics is primarily concerned with the meaning of a text or text-analogue, such as virtual environments (Lavery, 2003). As Deetz (1973) puts, the basic question in the hermeneutics approach is what the meaning of the text is. Gadamer (2008) suggests that through the hermeneutics circle we come to understand a complex whole from preconceptions about the meanings of its parts and their interrelationships.

In the context of this study, there are four major reasons for choosing hermeneutics as the philosophical basis of the interpretative approach. First, according to Klein and Myers (1999) hermeneutics has a settled philosophical base and therefore lends itself to be adopted as a "bridgehead" for contributing to knowledge.

Second, the previous studies that focused on digital text (e.g. Lee, 1994) have used the hermeneutics approach as an overarching method of study. Despite their differences in methodological approach, the findings of these studies have intriguing ramifications for the adoption of hermeneutic cycles in social media studies.

The third reason for adopting hermeneutics is related to the nature of social media as the technological focus of this study. Social media poses text as its very subject matter and

hermeneutics is well suited to draw subjective meanings by studying texts (Klein & Myers, 1999), even if they are presented in digital formats.

The fourth reason is that the domain of hermeneutics study is not limited to text-based artifacts that human subjects can create. As Lee (1994) shows, the hermeneutics approach lends itself to other forms of artifacts (i.e. digital artifacts) such as images and videos, as well as human behaviour and action. All of these formats have meanings and can be read and interpreted through the cycles of the hermeneutics approach.

Therefore, the hermeneutics perspective provides a suitable and fruitful approach for investigating the content of social media (i.e. digital text and image). It also provides a valuable framework for studying the users of social media, their actions, their behaviours, and the ways they get organised.

Overall, this study as Mayer (1997) puts is qualitative interpretative research. Most of the knowledge is constructed, gained, or at least filtered, through social tools and media such as language, consciousness, shared meanings, documents, , and other social artifacts.

The ultimate goal is to use empirical findings to construct an understanding of reality that clearly explains the role of social media in the resilience of communities. Also the goal is to build a taxonomy that organises and explains the findings by linking them to a wider landscape of empirical and theoretical studies (Klein & Myers, 2001). The following table (Table 3.3) summarises the philosophical position taken in this study.

Table 3.3 Summary of the philosophical approach adopted in this study

<i>Belief About</i>	<i>Explanation</i>	<i>Position of this Study</i>	<i>Reference</i>
Social reality (ontology)	Perspective about the social and physical worlds and whether they are objective and exist independently of humans, or subjective and exist only through human social interaction.	Weak constructivist	Orlikowski and Baroudi, (1991)
Relation between technology and social	Whether human behaviour is caused by forces and conditions that exist independently to the actors themselves or is predicated on the choices that actors make. Whether human action is the result of material properties and stems from physical contexts and causes such as technology or is driven from human subjective ideas.	Materialistic-voluntarism	Barely (1998)
Valid knowledge (epistemology)	What is the valid knowledge and which research methods are appropriate for generating valid evidence?	Interpretative approach – mainly field studies to explore the emerging constructs but also incorporate some pre-defined constructs	Denzin and Lincoln (2011)
Analysis approach	The underlying assumption of how data should be interpreted and meanings are constructed.	Hermeneutics circle	Klein and Myers (1999)

3.4 Research Approach: Case Study

The purpose of this section is twofold. First, it aims at justifying why a case study is used as the overarching research strategy in this study. Second, it tries to provide a clear discussion of how the design of this study is informed by this choice.

3.4.1 Important Characteristics and Significance of the Case Study

One of the major objectives of this study is to construct a new understanding of social media by exploring and theorising its role in an unexplored domain of community resilience. Based on this notion, as Eisenhardt (1989) explains, the case study approach provides an appropriate strategy for research activities as well as a flexible framework to put boundaries around them.

In emphasising on the importance of the case study, Flyvbjerg (2011) argues that much of what we know about the empirical world has been produced by case study research, and many of the most treasured classics in each discipline are case studies. In the field of IS, Klein and Myers (1999) explain how case study research has become accepted as a valid research strategy within the IS research community and has been widely used by the researchers to investigate different aspects of information systems in organisations and communities.

Both positivist IS researchers (e.g. Lee, 1994) and interpretative IS scholars (e.g. Levina & Vaast, 2008) have used the case study as a powerful and flexible research strategy to produce either qualitative or quantitative empirical evidence. This evidence may come from fieldwork, archival records, verbal reports, observations, or any combination of these (Yin, 1981). However, a case study is not always appropriate or relevant as a research strategy, but as Flyvbjerg (2011) points out, the choice of a case study should clearly depend on the problem under study and its circumstances.

As Yin (2003) explicates, the case study as a research strategy has two major distinguishing characteristics from other alternative approaches, such as ethnography. First, it allows the researcher to examine a contemporary phenomenon in real-life and in a natural setting. Second, it helps to investigate a phenomenon when the boundaries between the phenomenon and context are not evident. This is what Cavaye (1996) recognises as the strengths of the case study strategy in capturing the 'reality' of a phenomenon in its natural setting.

According to Cavaye (1996), one of the major strengths of the case study strategy is helping researchers to explore unknown territories. He argues that the case study enables

researchers to explore the different aspects of a phenomenon, and develop new concepts without a need of *a priori* determination of them. Flyvbjerg (2011) expands this notion by identifying ‘depth’, ‘high conceptual validity’, ‘understanding of context and process’, ‘understanding of what causes a phenomenon’, ‘linking causes and outcomes’, and ‘fostering new hypotheses and new research questions’ as other major strengths of the case study, as a research strategy.

3.4.2 The Relevance of Case Study Strategy to This Study

Literature shows that building theory from cases is becoming increasingly popular (e.g. Barrett, Oborn, Orlikowski, & Yates, 2012; Creed, DeJordy, & Lok, 2010; Tracey, Phillips, & Jarvis, 2011; Urquhart & Vaast, 2012). Eisenhardt (1989) explains that building theory from case studies is a research strategy that involves using one or more cases to create theoretical constructs, propositions and/or midrange theory from case-based, empirical evidence. A more recent study by Urquhart and Vaast (2012) also shows that case study in conjunction with social media has considerable potential for building substantive theories in information systems. Vaast and Walsham (2013) also highlight the value of the case study strategy in building theory from electronically mediated social contexts.

Given the objectives and nature of this study, I argue that a case study as the research strategy gives this study more methodological strength and provides it with significant opportunities and benefits. Some of these strengths and benefits are discussed as follows.

First, the ultimate purpose of this study is oriented towards theory development and building a theory that explains the role of social media in supporting community resilience. The case study provides means, methods, and guidelines to build theories through either single or multiple case investigations (Eisenhardt, 1989; Urquhart & Vaast, 2012).

Second, this study aims to explore how technology can influence the dynamics of a community through supporting its resilience. This implies that this study is strongly an exploratory study, relying on a research strategy and methods that enables the research to unravel the complexity of a phenomenon. Case study as a research strategy is a well-suited strategy for exploratory studies (Cavaye, 1998; Flyvbjerg, 2011).

Third, the concept of 'case' is a vital concept in this study. A 'case' or a 'bounded system' of interest (Stake, 1978), helps identify the boundaries that provide a focus for the empirical investigation. Stake (1978) believes that boundaries usually determine what the study is about and enables the researcher to make a distinction between vital events and less important ones. Flyvbjerg (2011) also points out that by drawing boundaries around a case, the researcher decides what gets to count as the case and what becomes context to the case.

Fourth, the case study strategy enables this study to capture the 'reality' of a phenomenon in its natural context (Cavaye, 1996), and setting up boundaries which give focus for empirical investigation (Flyvbjerg, 2011). Treating cases as 'bounded systems' (Stake, 1978) is significant to this study, as the study takes a qualitative-interpretative approach and 'reality' understood as socially constructed phenomenon that is subjective and bounded to a context.

Fifth, in the study of social media, one of the characteristics of social media is its virtual nature (Kaplan & Haenlein, 2010). The implication of this characteristic for qualitative studies is that the boundaries between the phenomenon and context are blurred (Pousti et al., 2013). As Yin (1981) explains, a case study is an appropriate research strategy when researchers have difficulties in distinguishing the boundaries between their subject of the study and its context.

Also, from the practice point of view, the case study strategy offers a flexible approach to data collection (Yin, 2003). Time-wise, it is quicker than other alternative strategies, such as ethnography (Cavaye, 1996). Also, it is a well-documented and accepted strategy in the field of information systems (Klein & Myers, 1999). Overall, the points discussed above strongly support the choice of case study as an appropriate research strategy for this study.

3.4.3 Unit of Analysis

A unit of analysis represents the boundaries around a case and separates the case from its context (Yin, 2003). For each chronic disease type (e.g. arthritis, diabetes), the process of chronic care management represents a community of actors. Informed by the primary

research question (presented in Chapter 1), as well as the preliminary conceptual model (Figure 2.1), the unit of analysis for this study is a community that forms around the process of chronic care management for a specific chronic disease type. An overview of this unit of analysis is shown in Figure 3.1.

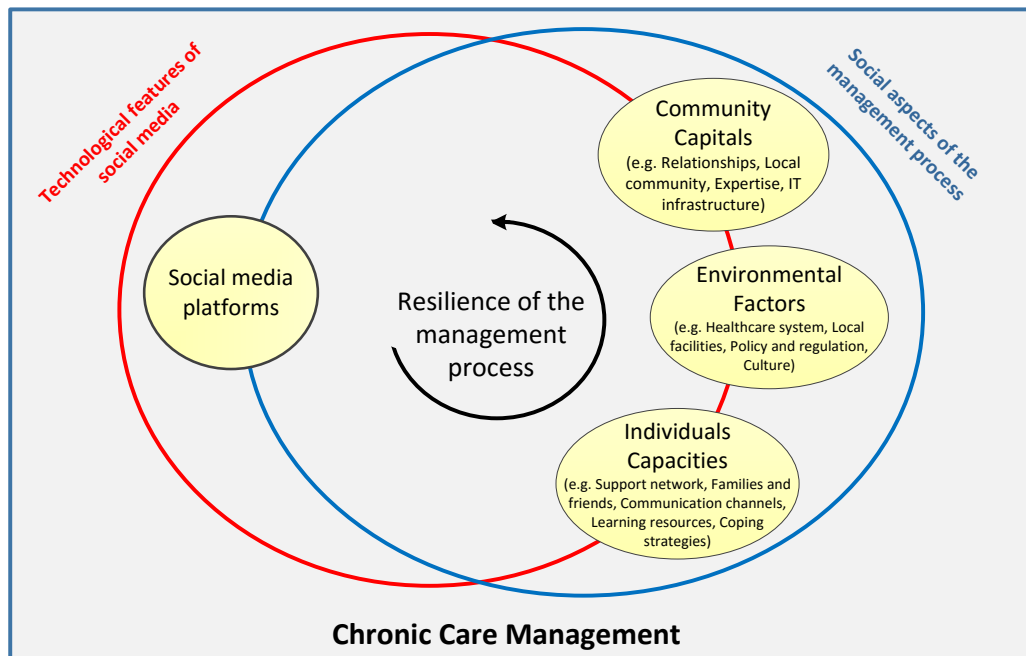


Figure 3.1 Unit of analysis

3.4.4 Approach to Generalisability

Although the use of a case study seems to be promising for theory building (Eisenhardt & Graebner, 2007), there are also strong criticisms about the generalisability of the theories that can be built by this approach (Dyer & Wilkins, 1991). The idea of generalising case findings to theory is a well-developed notion in the literature (Yin, 2003). In general, case research aims to contribute to knowledge by relating its findings to generalisable theories (Cavaye, 1996). However, according to Flyvbjerg (2011), it is not possible to generalise case research findings statistically to a population. The reason is because in case study research, a researcher has no control over independent variables and this may limit the internal validity of any conclusions.

This should not be taken to imply that interpretive work is not generalisable, although the nature of such generalisations is different in the two traditions (Lincoln, Lynham, & Guba,

2011). According to Flyvbjerg (2011), formal generalisation is only one of many ways by which people gain and accumulate knowledge. He believes if knowledge cannot be formally generalised does not mean that it cannot enter into the collective process of knowledge accumulation in a given field or in a society. Rather he argues that such knowledge may be transferable even where it is not formally generalisable. Robert Stake (1978, p6) makes this point more evident by expressing his view in this way:

“Generalization may not be all that despicable, but particularization does deserve praise. To know particulars, fleetingly of course is to know next to nothing. What becomes useful understanding is a full and thorough knowledge of the particular, recognizing it also in new and foreign contexts.”

Given these arguments about generalisability, Walsham (1995) identifies four types of generalisations when a study uses a specific case or cases. These four types of generalisability, that are not mutually exclusive, include: development of new concepts, generation of a new theory, drawing of specific implications, and contribution of rich insight.

By contrasting statistical and analytic generalisation, Yin (2014) argues that the case study is an opportunity to shed empirical light about some of the theoretical concepts or principles. Therefore, findings and lessons learned from a case study are not representations of a population and can only be analytically generalised either through generating new concepts or by corroborating, modifying, rejecting, or otherwise advancing an existing theory.

Yin (2014) and Urquhart (2013) both further highlight this point by arguing that adopting a proper theoretical lens will form the groundwork for an analytic generalisation. They argue that this approach provides a means to scale up the findings of a case study beyond its research settings.

As such, adopting a case study as the research strategy allows this study to generalise its findings in a more analytical way by integrating them into more formal and high level theories (Orlikowski, 1993; Urquhart, 2013).

3.5 Research Design

In the very abstract sense, according to Marshall and Rossman (2011), a research design is the sequences of decisions and activities that logically connects the empirical data of a study to its primary research question, and ultimately to its conclusion.

In this study, a number of frameworks have informed the design of this research. Eisenhardt (1989) presents an eight steps framework for building theories from cases. In her framework, Eisenhardt (1989) identifies steps and activities necessary for rigorously building a theory based on a case study approach. In addition, in a more recent article by Urquhart and Vaast (2012), they discuss the implications of using social media for designing studies that use case study for theory building. They identify and address the challenges that IS researchers have to address throughout their design.

Taking into account these frameworks and guidelines, the design of this study has been strongly influenced by Yin's (2014) 'embedded case study' design² - as shown in Figure 3.2. Further, the detailed and rigorous Glaserian coding approach recommended by the Grounded Theory Method (GTM) (Fernández & Lehmann, 2011; Glaser, 1978; Glaser & Strauss, 1967; Urquhart, 2013) has had deep influence on the design of this study.

Yin (2014) explains that the embedded case study design is a fruitful one when the study involves units of analysis at more than one level. This occurs when within a single case, attention is also given to subunits.

This notion fits nicely with the process of chronic care management as the whole process can be seen as the case, and the management of different chronic disease types can be considered as subunits. The reason each disease type can be seen as a subunit is because many of the characteristics of the process of chronic care management are highly

² Although Robert Yin is known as a positivist scholar/researcher, the high-level case study **design** presented in his recent book is consistent and compatible with both positivist and interpretative approaches. As Yin (2014) points out in his book, high level case study designs are independent of the potential methods of data collection and data analysis that could be bounded to a specific epistemology.

influenced by the type of the disease (Osborne et al., 2008). Therefore, each chronic disease type provides a different insight into the management process.

This approach to research design is consistent with Eisenhardt's (1989) recommendations for designing and conducting case studies. She points out that it is sometimes essential to investigate and compare groups (units) within different categories (case) as it enables expansion of the scope of the theory. This notion is also echoed by Glaser and Strauss (1967) as they give emphasis to the importance of constant comparison between similar and dissimilar groups to delineate dimensions of the emerging theory as well as expanding its scope.

Yin (2014) argues that the embedded case study design addresses two important and common issues that exist in holistic single study design. The first issue is that the embedded design enables the researcher to avoid conducting a study at an unduly abstract level, lacking sufficiently clear and detailed data.

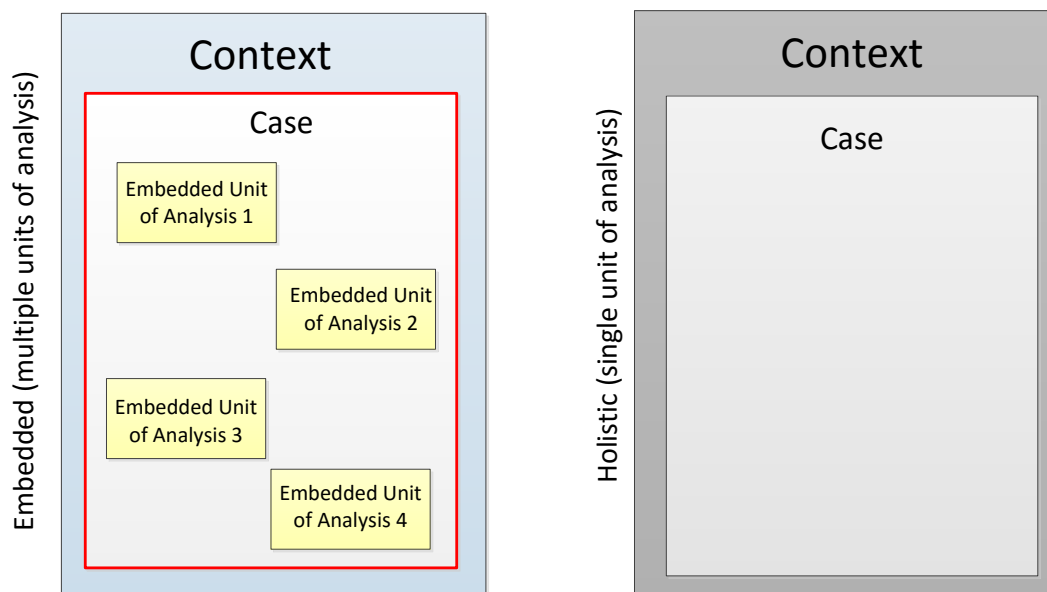


Figure 3.2 Embedded case study design versus a holistic case study design (adopted from Yin, 2014)

The second issue that this type of design addresses is that it enables the researcher to have control over the direction of the study as the evidence begins to emerge. Both aspects of the embedded design - acquiring clear and detailed data, and maintaining the focus - are

the heart of the GTM approach. Therefore, an embedded case study design provides a proper framework to conduct a GTM study.

Given the objective of this study, the above mentioned studies in this section are used mainly as informing studies to the design of this research. The overall research design is presented in Figure 3.3.

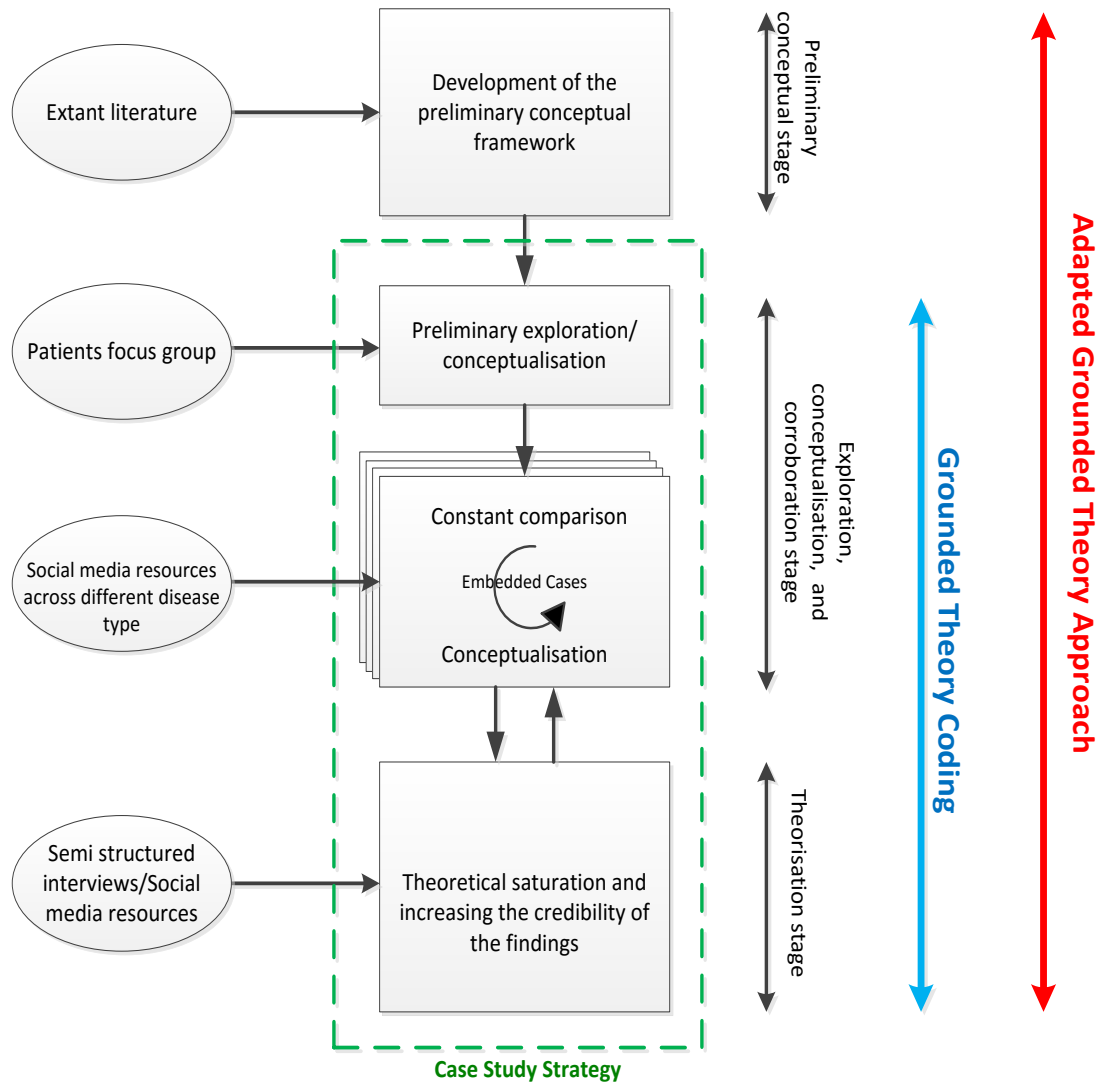


Figure 3.3 An overview of the research design

As this figure shows, the research is designed in three major interconnected stages: preliminary conceptual stage; exploration, conceptualisation and corroboration stage; and theorisation stage.

The first stage (preliminary conceptual development) was discussed in detail in Chapter 2. The focus of the rest of this chapter will be mainly on the other two stages of the research design.

3.6 Exploration, Conceptualisation, and Corroboration Stage

This section discusses the assumptions and activities related to the second stage of the research design (i.e. exploration, conceptualisation, and corroboration stage), as it is presented in Figure 3.3. It starts by discussing the adopted method for this study - i.e. grounded theory. Within the framework of this method, this section will then present more detailed information regarding the iterative process of data collection, data interpretation, and also how the obtained evidence was corroborated and linked to empirical data.

3.6.1 An Approach to the Research Method: Grounded Theory

While the IS discipline seems to accommodate a diverse and thriving range of topics and methods, traditionally two major issues have become inseparable traits of its DNA and have captivated much attention. First, it has been in the great interest of the IS discipline to develop a better understanding of the complexities of interactions between new computer-based systems and human behaviour (Orlikowski, 2010). Second, many of the scholarly endeavours have focused on explaining these interactions by theorising the dynamicity of the interrelationship between new socio-technical processes and human agency (Taylor et al., 2012; Weber, 2003).

These characteristics and impacts make it imperative for IS researchers to find better means to conceptualise and understand these technologies. So, it is not an implausible argument to say that it is in the great interest of the IS community to develop new theories by which they can explain the complexities of these powerful technologies and understand how they may interact with people's daily lives.

According to Urquhart and Vaast (2012) making sense of the emergent dynamics of social media requires new theories that can fit new observations about these technologies. Sarker, Lau, and Sahay (2001) argue that taking an inductive approach to investigate new technologies is a useful way of understanding new socio-technical phenomena. They argue that this is a fruitful approach, especially when the technology under study is so novel that its influences cannot be easily understood and explained by the existing theoretical knowledge. In this regard, Orlikowski (1993) argues that in the absence of useful theories, the 'grounded theory' approach enables a researcher to generate accurate, contextual, and processual theoretical account that is grounded in empirical data.

The novel characteristics of social media make grounded theory an especially well-suited method for studying these technologies and their users (Vaast & Walsham, 2013). Therefore, grounded theory is particularly an appropriate choice for this study as, according to Corbin and Strauss (2008), this method strongly supports the conceptualisation of processes as they happen over time in certain socio-technical conditions.

The adoption of grounded theory in different healthcare related studies has also proven to be fruitful, with promising results. For example, studies by Benoliel (1996) and Cutcliffe, Stevenson, Jackson, and Smith (2006) show the wide use of different adaptations of grounded theory and a variety of approaches to the method in different healthcare contexts. In particular, grounded theory has been employed extensively by some of the strong advocates of this method in studies concerned with the management of chronic disease (e.g. Charmaz, 1999, 2002; Corbin & Strauss, 1991; Winkelman, Leonard, & Rossos, 2005).

These studies show that grounded theory is a well-suited method for developing new substantive theories about social media. They also highlight that this method is a particularly fruitful approach for exploring and conceptualising healthcare processes, especially the ones concerned with the process of chronic care management. Grounded theory is an iterative process relying on three intertwined major activities of coding, constant comparison, and theoretical sampling. It requires several iterations of data

coding and conceptualisation that result in the emergence and refinement of concepts, their dimensions, and their relations.

To make possible and facilitate these interrelated processes, the research needs to use multiple sources of data for corroboration (as suggested by Dey 1993, p248; and Urquhart 2013, p62) and iterative comparisons between and among them. This is the strategy adopted in this study which started with an exploratory focus group where the initial concepts emerged and then were contrasted, refined, elaborated, and qualified with the other sources of data, until saturations were reached on the more relevant and important concepts and their relations, as suggested by Glaser and Strauss (1967).

3.6.1.1 Adding Flexibility to the Rigours: An Adaptation of Grounded Theory

Engaging with existing literature is an important aspect of a grounded theory study. Urquhart and Fernández (2013) highlight the role of existing literature in grounded theory studies by describing it as a necessary process that helps researchers to move away from the state of having an ‘empty head’ to developing an ‘open mind’. However, there are two contrasting perspectives with respect to the role of reviewing existing literature in grounded theory studies. The first perspective that focuses on the ‘emergence’ of theoretical categories stems from the work of (Glaser, 1992). Glaser believes that conceptualising a phenomenon is an iterative and a bottom up approach. Therefore, a researcher’s engagement with the existing literature should aim for gaining a theoretical sensitivity around a subject without developing any preconceptions or making any theoretical commitment. Glaser argues that grounded theory is an inductive process where theoretical categories emerge as researchers try to make sense of empirical data during cycles of data analysis. Based on Glaser’s view, theoretical constructs cannot be pre-defined and they are only products of inductive data analysis.

The second perspective is based on Strauss and Corbin’s (1990) approach to grounded theory. Strauss and Corbin believe that the role of existing literature is not only to create theoretical sensitivity, but also to create a conceptual framework that guides a study. According to this view, researchers can use a well-defined coding paradigm and always look systematically for causal conditions. This approach in Glaser’s view, is forcing data into pre-existing categories, preventing the ‘emergence’ of concepts in an organic way.

Dey (1993), sheds light on how a researcher can adopt any of these perspectives in a grounded theory study. Dey argues that qualitative researchers need to use their accumulated knowledge and not dispense with it as there is a difference between an open mind and an empty head. He argues that being *tabula rasa* and not engaging with literature in order to maintain an empty head is a dangerous practice because it leaves the researcher prone to all manner of prejudices and preconceptions.

However, Dey (1993) also warns that accumulating knowledge through the existing literature can only be fruitful provided there is no permanent commitment to a particular perspective that can foreclose options for alternative explanations. It means that without committing to a particular view; as Seale (1999) argues, it is important to make ideas, knowledge, and values explicit rather than leaving them implicit and pretending that they are not out there.

As such, I argue that understanding of ‘what an adapted grounded theory’ really means resides at the heart of the differences between doing research with an empty head vs. maintaining an open mind. In other words, by making ideas, knowledge, and values explicit, some of the concepts within literature become so important that it is then unreasonable to conceal or ignore them. In some cases it may become almost inevitable to make them visible and incorporate them into the findings of a study.

However, treating literature in this way in a grounded theory study represents an unorthodox use (Urquhart & Fernández, 2013), yet a legitimate approach to this method (Lings & Lundell, 2005). Birks, Fernandez, Levina, and Nasirin (2013), believe that although not all approaches to this method can be labelled as a grounded theory study. However, they argue that the adaptability of grounded theory - either as a standalone methodology or as a complementary method – is compelling evidence of the strengths and flexibility of this method.

Hence, in this study I took an adaptive approach to the use of grounded theory for two reasons. First, it enabled me to take advantage of the strong exploratory nature of this inductive method. Second, I also could incorporate a number of important and pre-existing concepts into the analysis process (Urquhart, 2013).

What Was Adapted in This Study?

It is important to identify how this study was informed by grounded theory and how the method was adapted. The adaptation of grounded theory has a long history in social research and particularly in information systems studies (e.g. Lings & Lundell, 2005; Sarker et al., 2001). By adaptation I mean that along with the strong inductive nature of the grounded theory, the analysis of the empirical data took a ‘middle-order’ approach (Urquhart, 2013) where some categories came from literature (Figure 3.4).

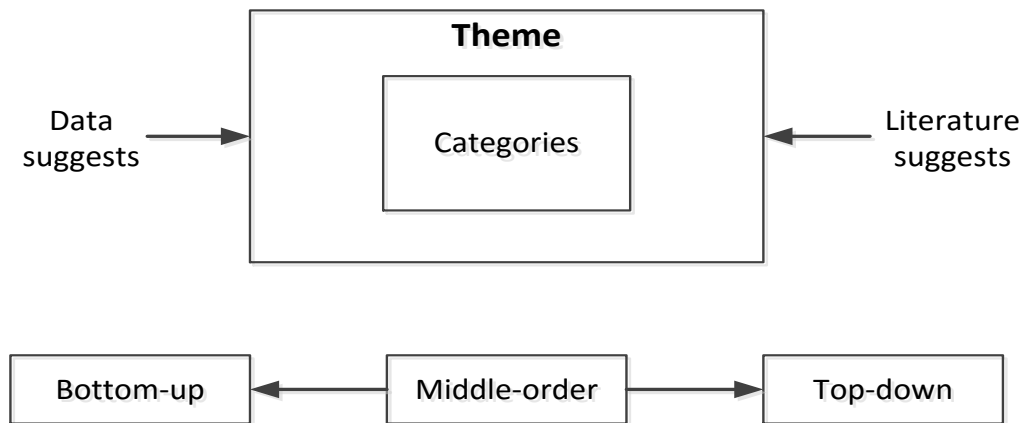


Figure 3.4 A middle-range approach to coding (adopted from Urquhart, 2013)

The use of the ‘middle-order’ approach was appropriate in this study since the qualitative data used for the exploration of the role of social media was not entirely unstructured. Instead, it was informed by a preliminary conceptual framework constructed from the existing theories within literature.

According to Dey (1993), a ‘middle-range’ (an alternative term for middle-order) approach, does not represent any commitments to any particular theory. Instead, by drawing on a wide range of theories, the researcher can effectively organise qualitative data by using findings from initial observations (atheoretical) as well as the existing literature (theoretical) to draw some broad and preliminary distinctions within the data.

That is not to say that in the ‘middle-order’ approach adopted in the study, the preliminary distinctions were preserved intact throughout the analysis. Rather, they were constantly revisited, refined, and modified as the analysis of data progressed.

In practice, once a broad existing category was deemed to be important, the analysis moved toward more refinement of that category. These processes took place by creating further sub-categories and re-conceptualisations of the initial category, as new concepts were emerging. As Gibbs (2008) suggests, the main purposes of adopting this approach was to purposefully organise coding around a productive and relevant starting point and ensure that the analysis was moving in the right direction without being too tied to initial 'middle-order' categories.

Literature as a Source for Adaption

The importance of an open mind, as opposed to an empty head (Dey, 1993) cannot be overemphasised. The grounded theory method requires that researchers very consciously put their knowledge of the literature aside, so preconceptions are not imposed on the data.

As Birks et al. (2013) explain, in a grounded theory study, a theory can be built at both a level of macro theorisation and a detailed level of micro theorisation. The high-level of macro theorising is guided by extant literature, while the detailed level of micro theorising is done in an inductive fashion. Birks et al. (2013) believe that this approach is still a valid grounded theory study, however; they urge that it is necessary to explain how the literature is used in this modified and adapted grounded theory.

As Dey (1993) explicates, analysis is both a conceptual and empirical challenge as codes and categories must be 'grounded' conceptually and empirically. That means the categorisation of data must have two aspects: internal and external. In their internal aspect, codes must be meaningful in relation to the data, and in their external aspect, they must be meaningful in relation to the other categories.

In this study, I recognised the process of chronic care management as an instantiation of a community. This view in particular helped me not to build a theory that is only applicable at individual levels (e.g. patient or carers). This approach allowed me to theorise the role of social media in a wider context beyond the clinical setting and into a wider community.

As such, the existing literature was used as a *source of data* to become more sensitised about the dynamics of sustainable healthcare communities and their attributes. In so doing, the process was engaged with the extant literature outside the IS discipline including psychology, medical sociology, and environmental literature. The purpose was neither to search for any pre-existing categories or codes that would accommodate data, nor to force a concept or a specific theory into the analysis.

Following Dey's notion, the non-committal engagement with the extant literature provided the study with a pool of high-level concepts. This pool of concepts enabled me to devise and revise categories that fitted into a wider analytic context. This pool of concepts was a preliminary high-level distinction of data rather than an exhaustive ones and further differentiation within each category drew upon the distinctions that were made within the data.

The non-committal engagement with literature from other disciplines was a fruitful process as it ensured that emerging key categories fitted the research goals. By taking this approach I argue that this study is still within the grounded theory's territory (Birks et al., 2013), as the choice of engaging with literature was driven by the research goals.

However, this approach shifts the study from a pure grounded theory one to what is known as adapted grounded theory (Lings & Lundell, 2005). In other words, although some of the initial high-level conceptualisation was informed by extant literature, the actual analytical approach and the development of emerging concepts at the micro-level was done in a grounded, inductive fashion, following the principles of grounded theory method.

To provide an overview of the adaptation process, I use the seven principles of the adoption of grounded theory from a study by Birks et al. (2013). The highlighted row in Table 3.4 shows how grounded theory method was adapted to this study.

Table 3.4 An overview of the adaption of the grounded theory method in this study

<i>GTM Aspect</i>	<i>Description</i>	<i>Approach used in this study</i>	<i>Position to GTM</i>
The main purpose of GTM is theory building	The objective of the study must be developing theory rather than to test theory or to provide a rich description of a phenomenon based on a systematic exploration of the accounts of the phenomenon	A theory of social media in chronic care management was built	Conducted in accordance with GTM principles
Analysis and conceptualisation are engendered through the core process of constant comparison	Every slice of data is compared with all existing concepts and constructs, to see if it enriches an existing category (by adding to/enhancing its properties), forms a new one or points to a new relation	Data from each sources of data were compared against emerging data with this question in mind where a specific slice of data fitted in	Conducted in accordance with GTM principles
Slices of data of all kinds are selected	Different types of data are used for corroboration/triangulation	Diverse sources of data including focus group, online discussions, and interviews were used. Data were constantly compared for corroboration	Conducted in accordance with GTM principles
Theoretical sampling	The data were collected based on theoretical sampling, with collection ceasing when the data reach theoretical saturation.	Sampling was done based on the emerging concepts and with the purpose of theoretical saturation	Conducted in accordance with GTM principles
Management of preconceptions	Avoid using specific theories pertaining to the phenomenon under study as the starting point for data collection and analysis	Non-committal literature review carried out. However, some of the core categories were so important to the research question and they were informed by the literature	Adapted to the purpose of the study
Inextricable link between data collection and analysis	The data collection and analysis activities were intrinsically related; done almost at the same time	The process of open coding, constant comparison, and selective coding were done at the same time across multiple data sets	Conducted in accordance with GTM principles
Consistent and rigorous coding	Following a clear coding scheme in a systematic fashion, to reducing the data and abstracting out the context.	The Glaserian coding scheme of line by line open coding, selective coding, theoretical coding was followed. Data were grouped into sub-categories, categories, themes. The relationships between the core categories and themes were explored	Conducted in accordance with GTM principles

3.6.2 Data Collection Strategy

Informed by the research questions and as suggested by the literature (e.g. Angood et al., 2010; Fox et al., 2005), patients and carers are two of the most important actors in chronic care management. They are also the major social media participants (Merolli et al., 2013). So, as two key groups of participants, they could provide rich and valuable insights not only about the experience of living with chronic illness, but also about the potential influences of social media on the process of chronic care management.

3.6.2.1 Access to the Participants

Further, reports show that in Australia, arthritis is the most prevalent chronic illness with one in five Australians having one type of arthritis (Arthritis Victoria, 2013). While arthritis is better known as a chronic disease associated with aging and disability (Arthritis Victoria, 2011) reports from Arthritis Victoria (2011b) show that a large group of patients known as ‘Young Adults with Arthritis’ are still at their working age.

Reports indicate that in general, this group of patients and their carers, are more likely to take an active role in the management of their condition. In addition, surveys shows that these groups of patients and their carers are more interested in using new information and communication technologies to support the management of their conditions.

Therefore, from the data collection perspective, this category of patients and carers was expected to provide a unique opportunity for gaining richer and more insightful information useful to this study. Later, this speculation was confirmed during a meeting with one of the managers in Arthritis Victoria.

Therefore, the main strategy at the onset of the data collection stage was to work with the ‘Young Adults with Arthritis’ and focus on this group of participants. In addition, as part of the data collection strategy, the snow balling techniques (Faugier & Sargeant, 1997; Streeton, Cooke, & Campbell, 2004) were used to find the next important informants.

3.6.2.2 Participants Recruitment

Participants were recruited through different sources and organisations. This section provides an overview of the recruitment process from three major organisations including the Arthritis Victoria, Carers Victoria, and the Alfred Hospital.

3.6.2.3 Arthritis Victoria

With 1.5 million arthritis patients in the state of Victoria, Arthritis Victoria is the peak organisation in this state that provides a wide range of supports to its consumers (Arthritis Victoria, 2010). Arthritis Victoria supports studies that can create value for its consumers and their expected outcomes are consistent with the organisation's vision and strategic approach. As such, Arthritis Victoria is willing to assist such studies through the recruitment of participants and facilitate access to other sources of information (Arthritis Victoria, 2013).

Arthritis Victoria also covers a wide range of consumers across different age groups including the 'Young Adults with Arthritis' with an age range between 18-49 years old (Arthritis Victoria, 2011). This category of patients covers a considerable proportion of patients who suffer from different types of musculoskeletal diseases (arthritis) in the state of Victoria (Arthritis Victoria, 2011). To recruit participants through Arthritis Victoria, an initial meeting was setup with three managers of the organisation and, during a presentation, the purpose of the research and its potential benefits to their consumers were explained. They showed keen interest in the study and agreed to introduce and put me in contact with their consumers.

In order to get a better idea about the people who potentially could participate in the study, and also to establish a deeper and better relationship with them, I participated in a number of social events organised by Arthritis Victoria. The two important events that provided a networking opportunity with patients, carers, and practitioners were an annual Consumer Conference held in April 2012, named 'Much Ado about Pain'. The other event was the launch of the Arthritis Victoria consumers' interactive map named 'Arthritis Map'.

These strategic activities and connections provided a unique opportunity and possibilities for this study to establishing a good and collaborative relationship with Arthritis Victoria, and also helped to recruit participants from the most influential groups of informants.

3.6.2.4 Carers Victoria

The Carers Victoria (CV) is the peak organisation within the state of Victoria with over 50,000 members. It provides a diverse range of services and support to carers, helping them to improve and maintain their mental and physical health (Carers Victoria, 2013).

Carers Victoria also provides support to relevant and approved research plans and acts as a regulator and a middle-man between researchers and the Carers Victoria's consumers. To recruit participants through Carers Victoria, an application has to be made by the researcher for approval. Upon the approval of a proposed study, the details of the study and researchers' contacts will be advertised on the Carers Victoria's website and in their monthly newsletters.

As such, I made an application to CV and after providing further supporting documents, within a month the study was advertised on the Carers Victoria website and its monthly newsletter. Through this process, six participants made contacts with me and after an initial communication and discussion within the research team; three of the carers were selected. The reasons for selecting those three carers was that each could provide very different views about the role of social media in chronic care management. One of them was very interested in using the Internet and social media, one was cautious about using social media, and the third person was very hesitant about using these technologies.

3.6.2.5 Practitioners

In general, recruiting practitioners as research participants, especially in the field of medical and healthcare activities, is not an easy process. The main reason is because usually there is a high demand on medical practitioners' time and they have little or no time for other activities. The strategy for recruiting this group of practitioners was to use existing relationships with one of the major hospitals in Melbourne (The Alfred Hospital) which is also associated with Monash University. Through this relationship, and developing new ones by using snowballing techniques, it became possible to recruit one

healthcare manager, one medical academic, two general practitioners (GPs), and two specialists. These practitioners covered a wide range of practitioners who are generally involved in managing chronic conditions.

3.6.3 Data Collection Process

Multiple techniques were employed to collect data from multiple sources including focus group, online forums, and interviews with key informants. Table 3.5 provides an overview of the data sources used in this study.

To capture patients and carers experiences of chronic care management, and also to explore the possible role of social media, data collection focused on a number of key areas at its onset. Those areas were mainly related to the participants' experiences in managing different disease types; the potential roles that social media could play in the management of each disease type; and how the use of technology would shape or change the perception of the participants about the notion of community and its attributes, particularly resilience.

The multiplicity of the data sources and the usage of various data collection techniques allowed for corroboration across those sources and techniques, which in turn enabled the study to incorporate different perspectives into the emerging concepts. This recursive process allowed the study to gradually develop a set of concepts that encompassed different sources of data while the rigour of the study was maintained (Corbin & Strauss, 2008).

Using multiple sources of data was a useful practice as it ensured that emergent concepts were grounded in diverse perspectives. It also allowed for cross-checking of multiple perspectives. Also, corroboration of data was a useful and fruitful process as the different sources of data complemented one another. This process in turn strengthened the emerging concepts.

Overall, relying on multiple sources of data along with the process of corroboration gave more credit to the findings as the emerging concepts were strongly substantiated and grounded in empirical evidence.

3.6.3.1 Slice of Data

The concept of 'slice of data' plays a significant role in grounded theory method. As Urquhart, Lehmann, and Myers (2010) point out, in grounded theory, conceptualisation is engendered through the process of constant comparison. In this core process, every slice of data is compared with the existing constructs, where the researcher tries to find out whether the new slice of data enriches an existing category, forms a new one, or points to a new relation.

Urquhart (2013) argues that it is necessary for grounded theorists to use different types of data. The diversity of data sources gives the researchers access to different views from which they can develop a category or explore its properties. So, the more diverse the 'slices of data' are, the more accurate the process of conceptualisation will be.

The diversity of 'slices of data', according to Urquhart (2013), could be based on the methods of data collection such as field interviews, surveys, or focus groups. The diversity of 'slices of data' is also linked to the diversity of participants. As Glaser and Strauss (1967) point out, the diversity of the recruited participants, can help to condense the development of the properties of the categories, integrate the categories' properties, and delimits the scope of the theory.

Therefore, in this study the focus of the data collection ('slices of data') was on maximising the diversity of the data sources. Also, within each data set the aim was to maximise the similarity of the data sources in order to verify the usefulness of each category and generate basic properties (Glaser & Strauss, 1967). Details of the data sources are presented in Table 3.6.

3.6.3.2 Focus Group

At the exploratory stage of the data collection, a focus group was conducted to explore the preliminary dimensions of the research problem. It also aimed at identifying the initial constructs that could inform the processes of constant comparison and theoretical sampling.

It is recognised that focus groups provide a study with an opportunity to generate rich data that goes beyond individual interviews (Morgan & Spanish, 1984). It is also suggested by Kamberelis and Dimitriadis (2011) that simple and relevant tools such as pictures or short footages can break the ice among the participants and create a common ground prepare discussions and flow them in the right directions.

The focus group was organised to take place in a community centre. The participants were all young adults with arthritis and the group was comprised of 10 participants including eight arthritis patients and two of their carers. The session was led by an experienced mediator. I, as the researcher, was taking notes about the discussion and about my observations.

At the beginning of the session, the participants were provided with a number of different photographs and they were asked to pick one or two that they felt they could use to express their thoughts and feelings about their conditions. The participants were also encouraged to add notes or draw pictures to complement their expressions.

Discussion within the focus group took more than two hours, and the focus of the discussion was mainly on the Internet, social media, and how they were used by the participants. The analysis of the focus group transcripts, my notes, the participants' notes, and their reflections on the photographs led to a number of important findings.

First, they revealed the preliminary concepts related to the role of social media in chronic care management. The emergence of the initial concepts provided a basis for further exploration and comparisons of the collected data, as guided by Glaser and Strauss (1967) and Urquhart (2013).

Second, they showed that despite their potential, there were also a number of areas related to the use of social media that were marked by significant uncertainties. This finding also suggested that many of the characteristics and applications of social media mentioned by the participants were related to or influenced by the material aspects of social media. As such this finding provided a valuable and strong basis for looking at sociomateriality (Orlikowski, 2010) as a proper theoretical lens 'to grapple' with (Strauss, 1987).

Third, the focus group also enabled the study to move toward the next stage of data collection from potential social media data sources. During the discussions, the participants were asked to comment on the ways they used social media. Among many existing options, the participants underlined a number of social media platforms, such as Facebook pages, blogs, as well as some online patients and carers forums that they were using for the management of their conditions. This information provided a reliable starting point for collecting data from social media platforms that are used extensively by the patients and carers.

3.6.3.3 Online Patient Support Forums

Informed by the outcome of the focus group, data collection continued from social media sources. The initial concepts that emerged through the analysis of the focus group data guided the rest of the process of collection, coding, and constant comparison of the data that came from social media resources. The iterative process of constant comparison is a tenet of grounded theory (Glaser & Strauss, 1967; Urquhart & Fernández, 2013).

As such, the iterative process of constant comparison was adopted where different chronic disease type forums (e.g. diabetes, autism, asthma) were examined for constant comparison between the collected data. Major data came from a variety of online patient forums and other social media platforms, such as Facebook and Twitter.

To sharpen my thinking about the emergent concepts and their properties, and also to enrich my understanding of the influence of social media, it was necessary to investigate the perspective of the key player (e.g. patients and carers) from different angles. In doing so, I started to make comparisons between slices of data within and across different disease type forums. The iterative process of coding and analysis through constant comparison enabled the study to search for contrasts within the evidence while becoming sensitive to any new emerging concepts with possible alternative explanations.

Table 3.5 An overview of the collected data at each stage of the study

<i>Data source</i>	<i>Numbers of items/participants</i>	<i>Type of stories/participants</i>	<i>Stage</i>
Focus group	10 participants	8 arthritis patients, 2 carers	Initial exploration/initial conceptualisation
Arthritis forum	91 stories	52 patients, 39 carers	Constant comparison/theoretical sampling/corroboration
Diabetes forum	82 stories	54 patients, 22 carers, 6 family members	
Breast cancer forum	54 stories	34 patients, 20 family members	
Autism forum	49 stories	22 patients, 19 carers, 8 family members	
Asthma forum	47 stories	33 patients, 15 carers	
Interviews	10 participants	1 healthcare manager, 1 medical academic, 2 GPs, 2 specialists, 2 patients, 2 carers	Constant comparison /theoretical saturation/ corroboration

Table 3.6 An overview of data sources in each case

<i>Data Source</i>	<i>Participants</i>	<i>Embedded Cases</i>	<i>Data Source Code</i>	
Focus group (Arthritis patients)	<i>Patient</i>	C1	S1_1	
	<i>Carer</i>			
Arthritis forum	<i>Patient</i>		S1_2	
	<i>Carer</i>		S1_3	
Diabetes forum	<i>Patient</i>		C2	S2_1
	<i>Carer</i>			S2_2
	<i>Family</i>	S2_3		
Breast cancer forum	<i>Patient</i>	C3	S3_1	
	<i>Family</i>		S3_2	
Autism forum	<i>Patient</i>	C4	S4_1	
	<i>Carer</i>		S4_2	
	<i>Family</i>		S4_3	
Asthma forum	<i>Patient</i>	C5	S5_1	
	<i>Carer</i>		S5_2	
Interviews	<i>Healthcare manager</i>	C6	S6_1	
	<i>Medical Academic</i>		S6_2	
	<i>General Practitioner</i>		S6_3	
	<i>Specialist</i>		S6_4	
	<i>Patient</i>		S6_5	
	<i>Carer</i>		S6_6	

For conducting coding and constant comparisons, forums and other social media sources were grouped into seventeen categories based on the disease type they were representing. The social media sources used for this study were open to the public and researchers, and they were either sponsored by health authorities, by support

organisations, or universities. Online posts and stories came mainly from participants with different backgrounds and demographics. The participants were generally patients and carers however; patients' family members, doctors, and other health professionals were also active members in those forums. The collection of data from these sources followed ethical guidelines of Monash University.

From the seventeen different categories of online resources, the top five categories that represented the most prevalent chronic disease (Pink, 2011) were chosen, and forums with the highest volumes of posts were selected for the study. It was also observed that there was a correlation between the prevalence of a disease and the volume of interactions in its related forums. The collected data were examined through the process of constant comparison, complemented by written theoretical memos. Figure 3.5 shows some of the online resource used in this study.

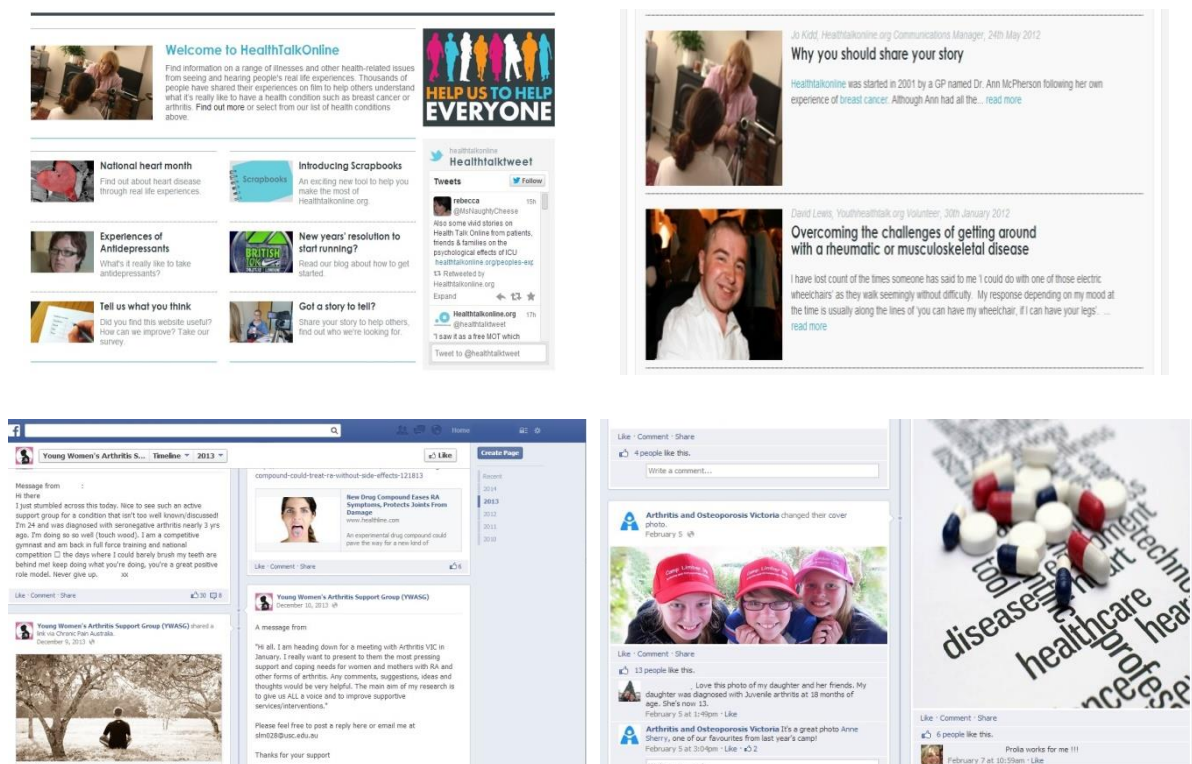


Figure 3.5 Examples of the online patient support forums

For the purpose of theoretical sampling and also to find the relevant items in the top five forums, a set of keywords (e.g. Facebook, forum, or online) were used. These keywords were mainly used to identify messages and stories that were pointing to the use of social media.

The initial search identified 833 relevant stories and comments. The 833 items were reviewed and 323 of them were marked as relevant. The selection criteria was based on the type of activity that a post or a story was representing (e.g. use of social media), or the purpose of the activities (e.g. chronic care management), or the relevancy of the stories to the research question.

This stage of data collection spanned a two months period, followed by interviews with some of the key participants in the forums. It is noteworthy that the use of social media resources provided this study with unique possibilities. For example, with regard to the analytical processes of coding, social media resources provided interesting benefits to this study by making it more convenient to collect new data; made possible by a deeper exploration of the dimensions of the phenomenon; and made easier to better contrast the findings with the previous observations within the study.

3.6.3.4 Interview

The purpose of the interviews was to provide supplementary data to the research (Orlikowski & Yates, 1994), reach theoretical saturation within the emergent themes, and identify the initial relations between and among theoretical constructs (Glaser, 1978). The interviews were also a means for the corroboration of the final framework (Dey, 1993). The interviews, as suggested by Eisenhardt (1989), also helped to fill the theoretical gaps when other sources of data could not provide further insight to the emergent concepts or their properties.

In total, 10 semi-structured interviews were conducted from the key informants as presented in Table 3.5 and Table 3.6. The interviews were conducted with two major groups of the participants in two rounds. Each interview took between one to two hours.

In the first round, four key informants including two patients and two carers from the online forums were interviewed. While, the initial constructs emerged through the analysis of the focus group, there were still emerging concepts that seemed to be important to the research question. There were also threads of new or unexpected concepts that needed further exploration and delineations.

However, the existing data would not provide any further insight to those theoretically interesting concepts. As such, the role of each interview was to provide theoretical data

about the emerging concepts, where the searches through the online forums were either inconclusive or irrelevant, or the data could not lead to theoretical saturation.

The interviews and their focuses were mainly guided by the online posts and messages from the patients' forums that seemed to point to a very significant theoretical construct. To wit, the concept of 'constraints' was initially a subcategory of the '*affordances of social media*' theme. However, this concept gradually started to become more theoretically important, as the data suggested that many of the participants were expressing their concerns about using social media.

Later in the process of data collection, interviews with some of the patients and carers highlighted dimensions of such concerns in more details. The interviews also enabled me to focus on the core aspects of the emergent concept of 'constraints' and reach saturations in relevant categories. More details of such saturations are presented in Chapter 6. As a result of this process, the subcategory of 'constraints' became a significant concept to this study, and was elevated to a theme.

Internal vs. external views

The first round of the interviews still provided the study with internal perspectives, namely patients and carers. However, for the purposes of corroboration, and also for developing potential alternative explanations, as suggested by Orlikowski (1993) and Eisenhardt (1989), the second round of interviews were conducted.

The participants of this round were mainly chosen from the influential actors, other than patients and carers. As shown in Table 3.5, in this round, a diverse group of six practitioners were interviewed and their perspectives were incorporated into the findings.

By treating patients, carers, and practitioners as the domain experts, this approach enabled the study to include multiple and varied voices in the qualitative report and analysis. As a result, the process not only opened up a multidimensional means of approaching the research question, but also enabled me to gain an in-depth understanding of the issue. Further, multivocality of the participants at this stage, as Richardson (2000) and Tracy (2010) suggest, enabled the study - in Dey's (1993) term - to corroborate evidence across multiple voices and methods and establish more completeness in the inquiry.

The data collection stopped when no new concept emerged and further data could not provide any new insight to the phenomenon (Urquhart, 2013)

3.6.4 Data Analysis

The analysis of this study was informed by grounded theory method. Coding is analysis and the purpose of coding is to abstract the collected data to meaningful categories and relations by which a complex social phenomenon can be understood (Miles & Huberman, 1994). In grounded theory method, Glaserian (Glaser, 1978) and Straussian (Strauss, 1987) are the two dominant coding approaches for conceptualisation of qualitative data. The Glaserian approach was adopted in this study, as it is a more flexible method for generating substantive theory from data. As such, the analysis of this study followed the iterative process of open coding, selective coding, and theoretical coding as guided by Glaser and Strauss (1967). The coding process stopped when theoretical saturation was reached for all the major categories.

In grounded theory, the main objective of the coding process is to explore the relevant categories that represent the reality of a phenomenon in its context, and to identify how they can be related. In grounded theory, the process of open coding, constant comparison, selective coding, and theoretical sampling are intertwined. However, for the sake of clarity, these processes are discussed here separately while the endeavour is to show their interconnectivity.

3.6.4.1 Open Coding

The process of open coding was first introduced by Glaser (1978) as the first step of the GTM analysis. By assigning the initial labels (descriptions or meanings) to data, the major purpose of the detailed open coding is to explore and conceptualise the phenomenon by allowing the emergence of categories, their properties and dimensions (Urquhart, 2013). In this study, the open coding took place as an ongoing process, along with constant comparison of data for each data set.

The focus of the process of open coding was on two core activities. First, to stay as open as possible to the analytical meanings of data and let the data speak itself. Second, in Glaser and Strauss (1967) language, each 'slice of data' was interrogated for its relevance and fit to a specific category. These two intertwined activities helped the

analysis to unravel what was the important data (in relation to the research problem), and gave more analytical direction to the analysis of the data.

The first round of the open coding applied to the first set of collected data through the focus group. Once the discussions and other material from the focus group were transcribed, Nvivo™³ software was used for the coding process. At the outset of data analysis, open coding was done at the sentence level and line by line as the purpose of the coding at this stage was to explore concepts with a high level of detail. It also was an emancipatory process as it let the coding not be biased by any preconception, rather, it invariably gave new insights to the use of social media in the management process.

The process of open coding initially produced 84 codes, describing how different social media platforms were used by the patients and carers for management purposes. To start making sense of the produced codes, and also create more conceptual sensitivity, the open codes that were pointing to the same concepts were grouped into the same groups. This process created 26 categories.

To facilitate grouping, the open codes were sub-grouped and then grouped to more abstract and larger categories. By grouping the open codes into larger analytical categories, the collected data was reduced to more manageable and understandable analytical units. The categorisation of the focus group in this way was the initial conceptualisation of data that also provided the basis for the process of *constant comparison*.

Therefore, the open codes of the already coded transcript were revisited with this question in mind: 'To what category does this code relate?' As a result, the number of open codes within the focus group transcription reduced to 73 codes and they were grouped into 23 categories. The process of open coding and constant comparison continued for the other data sets until no new open codes and no new groups or categories could be generated. Due to the high volume of data accessible through social

³ NVivo™ is a qualitative data analysis (QDA) computer software package produced by QSR International.

media resources, as suggested by Urquhart (2012), instead of doing line-by-line coding of each data set (different forums), the coding was done at the post or message level.

3.6.4.2 *Selective Coding*

The primary purpose of the selective coding process was to scale up the open codes and initial categories into those categories that were more important for the research problem (Glaser 1978, Urquhart, 2013). The process of selective coding was involved with a number of important decisions about the direction of conceptualisation and the strengths of the emerging concepts. Charmaz (2011) gives prominence to the importance of such decisions by arguing that once some clear and significant analytic directions have been defined, the analyst has to take decisions about which open codes make the most analytic sense in terms of categorising the whole data.

So, at this level of coding, the research problem was used as the major guide to focus on the open codes that were more important to the research problem, thus were going to form larger categories. Also, the organisation of the selective codes was informed by the research problem as to how to decide what categories or codes should become the subcategories properties or dimensions of the more significant codes.

Following this process, it gradually became evident that the two key themes of '**Affordances of Social Media**' and '**Social Media Constraints**' were becoming stronger and more important selective codes. Detailed discussions of the coding process related to these two emergent themes are presented in Chapter 4 and Chapter 6.

In Vivo Codes

Some of the selective codes were *in vivo* Codes. In vivo codes are mainly suggested by participants and it is the practice of assigning a label to a section of data using a word or short phrase taken from that section of the data. The significance of *in vivo* codes is their importance in incorporating participants' views in the interpretation of the collected data. As Urquhart (2013) explains, *in vivo* codes are among the most significant qualitative codes because they analytically refer to some significant matters. The aim of creating an *in vivo* code, as King (2008) points out, is to ensure that concepts stay as close as possible to research participants' own words or use their own terms because they capture a key element of what is being described. As such, in

this study, wherever possible, I tried to use *in vivo* codes, so, in my interpretations of empirical data I could stay faithful and close to participants' perspectives.

3.7 Theorisation Stage

This section discusses the assumptions and activities related to the third stage of the research design (i.e. theorisation stage), as presented in Figure 3.3. Within the framework of the grounded theory, the focus of this section will be mainly on the process of theorisation of the findings. As such, to complete the iterative cycle of grounded theory coding, this section starts with the process of 'theoretical coding'.

3.7.1 Theoretical Coding

The main purpose of the theoretical coding was to identify the relations between the emergent constructs. In so doing, there was a number of coding family and number of options to adopt for theoretical coding, including the ones suggested by Straus and Corbin (2008) and Glaser (2005). However, as Urquhart (2013) explains, there is nothing that stops the researcher from developing their own coding family to identify the relationships between the emergent concepts. This approach to theoretical coding ensures that the relations are strongly grounded in data, rather than data being forced into the pre-defined relations.

As Urquhart (2013) points out, for taking this approach to theoretical coding, it is important to use the theoretical memos that were already taken during the data collection and analysis. It is also important to make sure there are enough instances of the identified theoretical codes in the data.

3.7.1.1 *The Role of Theoretical Memos*

In addition to the research problem, memos played unequivocal roles in identifying strong analytical directions within the data, as well as finding the relationships between the emergent constructs. As Charmaz (2006, p72) explains:

“Memos catch the analyst's thoughts, capture the possible comparisons and connections, and crystallise the directions to pursue.”

One of the important strengths of memos, according to Charmaz (2006), is that certain key analytical codes that are invisible within the rich qualitative data can stand out and take form as key theoretical categories.

For example, a key concepts that later became a strong analytical focus was ‘community resilience’. The concepts related to this theme started to take shape after a number of transcripts and key messages from patient forums were reviewed, and memos were written as reflections. The following excerpt is an example of a memo I wrote that led to the reformulation of the research question and emergence of the theme of ‘community resilience’ that was not evident initially in the collected data:

“My thinking is now being influenced by the data I collected from the patients, and observation of the interactions between them and other parties such as doctors. I am getting this understanding that the major endeavours of these individuals is to deal with a series of difficulties that arise because of chronic conditions that have happened to a number people within a community. In fact, every new case of chronic disease can be seen as a set of new issues affecting many members of the community in a variety of means. This is what actually brings together different actors who have different perspectives about the disease and diverse stakes in the management process. However, despite their differences, their aim is to support patients and their families, helping them to bounce back to their normal life and maintain it. If we look at the situation of the chronic care from this perspective then I think it lends itself to the concept of sustainable or resilient communities“ (Researcher’s memo, recorder on 17 Sept 2013).

3.7.2 Theoretical Lens

In the light of engaging with literature (i.e. empty head vs open mind), and as a result of the literature review for this study, sociomateriality was adopted as the theoretical lens. Further, a closer investigation of the findings showed that the nature of the collected data lent itself properly to this theoretical lens.

Sociomateriality as a lens offered promising theoretical apparatuses for scaling up the emergent grounded theory to a higher level of abstraction. This lens also enabled the findings to be analytically generalised, and also provided assistance; to consider the ramifications of the findings, understand their intricacies, and explain their complexities within a broader theoretical context (Orlikowski, 1993; Urquhart, 2013). Later, in Chapter 8, this theoretical lens is used as a framework for theoretical integration of the findings of this study (Urquhart, 2013), where the major concepts that emergent through data analysis are engaged with this framework.

A similar approach can be found in many of the studies that have used different adaptations of the grounded theory. For example, Levina and Vaast (2008) argue that their study is *informed* by grounded theory, using Bourdieu's (1998) practice theory as a lens, to understand and explain their findings about the boundaries of collaborations in offshoring projects. Also, in a more classic and *purer* grounded theory approach by Hekkala and Urquhart (2013), they use Hardy and Leiba-O'Sullivan's (1998) theory of empowerment as a lens. Through this theoretical lens, they explain how the hidden structure of power in an inter-organisational information systems project can influence its outcomes. The concept of entanglement between social agency and material features of technology, and the saturation of these two in practice, is the principle constituent of sociomateriality.

Sociomateriality argues that affordances of technology are not exclusively properties of people or of artifacts, rather they are constituted in relationships between people and the materiality of technology (Orlikowski, 2010). While material exists independent of people, materiality and affordances do not (Hutchby, 2001; Leonardi, 2012). Treem and Leonardi (2012) argue that because people come to materiality with diverse goals, they perceive artifacts as affording distinct possibilities or limitations for action.

As Treem and Leonardi (2012) point out, many studies concerned with the application of social media in different contexts provide insights about a specific tool that is used in a particular context. However, they argue, these genres of study do not allow the development of an understanding of the implications and consequences of social media use within a specific context and beyond that. Their observation shows two major reasons behind such limitations. First, current approaches to studying social

media are too application-focused, preventing generalisation across contexts. Second, the studies are too broad, obscuring the ways technology may influence human behaviour and agency.

Therefore, the sociomaterial perspective and the notion of affordance as a theoretical lens seemed to be a promising choice. This perspective enabled me to understand the findings and interpret them in a way that was based on the agencies of both social media and their users. Further, this theoretical lens enabled me to scale up the emergent theory and expand the scope of its applicability and implications.

Chapter 8 provides more details on the process of theoretical integration and analytical generalisability.

3.8 Use of Nvivo™ Software for Coding and Data Analysis

Nvivo 10™ was used in this study as the coding software. The software provided this study with some unique features, such as accuracy of coding, possibility of having version control, and also easy adjustment and modification of the codes and categories.

The use of Nvivo™ was particularly helpful during the data analysis process as it drastically improved the pace of coding. It also facilitated linking annotations and memos to a specific code or sections of codes.

Perhaps the most interesting and helpful feature of Nvivo 10™ was the ways it enabled me to see the bigger picture of the analysis process. The hierarchical design of the software gave access to different levels of a data set while at the same time I could see the whole data corpus of the project in one single view (Figure 3.6). This was particularly important and helpful as having access to all data facilitated the process of constant comparison and also made the use of theoretical memos more efficient. It is particularly useful to see and understand the whole process of coding and get a better sense of its directions.

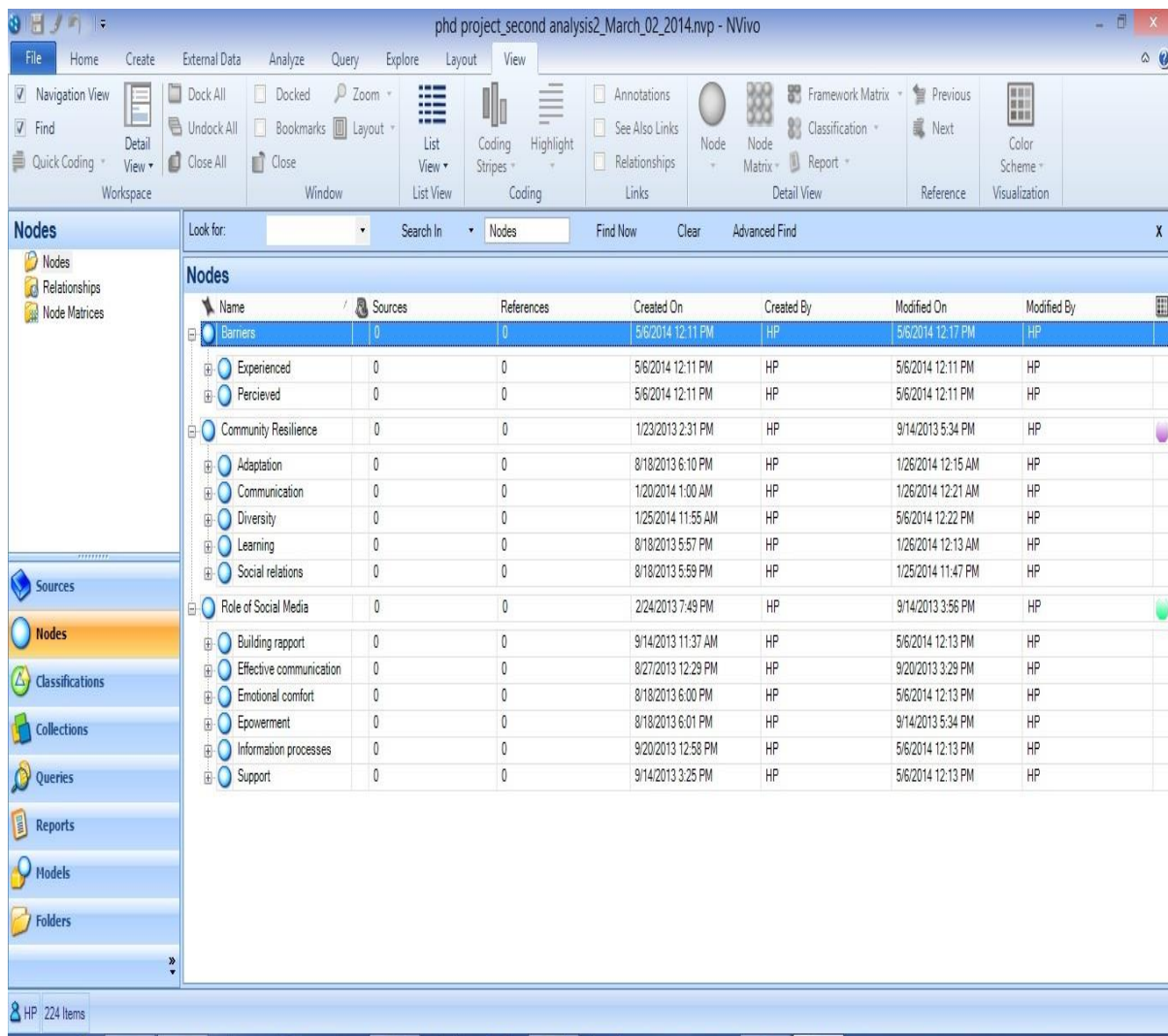


Figure 3.6 The use of NVivo 10™ for coding and data analysis

Further, I found features, such as advanced methods of importing data from social media very helpful and convenient. In addition, tree maps that could also show the potential relations between the concepts and the most repeated terms within data sets were extremely useful. These features were particularly powerful as they assisted me in seeing messy data sets in a more organised way. On many occasions I could pinpoint interesting concepts or items that were normally hidden under the sheer volume of the qualitative data I had (Figure 3.7).

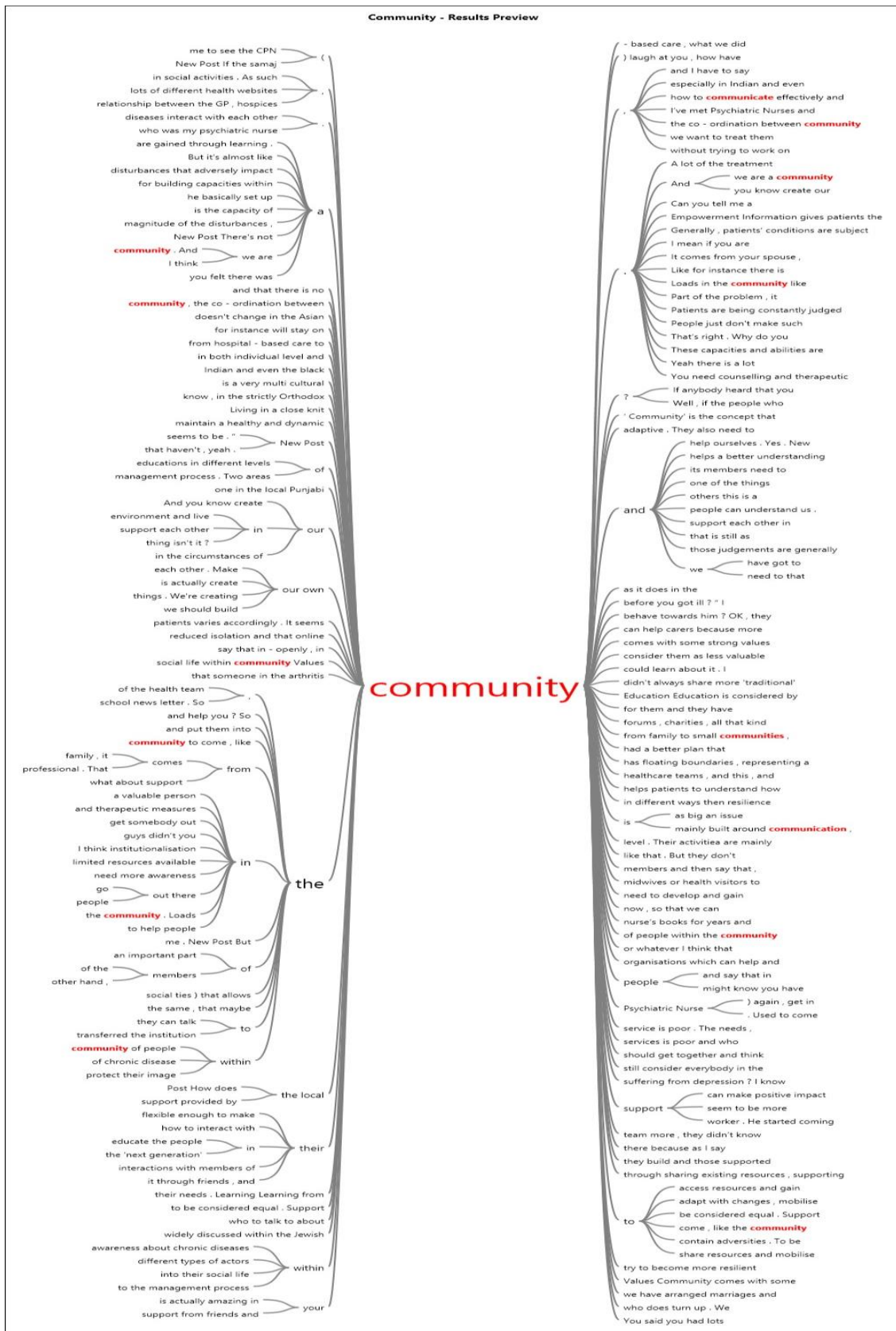


Figure 3.7 An example of Nvivo 10™ advanced analysis tools: words repetitions and potential relations

However, using Nvivo™ presented its own share of challenges. The major problem I noticed with this software was the way it framed my thinking and approach to analysis based on its structure and processes. Later I noticed this influence of software had decreased my tendency and the chance to see and analyse my data from different angles or alternative ways. I noticed this issue when I started doing manual coding - just for the sake of variation - and I then realised how different the analysis could be if I did not follow the steps and processing framework of Nvivo™.

As such, in some instances when I came across important or interesting codes in Nvivo™, I also tried to explore or regenerate those codes through a manual coding process. Sometimes, this alternative approach to coding could sharpen my understanding of the emerging concept by adding a new dimension to the findings.

3.9 Chapter Summary

I started this chapter by linking the purpose and conceptual foundation of this study to the broader landscape of qualitative research. By positioning myself within specific philosophical view, I showed how the design and practical aspects of this study has enabled me to move in the direction that was consistent with the purpose of the study and fruitful to the primary research question.

A principal purpose of the material presented in this chapter was to show the rigour of this qualitative study. As such this chapter provides answer to two major questions: *'how the study was conducted?'* and *'how the evidence was obtained?'*

For clearly answering these questions, I highlighted the strengths of the design and methods that were employed for collecting and analysing qualitative data in this study. I also showed how in the light of the research questions, different sources of data were used to generate meaningful evidence. Chapter 4, 5, and 6 provide detailed discussion about the nature and role of the generated evidence.

To summarise, Table 3.7 provides an overview of different methodological aspects of this study.

Table 3.7 An overview of the research methodology

<i>Research aspect/activity</i>	<i>Position</i>	<i>Reference</i>
Philosophical perspective	Weak constructivist	Orlikowski (1991)
Research strategy	Embedded case study	Eisenhardt (1989) Yin (2014)
Analysis approach	Hermeneutics	Klein and Myers (1999)
Research method	Adapted grounded theory	Lings and Lundell (2005)
Research design goals	Exploration, theorisation, and corroboration	Dey (1993) Urquhart (2013)
Data collection strategy	Collaborative relationship with peak organisations, Opportunistic approach to social media	Morse (2006) Vaast and Walsham (2013)
Data collection methods	Focus group, social media sources, semi-structured interview	Kamberelis and Dimitriadis (2011) Vaast and Walsham (2013) Myers and Newman (2007)
Data analysis approach	Three stages of open, selective, and theoretical coding	Glaser and Strauss (1967) Urquhart (2013)
Theoretical lens	Sociomateriality	Orlikowski (2007)

4 EMERGENCE OF AFFORDANCES OF SOCIAL MEDIA

4.1 Introduction

The three major research themes that emerged from the data analysis process were *Affordances of Social Media*, *Community Resilience*, and *Social Media Constraints*.

This chapter presents findings concerning the first theme, *Affordances of Social Media*. The other two major themes of *Community Resilience* and *Social Media Constraints* are presented in Chapter 5 and Chapter 6 respectively.

Broadly speaking, the presented findings within these three chapters bring to the fore the perspectives of participants about the influences of social media on the dynamics of the social process of chronic care management.

The interpretation of these perspectives is influenced by a number of factors and assumptions. First, these perspectives are interpreted in the light of the broader research problem and the objectives of this study. Second, the process of chronic care management is seen and recognised as a community of actors who work together and interact with each other toward the objectives of the management process. Third, social media were seen as emerging actors in the (modern) process of chronic care management.

These assumptions, in company with the research objectives, provided a direction for the interpretation of the obtained qualitative data and informed a purposeful categorisation of the findings. Such a direction has led to a detailed exploration of new concepts that were in harmony with the objectives of the study and fruitful to the research questions.

For the convenience of the reader, a consistent format is adopted throughout, which is based on the level of conceptualisation of the findings. Open codes are presented in *italics* and when they form subcategories, this new level of conceptualisation is presented in ***bold-italic***. Categories are **bolded** while themes are presented in a

different *bolded-italic font*. This format of presenting the findings is also consistently adopted within the next two chapters.

4.2 Affordances of Social Media Theme

The theme of *Affordances of Social Media* is presented in this chapter. This theme represents the major features that are identified by the participants as the potential capabilities of social media in supporting the process of chronic care management.

The main categories and their constituent subcategories that underpin this theme are shown in Figure 4.1. These categories represent a number of potential capabilities (affordances) that range from **Building a Sense of Community**, gaining **Emotional Support**, and **Empowerment**, to the issues concerned with the use of information and **Knowledge Co-Creation**.

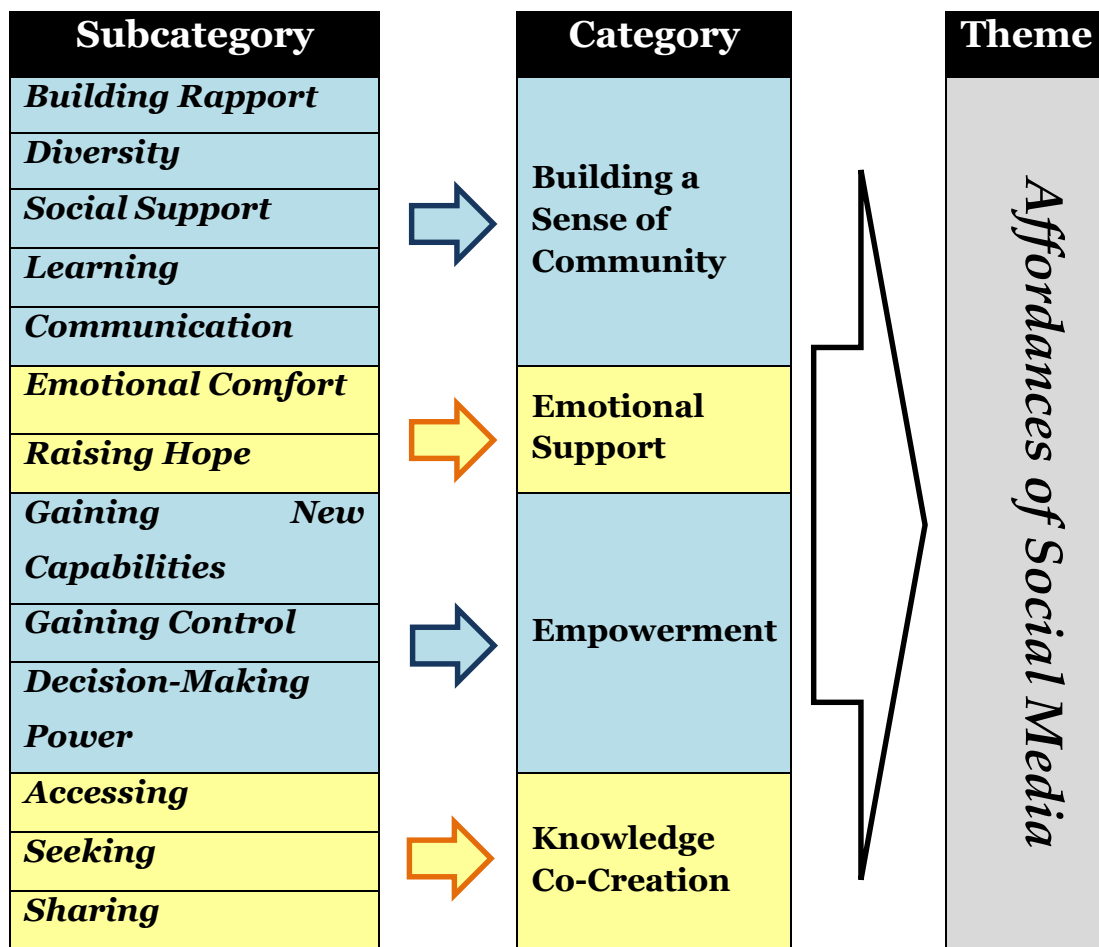


Figure 4.1 An overview of the development of the affordances of social media theme

4.2.1 Chain of Evidence

Table 4.1 presents an overview of the chain of evidence (with reference to Table 3.6) that led to the emergence of the *Affordances of Social Media* theme.

Table 4.1 An overview of chain of evidence: linking data sources to the emergent theme of affordances of social media

		<i>Affordances of Social Media</i>			
		Building a Sense of Community	Emotional Support	Empowerment	Knowledge Co-Creation
Data Sources	Focus Group	S1_1	S1_1	S1_1	S1_1
	Online Forums	S1_2, S1_3, S2_1, S2_2, S4_1, S4_2, S5_1, S5_2	S1_2, S1_3, S2_1, S2_2, S3_1, S4_1, S4_2	S1_2, S1_3, S2_1, S2_2, S4_1, S4_2, S4_3	S1_2, S1_3, S2_1, S2_2, S4_1, S4_2
	Interviews	S6_1, S6_4, S6_5, S6_6	S6_1, S6_2, S6_5, S6_6	S6_1, S6_3, S6_4, S6_5, S6_6	S6_1, S6_4, S6_5, S6_6

4.2.2 Building a Sense of Community

The first key category of the *Affordances of Social Media* is the **Building a Sense of Community**. This category illustrates the means that social media supports the creation of a sense of community among patients and carers as they interact with each other during the management process. The six subcategories that underpin the main category of **Building a Sense of Community** are *Building Rapport*, *Diversity*, *Social Support*, *Learning*, and *Communication*.

Figure 4.2 shows the analytical development of the **Building a Sense of Community** category.

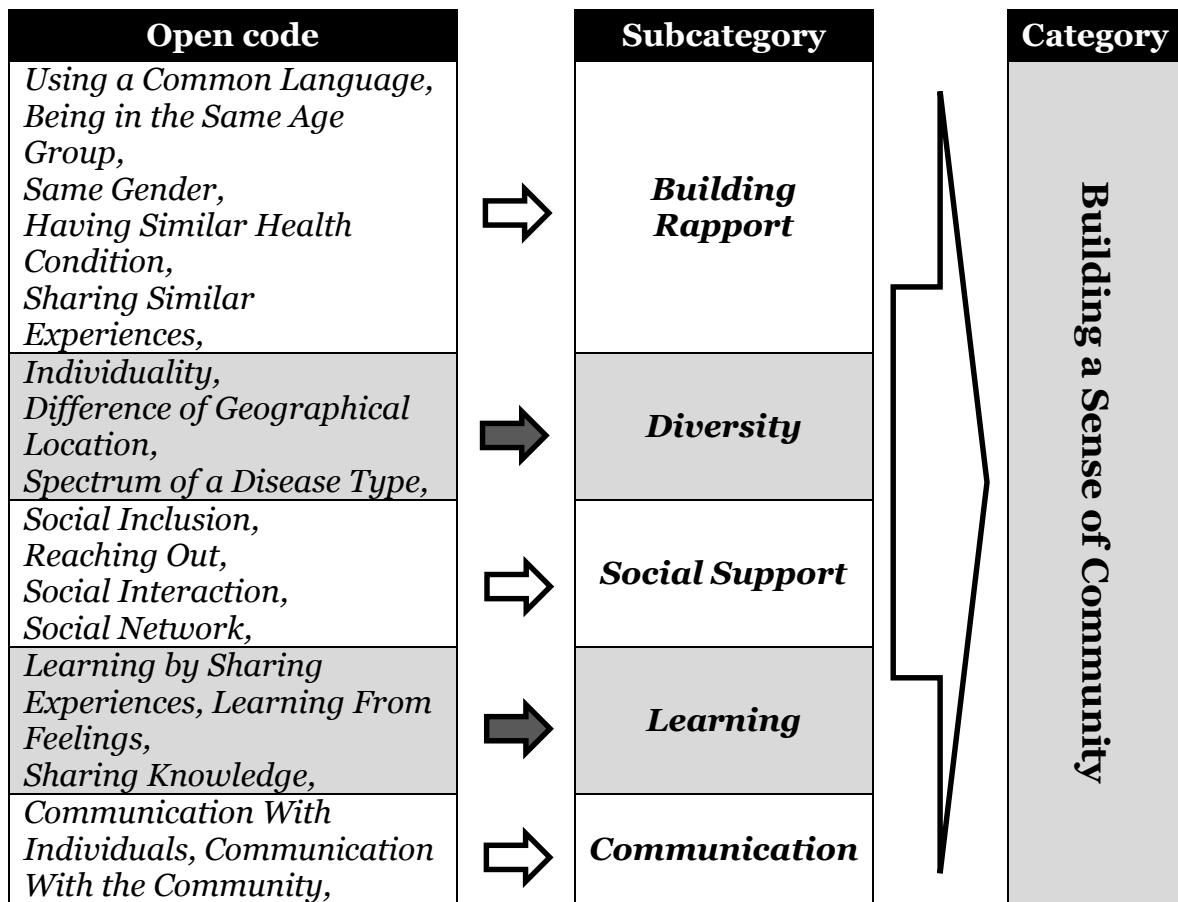


Figure 4.2 The analytical development of the building a sense of community category

4.2.2.1 Building Rapport

The subcategory of **Building Rapport** encapsulates the participants' views with regard to *common language, same age groups, same gender, similar health conditions, and sharing similar experiences*. This subcategory illustrates how social media can assist patients and carers to build rapport. This is particularly an important *affordance of social media* as many of the patients, caregivers, and practitioners have to be closely engaged in different aspects of the management process.

The findings show that creating and *using a common language* to communicate over social media is one of the effective strategies used by these actors to **Build Rapport**. As evidenced in the following excerpt, this strategy helps them to have a better understanding of the issues concerned with the management process:

“So, you get to the end of the day and you have got no spoons or might have to borrow from the next day, or you can’t go out that night because you have got no spoons left. So, we kind of dumbed it down with spoons and made up our own way of talking about it. So, if now someone says on Facebook that I have got no spoons, we will understand what she means” (Source: S1_1)

Being in the same age group was another main point raised by the participants for **Building Rapport**. Many of the comments from the participants highlighted how *being in the same age group* had helped them to get a better understanding of the problems of the management process and gain more positive feelings toward their participation in online forums. For example, as presented in the following excerpt, one of the patients with arthritis explained how interacting with patients who were *in the same age group* had helped her to **build a rapport** with them:

“I am thrilled that so many amazing people are on this [Facebook] page. I have been looking for support groups for younger people like myself (30). It’s so hard for other people in different age groups to really understand what my problems are and how I feel every day.” (Source: S1_2)

Many of the participants also gave emphasis to the importance of age as a factor that helped them to support each other effectively, as evidenced in the mission statement of one of the online support groups on Facebook:

“[The group name] encourages young women with arthritis to join our friendly support group. We aim to increase opportunities for our members to access information on their condition and troubleshoot problems mostly affecting young women with musculoskeletal conditions.” (Source: S1_2)

The participants also repeatedly mentioned *gender* as another important issue that had impacts on the sense connections between them, especially in virtual environments. For example, this point was underlined by a young female patient who was a member of an online support group. She explained the value of online support

groups and expressed her contentment of using social media where women were the major participants there:

“It helps in many ways, especially the forum, because you read about other ladies and you can get into communication with women that are feeling the same things as- you know- you're feeling as a woman” (Source: S1_1)

The role of gender was also mentioned by other participants who were not the member of the online forums. One of the practitioners, who was giving consultation to arthritis patients, explained her positive impression of an online support group for women:

“There is an arthritis support group and I know. They are very active and supportive and I think they are using blogs and Facebook to communicate. I always suggest my patients to go there. Well! not to all of them (laughs)! Apparently, it is a successful group because all the members there are committed women” (Source: S6_4)

It was also in the findings that some of the participants believed that connections between people in social media were strongly attributed to the fact that they had common issues relating to similar health conditions. A practitioner explained that because she had the same chronic condition as the consumers of her support organisation, she was able to create a strong connection and bonds with their consumers:

“I cannot tell you how many times people said it is so good that you are on staff here because you got it and you know what it is like. So, I think because a lot of us in [the name of the organisation] have it, our consumers trust in what we put on our Facebook or post on our Twitter and they feel confident with the information that we impart” (Source: S6_1)

Other participants also expressed similar view on the impact of having *similar health condition* on the ways emotional connections are formed through social media. A patient with diabetes explains how her health condition had connected her to the other patients who were in a diabetics patients' forum:

“I go on a few forums, like discussion forums, and I want to know more about people with the similar condition. I think on one of the forums more or less everybody had recently been diagnosed with diabetes so it was kind of we were all dealing with same problems and it was like feeling the same thing together rather than being at different stages of it” (Source: S2_1)

Some of the participants also believed that effective contribution in online forums entails strong understandings of the *health conditions* of the other people who participate in those forums. A caregiver expressed her sense of irritation of the presence of practitioners in an online forum as she believed there is no connection between the carers and practitioners there:

“Doctors and nurses can't tell you too much on there [support online forum], because the doctors haven't got too much experience of it [caring of a patient with juvenile arthritis], unless they have a disabled child themselves” (Source: S1_3)

While sharing a *similar health condition* seemed to play a strong role in creating emotional bonds between the actors who used social media for communication, participants also highlighted many times how using social media were useful for *sharing similar experiences*. Typical of the comments made by patients and caregivers include:

“You get to know people that have gone through the same kind of thing, the same experiences and they tend to be the people that you can relate more to because of the similar difficulties that they have” (Source: S4_2)

And

“[...] it was a big relief, to feel that maybe it wasn't just my joints being that messed up, and you know, that other people had experienced similar things and had got better. You read their stories and then try to relate to what they had gone through” (Source: S3_1)

The presented evidence from the findings about building rapport show how the use of social media can support the development of connections and bonds between the actors involved in chronic care management. They also showed how such connections could influence the management of their conditions. As it is evident in the findings, the emergence of such rapport is interwoven with the actors' development of a deeper understanding of each other's expectations and needs.

4.2.2.2 Diversity

The selective code of **Diversity** illustrates the means by which social media support the engagement of diverse groups of actors in the process of chronic care management. The findings show that many of the participants identified *individuality* of the actors as a representation of **diversity** in the management process. The open code of *individuality* is an In Vivo code as it was suggested by a number of participants. For instance, *individuality* was brought out by a patient with arthritis when she was asked how she was making sense of the different opinions posted on their support group on a Facebook page. She acknowledged the significance of *individuality* by expressing her view in this way:

“And it’s so difficult to listen to everyone on that page [on the support group Facebook page] because it’s so individual. It’s such an individual thing. You know! We are all different people. Just have the knowledge that there is no right or wrong way to do it and as a person, either you are a patient or not, you should do the best you can within the capacity that you’ve got” (Source: S1_2)

Interaction with people from *different geographical regions* through social media was also repeatedly mentioned by the participants as a dimension of **Diversity** in the management of chronic disease. As evidenced in the following excerpt, social media allowed the patients and other actors to get access to the perspectives of people who live in different geographical locations:

“When you talk to different people, somebody in the far north or in America or Europe who has got the same condition, although they might sound or present differently but they have got the same condition and you can relate to them straight away” (Source: S2_1)

Some of the participants also commented on **Diversity** by associating it with the *spectrum of a disease type*. As participants argued, although many patients can be labelled under similar disease types, each disease is a spectrum of conditions that distinguishes patients based on their symptoms, abilities, and the care they require. Therefore, the impact of social media varied across a spectrum. This point was underscored by a diabetic patient:

“I found quite a lot of help with just communicating [on the forum] with other diabetic people and we are all different because it is a spectrum. We have something in common, but the details could be very different” (Source: S2_1)

The presented findings in this section have highlighted how social media can support understanding and maintain the **Diversity** of the actors (i.e. patients and carers) involved in the management of chronic disease. The findings shows that social media can support this aspect of chronic care management through supporting the *individuality* of the diverse actors, facilitating the interaction between actors who are located in *diverse geographical locations*, and by supporting the interaction between patients within different *spectrums of chronic disease*.

4.2.2.3 Social Support (In Vivo code)

The subcategory of **Social Support** encapsulates the participants’ views regarding their experiences of using social media to support patients and carers. *Social inclusion* was mentioned repeatedly by the participants as an important *affordance of social media* in the management of chronic disease. In many instances, the participants pointed to the issue of social isolation as one of the major challenges of patients and carers, and many of them argued that social media can help to address this issue. In this regard, the following two quotes are presented as evidence. The first one is an excerpt from an interview with a patient with rheumatoid arthritis (RA) – a condition with serious implications for the mobility and physical abilities of patients that may lead to some social isolation. The second evidence is taken from an interview with a carer who gave care to a patient with an advanced RA. Both evidences explain the perspectives of these two actors on how social media can support *social inclusion*:

“I mean, if you have a look into some of these forum sort of things, people are just talking about ordinary, everyday sort

of things, like things in their back garden, you know, flowers and stuff and I suppose, for some isolated and lonely people, that it opens up a new world to them” (Source: S1_1)

And,

“So you can just feel a little bit more, like you are not alone, and you know there is a lot of support out there and there is a lot of people who actually understand what you are going through” (Source: S1_3)

Reaching out is another dimension of **social support** according to the participants' views. Many of the participants believed that it is important to expand the scope of support to the people who may be in need of special services or they may require specific information. They also commented on the important role that technology - and social media in particular - can play in *reaching out* to more patients and carers. For example, in an interview with one of the managers of a support organisation, she clearly explained how the use of social media helped that organisation to provide support to a wider group of patients and caregivers:

“We now have YouTube clips, webinars, and our Facebook, and we will have more social media presence which is great for us, because I think it means we will be able to access and support a whole different group of consumers whom we haven't been able to access so far” (Source: S6_1)

The participants also placed emphasis on *social interaction* as a significant factor for providing **social support** to patients, their families, and caregivers. They highlighted the potential role of social media in facilitating the interaction between the actors involved in the management process and how such interaction influences can support patients and carers in different social contexts. To give an example, when a caregiver was asked to explain her opinion about the possible role that social media could play in supporting her disabled husband with multiple chronic conditions, she explained her view as follows:

“Yeah, I mean, the Internet anyway is useful, you know, and being able to use things like Messenger or Facebook. Because

you know, obviously with [the name of the patient] not being able to speak now, his communication with family and friends only can be done via those technologies, so he can have live chats with people, send them messages, see their photos, and read what they say. It is really good that he is able to stay in touch with other people” (Source: S6_6)

The findings also revealed that *support networks* play an important role in providing **social support** to patients, their families, and caregivers. The participants also highlighted the supportive role of social media in facilitating the formation and expansion of *support networks* and also the ways social media can make *support networks* more accessible to the patients and carers. This *affordance of social media* sounded important as many of the participants commented on how the use of social media by the actors has augmented the impact of such *support networks* on the management process. As evidence from two of the participants, who explained their perspectives in relation to their *support networks*:

“The other good thing about the Internet is the fact that you meet, and especially for people, who are really disabled and can't get out, is that you can have a circle of friends and a network of people to support you. It is just nice to have that network” (Source: S1_2)

And,

“I don't think I could have come to terms with my problem, as I did, without the support and information that I got off the Internet and the people that I spoke to on the forum, the people who had been through the same problems. Now I have got a lot of friends on the Internet and you know, it is nice to have the support network from the Internet” (Source: S4_1)

In summary, as foregrounded in this section, the issues related to the subcategory of **social support** show that social media have the unique potential to play effective roles in providing **social support** to patients, their families, and caregivers. It was quite clear that participants believed that social media could have positive impact on

different aspects of **social support** in the management of chronic disease including support for *social inclusion*, facilitating an ability to *reach out* to more patients and carers, and supporting the emergence and operations of *support networks*.

4.2.2.4 Learning

The selective code (subcategory) of **Learning** represents the means by which social media supports the actors involved in the management process to learn from each other as they engage in chronic care management. **Learning** was one of the issues that was mentioned many times by the participants, and the findings show that social media can support **learning** in three ways: *learning through sharing experiences*, *learning through sharing feelings*, and *learning through sharing knowledge*. In regards to *learning by sharing experiences*, many of the participants believed that social media has a positive role in facilitating **learning** by providing convenient environments for people to share and talk about their experiences. This point was underlined by a diabetic patient who explains how social media enabled him to learn from the stories shared among patients:

“I’m on this Facebook site on the computer and there’s the Diabetes Association forum, like an application off the Facebook. And that’s very good because all people are doing is talking about their own experiences, and their families are also talking about their experiences. So you learn a lot just by reading people’s stories” (Source: S2_1)

Another important finding about **learning** was *learning by sharing feelings*. As many of the participants commented on this issue, it appeared to be the most challenging but important way of **learning**. This can be attributed to the challenging but valuable process of externalising internal feelings (Nonaka, 1990). Evidenced from an interview with a patient with arthritis, the patient highlighted the means that social media supported him and other participants in an online support group to learn from each other by talking about their feelings:

“I found quite often that I can respond to a woman in that position saying, “Yes I know exactly how your husband feels and I can actually tell you why he does that because that is what I feel now.” And I think that is where the forum is doing

a lot of good. You can go on there and tell people how you feel and give them the chance to learn from you” (Source: S1_2)

It was almost common across all participants’ views that social media are valuable sources of **learning** by facilitating *learning by knowledge sharing*. Typical of the comments made by the participants include:

“Some of the drugs I am on, so I want to see if other people had the same issues and how they dealt with them, just to make sure, you know, it’s all good. But yes, I actually found the Internet forums extremely helpful” (Source: S5_1)

And

“I think most people that go on the forum are extremely knowledgeable and well prepared to teach you what you’re going to experience. It’s more like a crash course about hip replacement (laugh!). They can tell you exactly whether it’s going to be painful, or whether it’s going to be quick, or how long the whole operation might take. And, I mean at that point in time I needed to learn about the procedure so I was logging on a few times a day. And I still now, after nine months, go on daily to check if I can share what I know with other people” (Source: S6_5)

In summary, the findings regarding the selective code of **learning** revealed a set of activities and processes by which patients and carers could learn from each other while they used social media. Based on the participants’ perspectives, in the context of chronic care management, there are three major dimensions to **learning** including, *learning by sharing experiences, learning by sharing feelings, and learning by sharing knowledge*.

4.2.2.5 Communication

The selective code (subcategory) of **communication** represents how social media support **communication** in the process of chronic care management. It encapsulates the participants’ perspectives concerned with issues related to the importance of **communication** at both the *individuals* and *community* level. The findings showed

that at the *individual* level, most **communications** were in the form of peer support interactions, and at the *community* level, **communications** were more concerned with creating mutual understandings and developing companionship. The findings also clearly showed that social media play strong roles in supporting **communication** at both levels. The notion of **communication** as peer support is evidenced from an interview with a patient when she was asked to comment on the value of online patient forums:

“Well! it gives you the opportunity to actually communicate with other patients about what they're using and how useful that is. So that's been invaluable as well, you know, it's people talking about it. It's not text book stuff. It's just people communicating their life experiences and how they've affected them” (Source: S6_5)

Communication was also underlined by the participants as an important aspect of the management process for creating connections between the actors. The role of communication technology, specifically social media, was highlighted in the following excerpt from an interview with a patient with arthritis. She explains her view about the importance of **communication** and the impact that social media have on facilitating **communication** with the wider *community*:

“Communication is absolutely the key, you know, communication between yourselves as a family, as a, you know, as a couple, just every single bit of communication is so important and good communication, actually, makes the journey much easier. So, keep the channels of communication open with friends and family and with the people you know. If you can't communicate the way that we normally do it, do it another way. You know, there's Facebook, there's Twitter and there are other amazing stuff out there that has made it much easier for us to communicate with other people” (Source: S6_5)

In summary, the subcategory of **communication** highlighted the effectiveness of social media connecting the actors at different levels of *individuals* and *community*.

4.2.2.6 Important Findings Related to Building a Sense of Community Category

Building a Sense of Community underlines a notable *affordance of social media* in the process of chronic care management. The importance of the findings in this subsection is twofold. First, they represent a set of characteristics that are specific to online communities of patients and carers that emerge around chronic care management process. This is significant as the concept of community and its attributes are strongly bound to the context within which a community exists. As such, it is important to delineate the characteristic of communities in order to understand how they function and interact with their environment. The significance of such characteristics will be further discussed in Chapter 7.

The findings related to this category, i.e. **Building a Sense of Community**, are also important as they show how social media can support a community of patients and carers to ***Building Rapport***, supporting ***Diversity***, facilitating ***Social Support***, augmenting ***Learning***, and supporting effective ***Communication***.

4.2.3 Emotional Support

Emotional Support is also a main category of the *Affordances of Social Media* theme. The two constituent selective codes of this category are ***emotional comfort*** and ***raising hopes***.

The category of **Emotional Support** illustrates how social media can help patients and carers to get emotional support as they use social media for management purposes. It captures the participants' views regarding the ways that social media can provide ***emotional comfort*** by being a *source of comfort* and a means of showing *sympathy* to patients and carers. Also, social media were seen: as a source of ***emotional comfort*** for patients and carers by enabling them *to give vent to their feelings*, and also being a place that they can experience *tranquillity* and *equity*.

The category of **Emotional Support** also represents how social media can assist the actors to ***raise hope*** while they interact with the other actors. It encapsulates the participants' perspective regarding the methods used by the actors through social media including *encouragement*, *giving hope*, *positive benevolence*, and *sharing*

positive experiences to give emotional support to the other patients and caregivers.

Figure 4.3 shows the analytical development of the **Emotional Support** category.

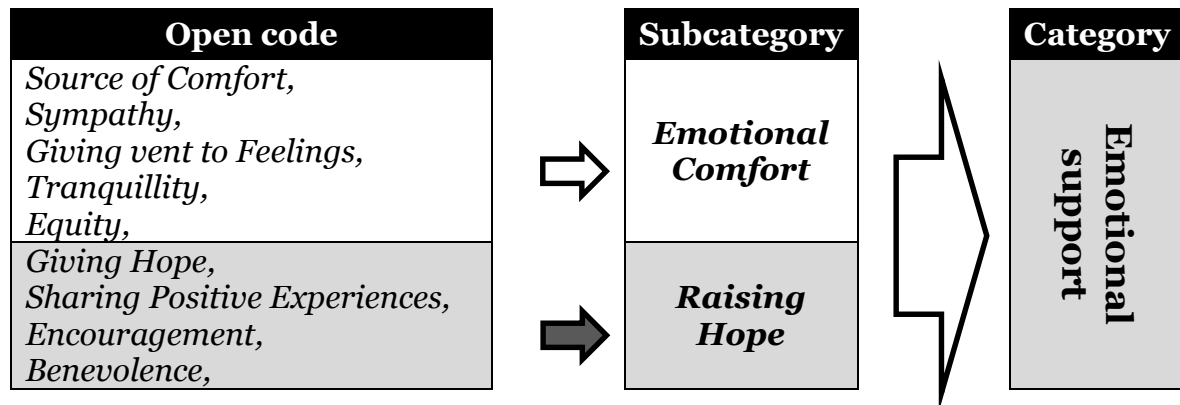


Figure 4.3 The analytical development of the emotional support category

4.2.3.1 Emotional Comfort

The selective code of **emotional comfort** represents how social media can be used as a means of gaining emotional comfort by patients and carers. This code captures the participants' views regarding the issues of social media as a *source of comfort*, as a place to attract and show *sympathy*, and a way for *giving vent to unpleasant feelings* and frustrations, and experiencing *tranquillity* and *equity*.

The findings show that many of the participants found social media as a *source of comfort*. This aspect of social media was more evident when patients and caregivers were interviewed and asked about the reasons of why they may use social media. In the following excerpt, a patient with arthritis explains why she thinks that online patient forums that she went on were a *source of comfort*.

“You know, just the feeling that you aren't alone was a great source of comfort and to find that in fact you weren't the only person to feel like that” (Source: S1_2)

Also, the social media as a *source of comfort* was clearly mentioned by a carer of a patient with advanced arthritis. She expressed her impression of an online support group after she joined the group on Facebook:

“It's been more of a source of comfort actually than a lot of the other resources which I found on the Internet” (Source: S6_6)

These excerpts show that the open code of ‘*source of comfort*’ is an In Vivo code.

The findings also show that expressing *sympathy* was another dimension of ***emotional comfort***. Based on the participants’ views, this *affordance of social media* was a very attractive aspect of these technologies to many of the patients and caregivers as other people could express their sympathies via social media. A carer of a patient with multiple chronic conditions expressed her view on how social media could help her to get ***emotional comfort*** by seeing how other people show *sympathy* for her:

“When I feel I want some sympathy and want to talk to somebody who understands exactly what is happening, I will be very tempted to go on the forum and talk to people there”
(Source: S6_6)

A similar view was also mentioned repeatedly by the patients who found social media a supportive environment to get ***emotional comfort***. This view is highlighted in the following excerpt as a patient explained her reasons for participating in an online support group on Facebook:

“I sometimes find it quiet relieving to actually go there and talk to people who are able to show some understanding and when you feel down offer you some tea and sympathy”
(Source: S2_1)

Also, in a conversation on a Facebook support group, a patient with arthritis showed her *sympathy* to another patient by expressing her feelings in this way:

“I think my body is flaring in sympathy with yours” (Source: S1_2)

The finding also revealed that the concept of *vent* (In Vivo) was frequently mentioned by the participants to show how the use of social media has helped them to feel ***emotionally comfortable***. The following excerpt presents a carers point of view on how a carer believed that social media can help *to give vent* to her bad feelings:

“When people use a forum that, you know, they really vent their personal grief, and angst. And that's what it's, of course what it's there for” (Source: S4_2)

Also, the following excerpts provide further evidence on how social media is used by patients and carers to *give vent* to their frustrations and negative feelings. Some of the typical comments and interactions between patients in their online forums are as follow:

“Thanks for allowing me to vent. Today has been tough and very depressing” (Source: S2_1)

And

“I think that makes sense with the combo mix, I will mention it to him. It's so frustrating to be in so much pain when we're on all these drugs” (Source: S3_1)

And

“It is very frustrating [name of another patient]! Yes [name of another patient] they were and yes they had some kind of arthritis (I didn't want to pry on my first class, I will next week). It annoyed me a lot” (Source: S1_2)

And

“Very depressed and in a lot of pain and extremely fatigued sitting on the couch for the day. I've got friends coming who said that they will rally around me and help out. Got the tissues, a blanky, PJs and coffee” (Source: S2_1)

Many of the participants also put emphasis on the importance of *equity* in accessing resources necessary for management purposes. The findings show that social media provide environments where patients and carers have equal opportunity to access different kinds of information resources. This point was highlighted by a board member of a support organisation as she explained why it was important for their support organisation to communicate with their consumers via social media:

“I think that in the past it had been inequitable. As a state wide service we hadn’t been able to properly get in touch with our consumers and get information out to the whole of the state. I think this is our responsibility and we are doing it now much better by keeping our Facebook and Twitter up to date” (Source: S6_1)

Tranquility was also in the evidence. Many of the participants commented on how the virtuality of social media had assisted them to harness their emotions and feel calm. The participants also commented on how their face-to-face interactions with other people in the non-virtual support groups could create unwanted emotional stresses for them. Many of the participants argued that social media helped them to control their interactions with other participants, becoming less exposed to stressful situations. These points are evidenced in the following excerpt from an interview with a patient with arthritis:

“Well I’m personally scared that if I met up with someone face-to-face and we started meeting up then if they needed to become reliant on me I wouldn’t be strong enough for that. But talking with people on the forum, and I can see how things are shaping, so I can decide what is the best move before I get too much involved” (Source: S6_5)

The presented findings in this section show that **emotional comfort** is a dimension of **emotional support** in the management of chronic disease. The findings also revealed that social media supports **emotional comfort** by helping the actors to show their care and *sympathy* toward patients and carers. The findings also brought to the fore how social media can be *a source of comfort*, a way for them to feel *equity* and *tranquillity*, and an environment that helps them to *give vent to their feelings* and frustrations.

4.2.3.2 Raising Hope

The selective code of **raising hope** illustrates how social media may support patients, carers, and families to raise hopes as they engage in chronic care management activities. The subcategory of **raising hope** encapsulates the participants’ views

regarding the issues of *giving hope*, *sharing positive experiences*, *encouragement*, and *benevolence* and how social media can support **raising hope** through them.

Giving hope was mentioned many times by the participants as an important aspect of the management of chronic disease. The participants highlighted how the use of social media had impact on this aspect of the management process and assisted patients and carers to **raise hope** by engaging in support networks. This view is evidenced when a carer of a patient with arthritis explained her view on the impact of online support groups:

“And it is just nice and helpful to have a support network that people there can give you a bit of assurance and hope”

(Source: S6_6)

The above view was later expressed in a similar way by an arthritis patient who had been participating in an online support group since from the very beginning when she was diagnosed with her condition:

“Sometimes I just read people’s stories to see how it went all the way until year three or year four and they still beat it”

(Source: S1_1)

This aspect of using social media was also mentioned by a manager of a support organisation who was keen to provide their consumers with relevant and up-to-date information. As evidenced here, her post on their organisational Facebook page shows how social media is used for *giving hope* to patients:

“I am hearing fairly encouraging things recently about a new treatment of fibromyalgia in the US. It is great news and sounds like a breakthrough” (Source: S6_1)

Many of the participants also commented on the significance of learning about other people’s success stories and positive experiences. They commented on how such knowledge helped patients and carers to stay positive and hopeful about the future and also underlined how social media supported them to access and *share positive experiences*. As documented, a patient with diabetes explained her view on how social

media assisted her to learn about other people's success stories and what its impact was:

"I'd like to talk to people who are honest and can answer your questions, and who can say, "Actually I've been through this, but my results have come back and I'm fine." That's a very assuring thing to hear" (Source: S2_1)

This perspective was also elaborated by a patient with rheumatoid arthritis who had recently gone through major operations on her joints. She expressed her view on the impact of social media by highlighting how learning about other people's experiences influenced her emotions:

"Perhaps one of the best moments was when someone wrote how the person who couldn't get from the kitchen to the bathroom without a cane finally overcame it" (Source: S1_2)

The findings also show that social media were widely used by actors to *encourage* patients and carers to stay positive in order to improve their moral and spiritual condition. This *affordance of social media* is evident in the following passage taken from an interview with a carer who explained her experience with an online support group:

"There was a lot of patting on the back trying to lift your ego"
(Source: S6_6)

Also, the following text is part of a conversation between two patients (patient A and patient B) on their support group Facebook page. This is the message that patient B sent to patient A when patient A uploaded a photo on that page:

Patient B: "When I saw your photo, I said Haba Haba! You looked amazing in that purple dress. Just two weeks after the operation? Unbelievable! You are doing so great" (Source: S1_2)

Also, the following excerpts present some of the typical comments and interactions between patients on their Facebook page, as evidenced here:

“Good luck with the finalisation of your diagnosis [name]. Don't be frightened of the process. Don't be nervous trying any of it....and if you are, post your concerns here, you're sure to get feedback” (Source: S1_2)

And

“Sounds like you have been jumping up and down with pred a lot recently. That can't be helping. It's a bugger of a drug. Don't worry about your weight - your mental wellbeing and life is much more important” (Source: S2_1)

Many of the participants also commented that they found the *benevolence* of other people on social media as an important factor for them to feel that they were being treated with kindness and respect, and that in turn had encouraged them to participate in the online discussions. The parent of a disable child with severe juvenile arthritis conditions explained her experiences of interacting with people in an online support forum, in this way:

“And, yes, there were quite a lot of parents chatting on that forum, and I found it quite friendly. Obviously there were quite a lot of parents looking after young people with disability and I found it a good resource, a friendly place to go and just have a little chat, really. It seemed quite nice” (Source: S1_3)

A patient who was diagnosed with diabetes a few years ago just recently started using social media to communicate with other patients. She expressed her impression of other participants' *benevolence* in an online support groups as an encouraging factor for her to come back to the forum:

“I read some of the things that other patients put on there [a forum for diabetics] and also watched some of the footages. Everyone sounded really supportive and friendly there. So, I felt very comfortable to post a message and say hey! This is my problem, please help! And everyone just, people would

reply back to you straight away. And it was all really lovely”

(Source: S2_1)

In summary, the findings discussed in this section revealed that **raising hope** is an important aspect of **emotional support** in chronic care management. The findings also showed that social media can support **raising hope** through *giving hopes, sharing positive experiences, encouragement, and benevolence*.

4.2.3.3 Important Findings Related to the Emotional Support Category

A number of key findings were presented in this section. First, social media help patients and carers find **emotional comfort** by learning about the stories of other people who are in similar conditions. This helps them to feel that social media is a *sources of comfort* for them since they are not the only people who have to deal with the difficulties and uncertainties of the management of chronic disease. They also find social media as a place where they can find other’s *sympathy, equity, and tranquillity*, and can *give vent* to their frustrations.

The other key finding of the main category of **emotional support** is concerned with the **raising of hope** and the ways social media supports the actors to *give hope* to patients and caregivers. The findings also show that social media mainly supports the activities of *giving hope, sharing positive experiences, benevolence, and encouragement* that helps to **raise hope** among patients and caregivers.

These are important findings as they show a unique and novel *affordance of social media* in chronic care management. The findings in this sub-section represent a potential expansion of the capabilities and influences of these technologies that goes beyond their conventional and regular application.

4.2.4 Empowerment

The other main category constituting the theme of *Affordances of Social Media* is **Empowerment**. It has three subcategories of **gaining new capabilities, making informed decisions, and gaining control**.

The category of **Empowerment** represents how the use of social media can empower the actors involved in chronic care management. It captures the participants’ views regarding the issues of *accessing new resources, accessing different perspectives,*

reaching out to more people, and overcoming communication barriers. These perspectives represent the roles that social media can play in helping patients and carers to **gain new capabilities** as they work toward the better management of chronic disease.

The category of **Empowerment** also foregrounds issues concerned with *negotiating healthcare decisions, understanding different aspects of chronic conditions, and making knowledge driven decisions* as important factors of **decision-making power** in chronic care management. This subcategory also illustrates how the use of social media supports patients and carers to make informed decisions related to the management process.

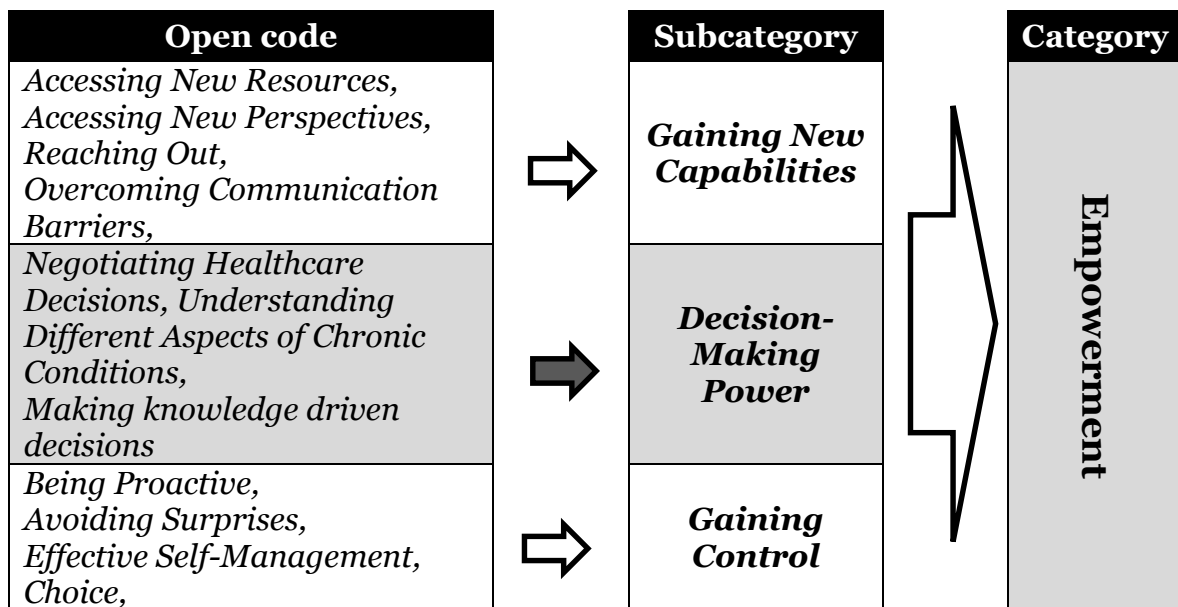


Figure 4.4 The analytical development of the empowerment category

The category of **Empowerment** also encapsulates participants' views about the *Affordances of Social Media* on assisting patients and carers to **gain control** over the complications of chronic disease through the management process. *Being proactive, avoiding surprises, developing effective self-management capacity, and having choices* were the main *Affordances of Social Media* identified by the participants. Figure 4.4 shows the analytical development of the **Empowerment** category.

4.2.4.1 Gaining New Capabilities

The selective code of ***gaining new capabilities*** elucidates how social media provided patients and carers with new management capabilities. One of the sources of the new capabilities mentioned frequently by the participants was *accessing new resources*. Many of the participants highlighted that social media have enabled them to access resources that wouldn't be possible to access without using social media. This point was accentuated in an interview with one of the managers of a support organisation when she was asked about the significance of social media to her organisation:

“Social media and the use of the web have opened up a whole lot of different avenues and new resources for us” (Source: S6_1)

The significance of social media in assisting patients to *access new resources* was also mentioned many times by the participants. In the following excerpt, a patient with diabetes underscores how chat rooms, as a feature of social media, were used as a vehicle for accessing new resources:

“Those are the people I want to talk to and I don't think you can find them any other way but in the chat rooms” (Source: S2_1)

The participants also mentioned how social media enabled them to *access new perspectives* and opinions. The findings revealed that social media played a considerable role in enabling the participants to expand the boundaries of their interactions and take advantage of the wide ranges of new perspectives about different aspects of the management of their conditions. The following quote from a carer provides evidence to show how social media allowed her to get *access to new perspectives* as she was seeking new opinions:

“So I've got in touch with other people shamelessly, hunted down associations and societies and groups and asked for their opinions” (Source: S4_2)

This impact of social media was also accentuated by a patient with arthritis. The patient explained his view on how social media enabled him to *access different opinions* and he could identify a stream of reliable perspectives by triangulating them:

“And really what I was trying to do when I went on those forums, was to triangulate different opinions and place slightly greater reliance on streams of opinions where they were all saying the same things and they appeared to have good evidence on their side when they were saying it”

(Source: S1_2)

The findings also showed that the capability of *reaching out* to more people is supported by the use of social media. This capability was mentioned repeatedly by the patients and particularly by the practitioners who wanted to provide their services and support to a wider range of people in need of their services. As evidence here, a patient with diabetes expressed his perspective on how social media supported him to access a wider group of people:

“I have Facebook on my mobile phone and it basically gives you the ability to reach out anywhere in the world, as long as someone has got the Internet connection” (Source: S2_1)

This point was also made noticeable by a specialist when she was asked about the role of social media in supporting medical services for patients with chronic disease:

“I know some of my colleagues are using Skype or other social media to do distance consultation with patients from the country and remote areas, and I think that is fantastic”

(Source: S6_4)

The significant role of social media in enabling practitioners to *reach out* to more patients and carers was also evident in an interview with a senior manager of a support organisation of patients with arthritis:

“It is crucial for us to have a social media strategy. What it will enable us to do is to have a far greater reach in the state so we can actually get more information and services out into the regional areas” (Source: S6_1)

Another capability mentioned by the participants on the impact of social media was the ability to *overcome communication barriers*. The findings showed that social media supported many aspects of communication between the actors involved in the management of chronic disease and enabled them to address many of the issues concerned with communication. A carer explained this *affordance of social media* by highlighting how the patient under her care was using social media to bridge his communication difficulties, as evidenced here:

“You know, Mike is not able to speak anymore, and he has got only limited capacity to move his hands but still he can communicate with our children and friends through Facebook which is great for him, you know, he still can send and receive messages” (Source: S2_2)

The effectiveness of social media in enabling patients and carers to *overcome communication barriers* was also evident in an interview with a manager of a support organisation. As the following excerpt shows, she expressed her perspective on this capability by underlining how social media enabled her organisation to *overcome communication barriers* and provide its consumers with more relevant information:

“To be a state wide body it is essential for us to use social media and have an online presence. I cannot afford to send my staff to Mildura every week and do updates for people. So, it is the only way that enables us to communicate with our consumers in regional Victoria and be relevant to them I think” (Source: S6_1)

The presented findings in this section focus on how social media can support patients and carers to ***gain new capabilities*** while they manage their own condition or someone’s under their care. The findings in this section show that many of these capabilities are attributed to how social media is perceived and used by the actors, in particular by the patients and carers. The highlighted capabilities gained and supported by the use of social media were *accessing new resources; accessing new perspectives and opinions; reaching out to more people; and overcoming communication barriers*.

4.2.4.2 Decision-Making Power

Generally, in the management of chronic disease, resources and services available to patients and carers are limited or even scarce and they need to make the best possible and efficient decisions. The subcategory of **decision-making power** illustrates how social media supports such decisions. Many of these decisions are crucial to the management process as resources and services can have direct or indirect impact on the health of the patients and outcomes of the management process.

Therefore, having relevant and correct information is critical to many of the negotiations and decisions related to the management process. The findings of the study revealed that the use of social media in the management of chronic disease gives certain capabilities to the patients and carers to negotiate different aspects of the management process and decide on the best possible options. These capabilities are mainly manifested in *negotiating healthcare decisions, understanding different aspects of chronic conditions, and making knowledge driven decisions.*

The findings of this study show that the participants commented frequently on the role of social media in enabling them to *negotiate decisions* with service providers and healthcare professionals. This point was remarked by a patient with arthritis as she explained her view on how the information she got from social media helped her to discuss and negotiate her treatment decisions with her doctor:

“So, next time you see your doctor you can tell the doctor this is a piece of information I am giving you to tell me if this is useful or not .Is this relevant? Is this something that could help my diagnosis? Does this sound like the right path that could help?” (Source: S6_5)

Also, the impact of social media on patients and carers’ **decision-making power** was mentioned by a general practitioner when he was asked how social media can influence the relationship between patients and providers. He expressed his perspective by putting emphasis on how social media could help patients to **gain decision-making power** by gaining a better understanding of the healthcare system:

“Well they can probably improve their relationships with their health providers by negotiating the health system and getting actively involved in important decisions” (Source: S6_3)

This point was also underlined by a specialist when she was asked how the new ways of communication through social media may assist patients with chronic disease. As evidenced, her perspective clearly shows the capabilities brought to the patients by social media to negotiate health related decisions:

“Social media help them [patients] to experience the healthcare system by learning from their friends or their support community and of course they can also learn it through personal experience. You know, having to learn about the decisions made in the healthcare system and experience it again and again, they develop some sense of what it is about and how to negotiate it”

(Source: S6_4)

Many of the participants also commented on how social media assisted them to have *a better understanding of their conditions* and accordingly make better decisions. They gave prominence to how social media helped them to gain more knowledge about their disease and issues pertaining to the management of their condition and as a result, how they felt empowered in making decisions. The following excerpt provides evidence, as a patient highlighted this point:

“After a few weeks being on the forum and talking to other patients I felt empowered I suppose, because I knew how it was going to be and what was going to be happening. Knowledge is power as I needed to decide that what was going happening with me was the right thing or not” (Source: S2_1)

This point was also unerscored in an interview with a manager of a support organisation, when she were asked how she thought that new technologies could help their consumers to manage their conditions. Her response clearly pointed to the role

of social media in empowering patients through *gaining a better understanding of their conditions*:

“I think it is all about self –management decisions and these new media really help patients to learn more about their conditions, and you know, knowledge is power really.”
(Source: S6_1)

Also, comments made by a patient with arthritis highlighted this point:

“I was totally lost, as I did not know what the right decisions were for me. I was hundred percent relying on my GP and you know, that wasn’t a right thing to do. So, I started to research on the Internet and then I joined an online support group. I began to learn as much as I could about my condition, about how it happens, its symptoms and how to cope with it, the prognosis, everything” (Source: S1_1)

Many of the participants also brought out how the use of social media helped them to make decisions that were grounded in some sort of knowledge that they gained from online forums. For example, as evidenced below, a patient with diabetes focused on this point in an interview:

“I can chat live on there. I can post a message to the forum. I can see photographs of other people who are surviving and doing nicely. And generally have a lot of information at my fingertips that makes it a lot easier for me to decide if I want, for example, to try a new drug that is released in the US or not, so it is really useful” (Source: S6_5)

Also, an arthritis patient commented on the role of social media in making knowledge driven decisions:

“I think I'm learning gradually that the OA symptoms deteriorate in the cold, wet weather hence the last few days have been horrible especially. But, to warm up and have a hot bath, worsens my Fibro symptoms as the heat just

exhausts me! So, the next thing I need to decide is whether to buy a new electric blanket or not” (Source: S1_1)

The presented findings in this section show that social media plays a positive role in supporting patients and carers to negotiate healthcare services and make decisions that are more accurate. The findings show that social media supports patients and carers to gain more **decision-making power** by assisting them *negotiating healthcare decisions, understanding different aspects of chronic conditions, and making knowledge driven decisions.*

4.2.4.3 Gaining Control

The selective code of **Gaining Control** shows how social media can support patient and carers to **gain control** over the complications of chronic disease. Many of the participants commented on how important it is for them to be able to have more control over their conditions so they can have a more normal life. The participants also highlighted how social media supported them to gain such control by enabling them to *be more proactive, helping them to avoid shocks and surprises, assisting them to have more effective self-management, and giving them more choices.*

The findings showed that social media could assist patients and carers to become *proactive* in their approaches to the management of their conditions. The findings revealed that such ability was made possible as patients and carers were able to access a wide range of resources, such as drug information and other people’s experiences. This role of social media was clearly mentioned by many of the participants as it is shown in the following excerpt from an interview with a patient with arthritis. She explains her view about the value of social media by focusing on how these technologies assisted her to become *proactive* in seeking services important for the management of her condition:

“I really value what Arthritis Victoria does for the community. For example, their Facebook site and the map they launched recently are great tools for all of us. The information they impart on there is really helpful and in fact I often look for information there to find out what services are available in my area and where I need to go and ask for them. So, basically I can find them myself”

(Source: S6_5)

The finding also revealed that social media supports patients and carers to gain a certain level of control over their conditions, helping them to *avoid shocks and surprises*. Many of the participants commented how social media assisted them to talk to and learn from other patients or carers who had experienced similar situations. The participant also explained how such a learning process through social media assisted them to foresee the circumstances that could be a surprise or a shock to them. As evidenced here, a patient with arthritis expressed her view on how social media helped her to reduce the possible impact of some unforeseen surprises:

“After I talked to the people on the forum, nothing was anymore going to be a surprise or a shock for me about the procedure. So, I knew what I should expect by letting them do the operation” (Source: S1_2)

Self-management is a process concerned with the control of the implications of chronic conditions that is led by patients rather than by practitioners. The role of social media in supporting patients to have a more *effective self-management* process was also mentioned frequently by the participants. They placed emphasis on two important impacts of social media on supporting the *self-management* process. First, social media was described as a resource that patients could use to find information about new drugs, new treatments, and other patients' experiences. Second, the participants perceived social media as a resource that they could use to find out about the state and availability of other resources that could be valuable to the management of their conditions. These two applications of social media and their impacts on the self-management process are evidenced in the following quotes. The first quote represents a typical perspective on how social media supports the *self-management* process by providing patients with access to other patients' experiences:

“I'm just keen to do everything possible to get them [complications of her condition] both under control. I'm in so much pain that I think I'll take your advice CJ and go up to 15mgs for a couple of days to get things under control”
(Source: S1_2)

And, in the second quote a practitioner shows how social media platforms such as Facebook could support the *self-management* process:

“[Our Facebook page] helps our consumers to push for self-management that actually they can be in control of their condition. Because they actually can have access to reliable information we have on our page and find out where the services they need are available, or they can use that information to negotiate for those services” (Source: S6_1)

The findings also show that social media enabled the patients and carers to **gain more control** over their conditions by giving them *choices*. *Choice* is an In Vivo code as many of the participants commented on the impact of social media in providing them with different *choices* that could affect their management process. In the following excerpt, a patient explains her view on how her participation in an online support forum helped her to understand her choices:

“So, I find the forum very helpful. I think when you have the right information you will feel easier with any decision that you make because it's an informed choice” (Source: S2_1)

The significance of *choice* was also accented by a patient when she was asked in an interview to express her perspective about the value of social media in the management of her condition:

“It offers you choice. For example, you can choose how and when you want to communicate with other people” (Source: S1_1)

The findings related to the subcategory of **gaining control** show that social media supports patients and carers to gain better control over the complications of chronic diseases by enabling them to be *proactive* in finding and asking for resources they need. The findings also highlighted that social media can help patients and carers to reduce the possibility of facing shocks and *avoid surprises* by learning from other people's experiences. Also, the findings in this section showed how social media can provide patients and carers with more *choices* in their decisions and actions. Overall,

these possible capabilities are interpreted as the *Affordances of Social Media* in allowing patients and carers to **gain more control** over chronic conditions.

4.2.4.4 Important Findings Related To the Empowerment Category

The review of the findings related to the main category of **Empowerment** revealed a number of important findings.

Decision-making power emerged as one of the important findings. In general, healthcare services are expensive and have scarce resources so the provisions of healthcare services to any group or individuals have to be well justified. As such, the process of allocating or accessing healthcare resources is usually involved with decision-making and negotiations between multiple parties. The outcomes of such decision-making are highly dependent on the available resources and negotiation abilities of the involved parties. As such, these findings demonstrate the potential of social media in giving better and stronger decision-making abilities to patients and carers. The findings also show that social media afford patients and carers with resources that make them more capable to negotiate healthcare resources.

The other key finding of this main category is concerned with the influence of social media in assisting patients and carers to **gain control** over the management process. Chronic disease management is often involved with unforeseen circumstances and surprises. The findings showed that having prior knowledge about unforeseen changes and learning how to deal with unexpected situations are of importance for patients and carers. Instead of being passive and taking a more reactive approach to the changes, the findings show that social media can play a promising role in equipping patients and carers with knowledge and best practices, and put them in a more *proactive* and stronger decision-making positions.

4.2.5 Knowledge Co-Creation

The theme of *Affordances of Social Media* also encapsulates the category of **Knowledge Co-Creation**, with the three major underpinning subcategories of **Information Seeking, Information Accessing, and Knowledge Sharing**. The category of **Knowledge co-creation** illustrates the means by which social media can support information and knowledge processes in chronic care management.

The category of **Knowledge co-creation** captures participants' views regarding the process of **information seeking** through two open codes of *seeking information about diseases* and *seeking information for implications of treatments*. Figure 4.5 shows the analytical development of the **Knowledge Co-Creation** category.

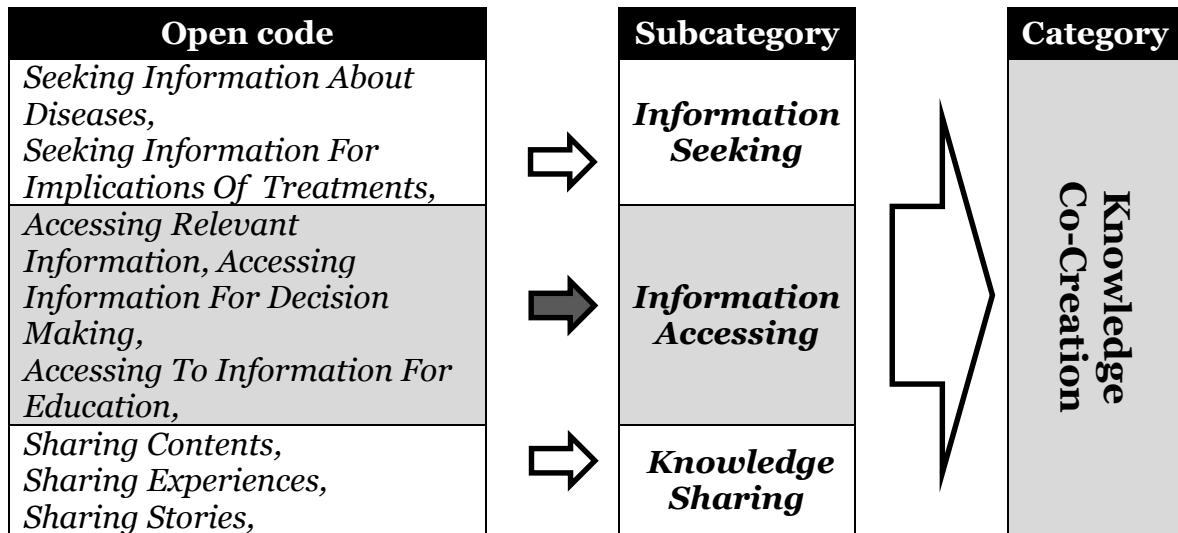


Figure 4.5 The analytical development of the knowledge co-creation category

Knowledge Co-Creation also underlines issues concerned with *accessing relevant information*, *accessing information for decision making*, and *accessing information for educational purposes* as the major dimensions of **information accessing**.

The **Knowledge Co-Creation** category also encapsulates participants' views about the *Affordances of Social Media* in the **knowledge sharing** process. Based on the participants' comments this process mainly relies on *sharing content*, *sharing experiences*, and *sharing stories*.

4.2.5.1 Information Seeking

The selective code of **information seeking** represents an *affordance of social media* in supporting patients and carers to seek information for management purposes. The findings showed that one of the major purposes of using social media by the patients and carers is **information seeking**. Based on the participants' perspectives, the use of social media for **information seeking** activities was mainly related to *seeking information about diseases* and *seeking information for implications of treatments*.

Seeking information about diseases was in evidence. The findings revealed that social media played a strong role in supporting patients and carers to find information about their chronic conditions. This point was evident in many of the comments from participants, as they mentioned many times how effective social media was in assisting them to find the information about their condition or the condition of the person under their care. As evidenced in the following excerpt, a patient with diabetes explains his perspective on how the use of social media assisted him to find the information about his condition:

“I did find out a whole lot of information about cirrhosis because you could just put a message out and everybody got it so you'd get, you know, you could get anything from two replies to two thousand replies if everybody had an input in to your particular query” (Source: S2_1)

Also, this point was stressed by a specialist when she was asked in an interview how she thought that social media could help patients to better manage their conditions. Her view was expressed as follow:

“From my experience, patients these days go online or use social media mainly for information seeking” (Source: S6_4)

The findings showed that social media was also used for **information seeking** purposes by patients and carers to *research into the implications of treatments options and related issues*. A carer's perspective presented here draws special attention to how she used social media to research people, and to see how they deal with the issues of caring for patients with chronic conditions:

“I go on a forum for carers and I found it very interesting to research, you know, to look at what other people are saying and how things work out for them” (Source: S4_2)

This point is also evident in the following quote from a patient who used social media to research into the drugs she was using:

“I did research into possible drugs that I could use and got the information like the drugs that I am now on, from

somebody in America from the forum, so it was useful as well” (Source: S6_6)

To sum up, the subcategory of **information seeking** encapsulates the participant’s views on the two major activities concerned with **information seeking** in the management of chronic disease. These activities are mainly concerned with including *seeking information about diseases* and *seeking information for researching treatments*. The findings showed that these two activities are facilitated and supported by the use of social media.

4.2.5.2 Information Accessing

The subcategory of **information accessing** illustrates how social media supports patients and carers to access information related to the management of their conditions. The findings showed that many of the participants commented on issues concerned with **information accessing** and many of the issues highlighted by them were related to *accessing relevant information*, *accessing information for decision-making*, and *accessing information for education*.

The findings showed that getting *access to relevant information* was considered an important concern for patients and their carers. However, it was also underlined that social media played a positive role in supporting them to get *access to relevant information*. The following quote from a manager of a support organisation provides evidence on how social media was considered a useful tool for providing patients and carers with access to relevant information:

“I mean social media have made it possible for us to make information instantly available to our consumers and not necessarily something that is not actually relevant to them”
(Source: S6_1)

Also, the perspective of a patient with arthritis puts emphasis on the potential role of social media in supporting her to get access to relevant information:

“I actually got access to more useful information from Facebook than I did from my GP and from my surgeon”
(Source: S1_1)

Many of the participants also commented on how social media assisted them to get *access to educational information*. As evidenced here, a patient with cancer made this aspect of social media noticeable by expressing her view on her participation in an online support group forum:

“But what I found most useful was the forum, because you’re actually talking to people who have been through it and they can actually educate you by offering you relevant information” (Source: S1_2)

The findings also show that accessing the right information has considerable impact on the decisions made by patients and carers. The participants commented on many occasions that social media supported patients and carers to *access information that helps them to make informed decisions*. As evidenced below, this point was highlighted by a specialist when she was asked to express her view on the values of using technology for supporting patients:

“I think using mobile technologies and social media and making information available for patients is a very compelling sort of way of using technology to help and support patients to make decision about what they want to do” (Source: S6_4)

In summary, the subcategory of **information accessing** captured the participants’ views on three major issues concerned with **information accessing** in the management of chronic disease including *accessing to relevant information*, *accessing information for decision-making*, and *accessing information for education*. The findings also show that social media supports patients and carers to access information in these three identified areas.

4.2.5.3 Knowledge Sharing

The subcategory of **knowledge sharing** represents how social media can support patients and carers to share knowledge as they interact with other actors involved in the chronic care management process. The findings revealed that social media was effectively used by the participants to **share knowledge**. The findings showed that social media was used by the participants in four major ways for sharing knowledge

including *sharing content* in different formats, sharing knowledge through *sharing experiences*, and *sharing stories*.

The findings showed that many of the participants took advantage of different features of social media to create and share content in multiple formats as is evidenced in Figure 4.6, Figure 4.7, and Figure 4.8:

“At last night's meeting we discussed "accepting your condition". This proved to be a really great topic as we didn't leave the meeting until 11pm!” (Source: S1_2)

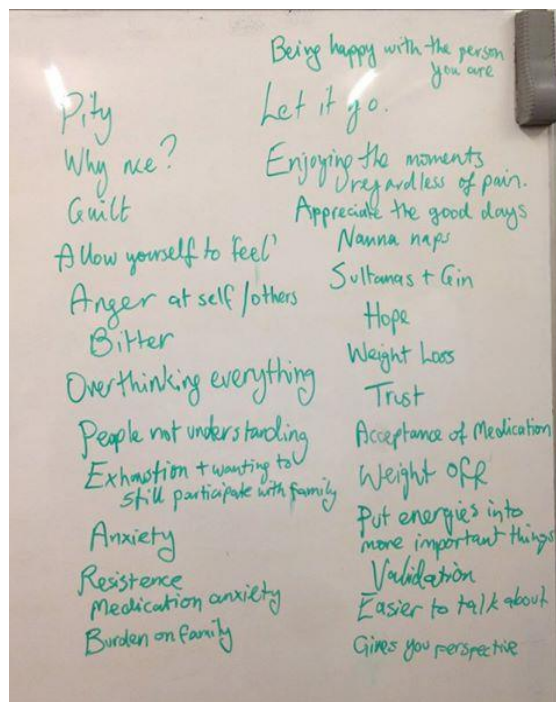


Figure 4.6 Sharing knowledge via photo (Photo 1)

And

“Only took me 8 weeks and 2 days to get this [photo of the drug] but I finally have my drug! Will inject in 30 mins:)”
(Source: S1_2)



Figure 4.7 Sharing knowledge by photo (Photo 2)

And

“Arthritis Victoria is holding a Managing Pain seminar this Saturday 31st August between 1:00pm and 4:00pm at St Vincent's Hospital. Including afternoon tea” (Source: S1_2)

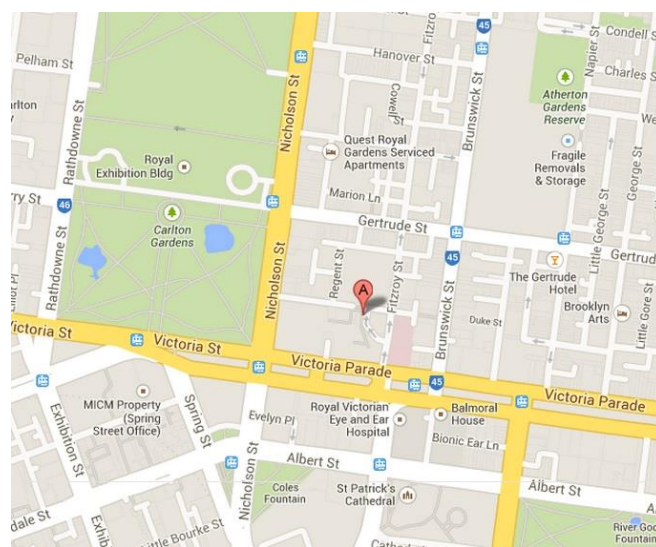


Figure 4.8 Sharing knowledge by map (Photo 3)

Also, the findings showed that many of the participants shared information on social media by exposing other people to their experiences. As evidenced in the following excerpt, a patient with RA explained how the use of a blog allows her to learn from shared information about the experiences of other patients:

“I am a big fan of a RA guy and he is like the super hero of the RA world and he blogs about his experiences of living with RA” (Source: S1_1)

The participants also commented frequently on how they used social media to share their stories. The findings showed that while stories were told over social media for different purposes (e.g. support, sympathy, or venting out), every story created a context for sharing and communicating different types of knowledge. The following quotes provide some evidence in supporting this subcategory.

“I really like the forum! There is always something, a new story or a comment that you can read and learn from them.”
(Source: S4_1)

Or

“Ok Jennifer, what is your story? What brings you here?”
(Source: S1_2)

The presented findings in this section show that the **knowledge sharing** process plays a significant role in the management of chronic disease. The findings also revealed that this process is supported by the use of social media as they facilitate sharing information and knowledge by *sharing contents in different formats, sharing experiences, and sharing stories*.

4.2.5.4 Important Findings Related to the Knowledge Co-Creation Category

The findings revealed that social media supports three major processes of **information seeking, information accessing, and knowledge sharing**.

The findings showed that social media are strong tools for **knowledge sharing** in chronic care management. Based on the participants comments **knowledge sharing** covers a substantial part of online activities by patients and carers. Traditionally information and knowledge is shared between the patients and carers through face to face interactions or in the format of written text. However, the findings highlight that social media enables these actors to take the process of information and knowledge sharing to a higher level by taking advantage of the capabilities of social media for sharing richer content such as images, video footage, cartoons, and auditory information.

4.3 Key Findings

- The category of **Building a Sense of Community** is one of the key findings of this chapter. This selective code represents how social media can be used to cater to a sense of community among the actors involved in the process of chronic care management.
 - In respect to this theme, the findings showed that there are a number of major ways that social media contribute to the creation of a sense of community including: building rapport among patients and carers, supporting diversity, supporting access to social support, facilitating learning, and boosting communication among the actors.
- The selective code of **Emotional Support** was another key finding. This *affordance of social media* represents how social media can be the source of emotional support for the patients and carers. As the findings show, these technologies can facilitate **emotional support** by being a source of **emotional comfort** and assisting the participants of the online forums to **raise hope**.

A summary of the key findings related to the *Affordances of Social Media* theme are presented in the Table 4.2:

Table 4.2 A summary of the key findings related to affordances of social media

Theme	Key findings	Meaning	Category
<i>Affordances of Social Media</i>	Building a Sense of Community	Draws on commonalities over social media to create a sense of community	Building a Sense of Community
	Emotional Comfort	Information and interaction over social media can create emotional comforts	Emotional Support

5 UNFOLDING COMMUNITY RESILIENCE

5.1 Introduction

This chapter unpacks and unravels the underlying concepts pertaining to the *Community Resilience* theme. It aspires to cast light on the meaning of *community resilience* in the context of chronic care management. It also aims at demystifying the role of social media in the construction of such a meaning.

In doing so, this chapter elaborates how the dimensions and characteristics of *community resilience* in chronic care management were investigated and explored. Further, it draws on patients' and carers' perspectives to unfold the meanings of the explored concepts. While this chapter presents the final findings related to the *community resilience* theme, it is noteworthy to explain and expand on the process of data analysis employed in this chapter.

Findings related to the *community resilience* theme draw highly on a set of preliminary concepts that came from the existing literature. This was because these preliminary concepts - as they were presented in Chapter 2 – were central to the broader and primary research question, and it was important to analyse data in the light of those concepts. These preliminary concepts provided promising points to set out data analysis. They also laid out focused conceptual areas for the interpretation of data.

As discussed earlier in Chapter 3, different social media platforms were used extensively as sources of data in this study and they provided unique opportunities for data collection and analysis.

More precisely, by taking into account the primary research question, this approach not only enabled me to access vast empirical data, but I also became more sensitive to two aspects of the collected data. First, I become more interested in knowing how the preliminary concepts were discussed within different social media platforms. Second, I tuned into how different social media platforms were used to create, shape, or modify any of those concepts.

As such, many of the findings in this chapter strongly draw on these approaches to the analysis of data that came from social media sources. That said, the preliminary concepts were subject to modifications as the data analysis progressed. Many of them were found to be less important or insignificant in the context of chronic care management, while some new concept emerged and became prominent.

The findings in this chapter reflect the notion of a middle-order approach to qualitative data analysis (Dey, 1993; Urquhart, 2013). The presented data analysis in this chapter also represents an adaptive approach to grounded theory method, as discussed in Chapter 3.

In short, the theme presented in this chapter conceptualises the process of chronic care management and the dynamics of relationships between the actors involved in this process as *community resilience*. This approach is informed by the research question, empirical data, and the preliminary concepts that were drawn from a high-level engagement with the extant literature.

The outcome of the analysis illustrates and delineates the characteristics and attributes of community resilience in chronic care management.

5.2 Community Resilience Theme

In general, the findings present in this section highlight the perspectives of the participants about the process of chronic care management and its characteristic from a *community resilience* perspective.

This view can be honed by understanding *community resilience* as an attribute that emerges through day-to-day interaction of diverse actors involved in the management process. As such, the characteristics of *community resilience* are embedded in the actors' subjective experiences of the management process and their interpretation of the process and its objectives.

The findings shows that the participants interpretations of chronic care management range from the issues pertaining to **adaptation, communication, and community support**, to issues concerned with **social inclusion**.

Figure 5.1 presents an overview of the *community resilience* theme and its development.

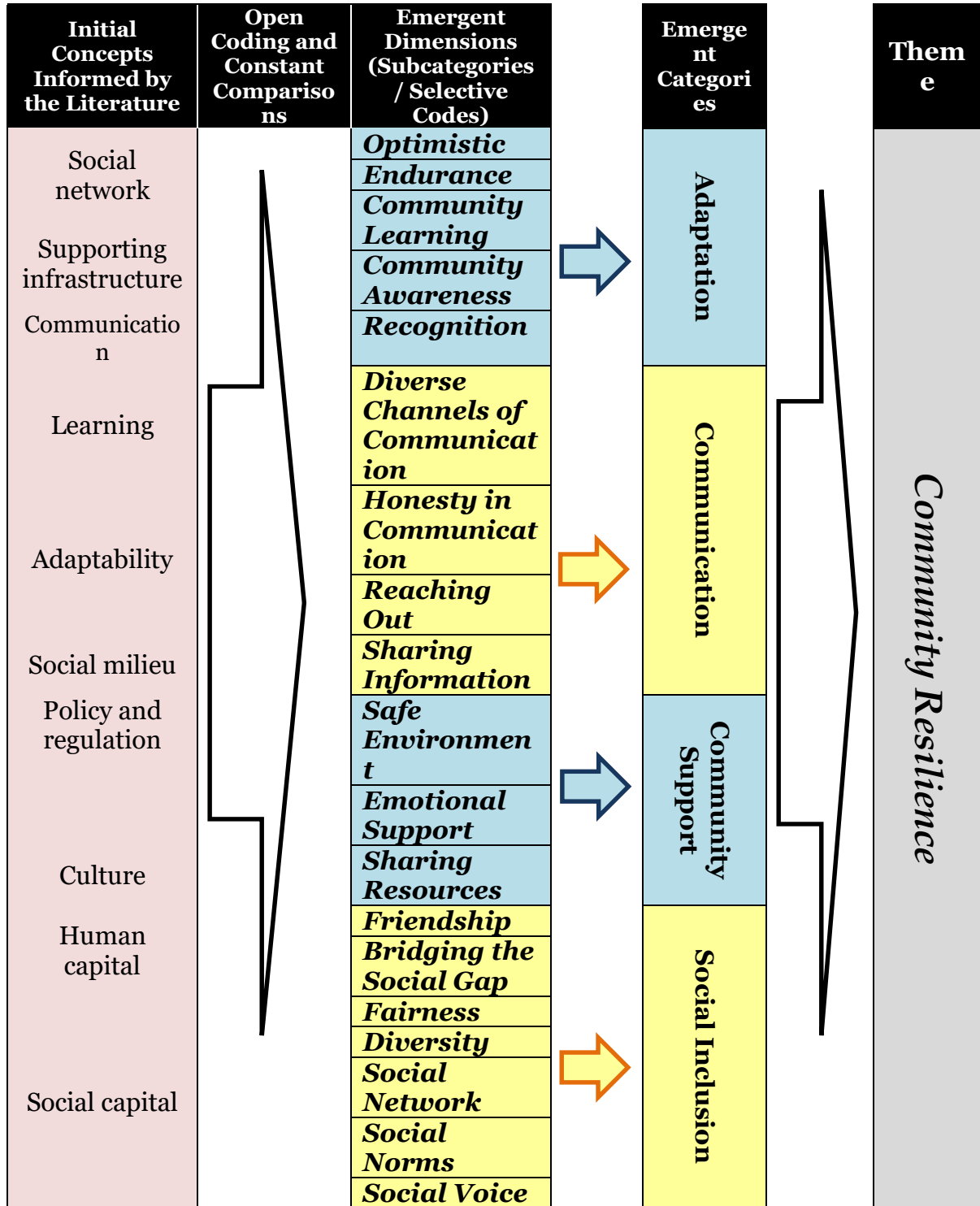


Figure 5.1 An overview of the development of the community resilience theme

5.2.1 Chain of Evidence

Table 5.1 represents an overview of the chain evidence (with reference to Table 3.6) that led to the construction of *Community Resilience* theme.

Table 5.1 An overview of chain of evidence: linking data sources to the emergent theme of community resilience

		<i>Community Resilience</i>			
		Adaptation	Communication	Community Support	Social Inclusion
Data Sources	Focus Group	S1_1	S1_1	S1_1	S1_1
	Online Forums	S1_2, S1_3, S2_1, S2_2, S2_3, S4_1, S4_2, S4_3, S5_1, S5_2	S1_2, S1_3, S2_1, S2_2, S3_1, S4_1, S4_2, S4_3	S1_2, S1_3, S2_1, S2_2, S2_3, S4_1, S4_2, S4_3	S1_2, S2_1, S3_1, S4_1, S4_2, S4_3, S5_1,
	Interview	S6_1, S6_5, S6_6	S6_1, S6_2, S6_3, S6_4, S6_5, S6_6	S6_3, S6_5, S6_6	S6_1, S6_2, S6_5, S6_6

5.2.2 Adaptation

Adaptation is one of the components of the key category of *community resilience*. The category of **adaptation** illustrates the different factors that contribute to the ability of the actors to accommodate to the changes caused by the process of chronic care management. The five underpinning subcategories of **adaptation** are *optimism, endurance, recognition, community learning, and community awareness*.

The subcategory of **adaptation** captures the participants’ views with regard to optimism as they commented on the issues related to *moving forward, creating a positive atmosphere, and having a positive attitude*. This category also shows how **endurance** in chronic care management supports adaptation through *resignation, coping, and flexibility*. **Adaptation** also represents the participants’ perspectives about **recognition** by highlighting the issues related to the *recognition of patients’ day-to-day problems, recognition of patients’ health conditions, and recognition of patients’ needs*.

Learning from community and **community awareness** also stand out as important aspects of adaptation in chronic care management. The selective code of **community learning** enfolds issues related to *learning about different perspectives, learning about different cultures, learning social skills, self-learning, and learning from other’s experiences*; and **community awareness** encircles the views regarding *the awareness about diseases, awareness at community level, awareness initiatives, impact of the awareness, and raising awareness through technology*.

Figure 5.2 shows the analytical development of the **adaptation** category.

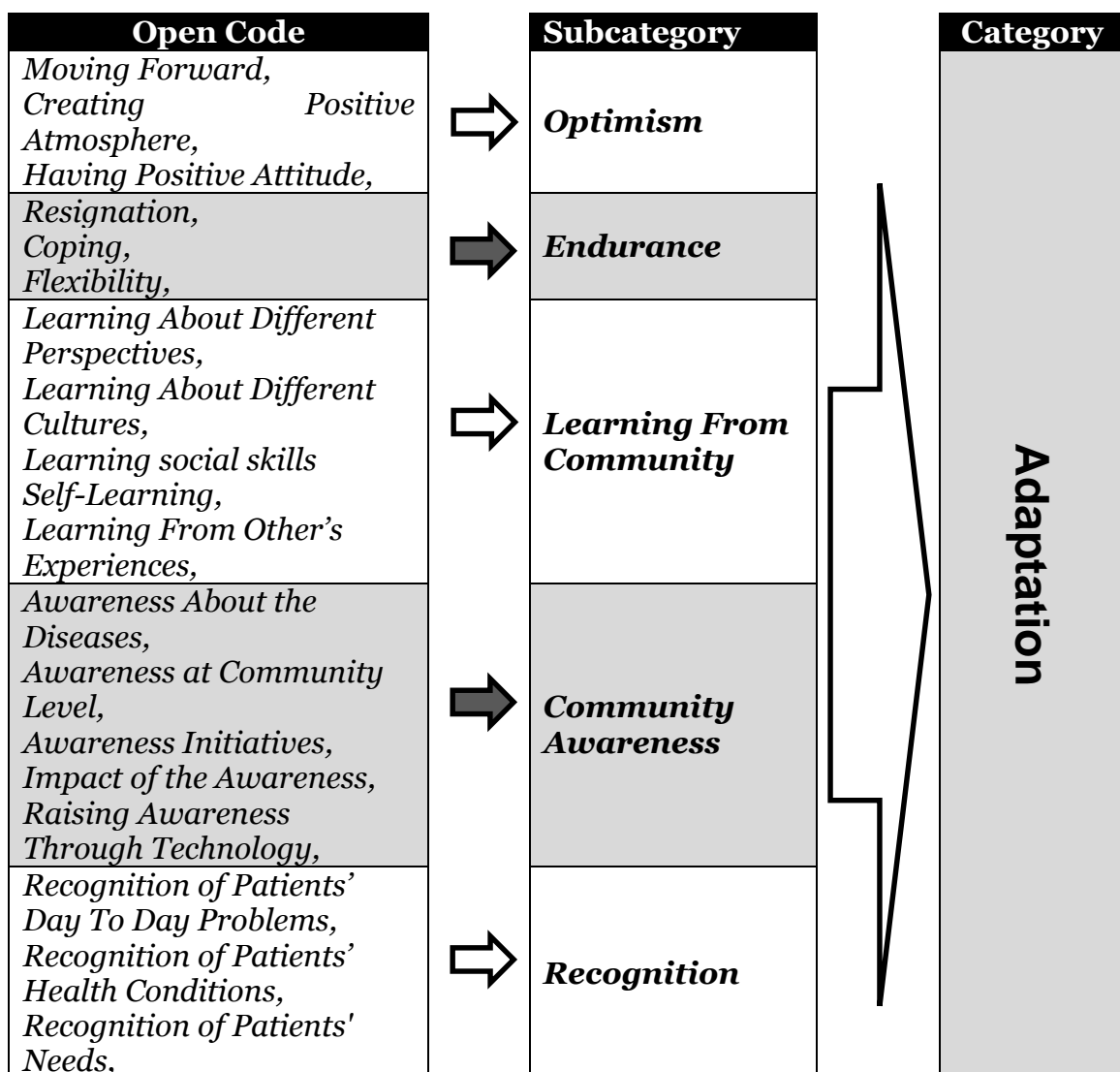


Figure 5.2 The analytical development of the adaptation category

5.2.2.1 Optimism

The selective code of **optimism** illustrates the strategies that patients and carers adopt to stay positive during the management process. It represents a number of key factors that influence how patients and their families **adapt** to new circumstances and or a new life style. This selective code encapsulates the participants' views about issues related to *moving forward* and getting on with the life, *creating positive atmosphere* when facing the challenges of the management issues, and *having a positive attitude*.

Many of the participants commented on the importance of not being carried away by the difficulties and hardships of chronic disease management. The findings showed that it was important for the patients and carers to believe that they need to *move forward* as their lives go on. To illustrate, a patient with type II diabetes whose leg was imputed stressed this point in this way:

“And you've got to realise that life is worth living and you have to move forward” (Source: S2_1)

The participants further foregrounded how *creating a positive atmosphere* around their lives and being involved in positive thinking can assist them to be **optimistic** about their situations and about the outcomes of the management process. For example, one of the young patients with arthritis highlighted this point by expressing her impression of a support group she met, as presented in the following excerpt:

“They were really, really positive and happy people and they were very keen to get on with life and be really supportive to each other” (Source: S1_2)

The participants also commented on *having a positive attitude* toward chronic disease could assist them to be **optimistic** about their conditions. As evidence, this point was mentioned by an adult patient with arthritis:

“The bottom line is that we need to believe that we are able to live our lives as normal as we can, well we do live our lives normally, and we just have this, well actually a little problem to deal with really, but no big deal” (Source: S1_2)

In summary, the findings showed that for the patients and carers to be **adaptable** to the management process, they needed to be **optimistic** about the process itself and its outcomes. The findings about **optimism** underline that the patients and carers acknowledge the difficulties and hardships of the management process but they also believed that to stay **optimistic** they had to be able to *move forward, create a positive atmosphere, and have a positive attitude* in their lives.

5.2.2.2 Endurance

The subcategory of **endurance** represents the strategies that the actors may adopt to be able to endure difficulties concerned with the management process. **Endurance** captures the participants' views regarding the issues concerned with *resignation, flexibility, and coping* with the difficulties of the chronic disease management processes.

The findings show that *resignation* to the management of chronic disease is one of the major approaches taken by patients to adapt to new conditions. As many of the participants argued, at some stage they needed to come to terms with their conditions and accept their new way of living, as this approach would help them to get on with their lives. As evidence, the following quote from a patient with autism underscores this point:

“Get on with it. It happened and you've got to live with it. There's nothing in this world is going to change it” (Source: S4_1)

Coping was also in evidence. The findings show that *coping* with the difficulties of chronic disease is one of the major aspects of **endurance** in the patients and carers day to day lives. As an example, the importance of *coping* was highlighted by a patient with arthritis in the following excerpt:

“You know! you gradually learn how to cope with all the pains and all those things you can't do anymore” (Source: S1_1)

The participants also commented on how having a *flexible* life style was an important factor for them to be able to endure more as they got involved in the management

process. As evidenced, the importance of flexibility is foregrounded in the following quote from a patient with asthma:

“You eventually realize that you need to be flexible with your life style otherwise you become so fragile and isolated”

(Source: S5_1)

In summary, the findings about the selective code of **endurance** point to the importance of this aspect of chronic care management and how it can contribute to the **adaptation** of patients and carers. The selective code of **endurance** shows that **adaptability** in chronic care management entails actors being able to endure the difficulties of the management process. The findings about **endurance** also highlighted how the participants believed that *coping, flexibility, and resignation* could lead to **endurance**.

5.2.2.3 Recognition

The category of **recognition** illustrates the efforts and capabilities that patients and carers expect to be acknowledged and recognised by the community. Based on the participants' views, a community with inaccurate or incorrect understandings of the process of chronic care management and its implications for patients and their families can be a major obstacle for **adaptation**.

The category of **adaptation** encapsulates participants' views related to the issues concerned with the *recognition of patients' problems*, the *recognition of patients' conditions*, and the *recognition of patients' needs*.

In terms of patients' difficulties, the findings show that many of the patients commented that it is important for the patients that their problems and the difficulties that they have to deal with on a daily basis are recognised by other people. Such recognition helped them to feel more acknowledged and be more adaptive to the difficulties of their conditions. This point was clearly mentioned by a patient with arthritis as follows:

“I think anything that's needing to know and talking about it and understanding is the odds and I think is very helpful”

(Source: S1_2)

The findings also show that the *recognition of patients' conditions* was frequently mentioned by the participants. Many of the participants commented that it was important for them that their conditions are acknowledged by others and people recognise that they are dealing with conditions that affects many aspects of their lives. Such **recognition** would enable them to more effectively deal with the difficulties of their conditions and better **adapt** to them. As is shown here, the importance of such **recognition** is even reflected in the way patients relate themselves to others:

“Only those would know about it who have suffered from it”

(Source: S6_6)

Recognition of patients' needs was also in the findings. The participants highlighted that in the management of chronic care patients need to feel that their needs as people with special conditions are considered by other people and such recognition assists patients and carers to better **adapt** to the constraints and limitations that are imposed on them by their conditions. As evidenced here, this point is highlighted by the carer of a young autistic person:

“it is encouraging to see that other people try to understand them, and theirs needs” (Source: S4_1)

This section focused on the selective code of **recognition** as one the major dimensions of the **adaptation** in chronic care management. This section illustrated how the **recognition** of patients and carers by community, and acknowledging their roles in the management process contributes to their **adaptation**. The selective code of **recognition** underlined that adaptation in chronic care management is influenced by the *recognition of patients' day-to-day problems, recognition of patients' health conditions, and recognition of patients' needs*.

5.2.2.4 Learning from Community

The subcategory of **learning from community** represents how learning from community can assist patients and carers to adapt to the management of their conditions. **Learning from community** was one the categories that strongly emerged during the analysis process. Issues related to this category were almost mentioned by all the participants either explicitly or implicitly. The significance of the learning is that it is a fluid concept that is presented in almost all aspects of the

management process. It glued all the dimensions of *community resilience* by enabling the actors to gain deeper understandings of the process of chronic care management and its requirements. In other words, the findings showed that a resilient community is also a learning community. Based on the participants' comments, the category of learning from community has five major aspects of: *learning about different perspectives, learning about different cultures, learning social skills, self-learning, and learning from other's experiences.*

Learning about different perspectives was among the findings. Many of the participants commented on the importance of learning about different perspectives as it expanded their knowledge about their disease. The participants specifically pointed to this aspect of learning as they believed that *learning from different perspectives* provides an effective way of validating their own knowledge and sharpening their approaches to the issues concerned with the management process. The perspective of a carer of a child with autism is presented here as evidence:

“Being in the parent's sessions, I'd like to see what problems they face and how they make sense of them” (Source: S4_2)

The participants also highlighted the importance of *learning about different cultures*. Many of them believed that learning from other cultures and knowing how they tackle their issues helps people to be more sensitive to minority groups within the community, and also take on board what they have to offer. They also commented that learning from different cultures makes it easier for people to **adapt** to the difficulties and conditions of chronic care management. This point is highlighted by a member of a support organisation who works with people from different cultures:

“We need to listen and promote and learn from other cultures” (Source: S6_1)

This point was also highlighted by a patient with diabetes who was living as a member of a minority group within a community:

“Learning about the people we see every day is important because for example, mental illness in some cultures means someone who is crazy” (Source: S2_1)

The participants also commented on how *learning social skills* can assist them to **adapt** to their conditions. Many of the participants believed that social skills that are gained through social interactions can help them to deal with challenging social situations that in turn could support their **adaptability** to their conditions. For example, an autistic person with difficulty engaging in social activities commented on the learning of social skills in this way:

“I think it’s something I have learnt, and learnt to deal with being in social situations and not get too overwhelmed”

(Source: S4_1)

The process of *self-learning* was in the findings. Many of the participants frequently pointed to the positive role of *self-learning* in their adaptation to the management of their conditions. Evidenced here, a patient with arthritis highlighted this point after her participation in a community support group as a volunteer:

“Since I become a volunteer to participate in this group, the whole challenge has been a self-learning and a steep-learning curve on my part” (Source: S1_2)

Another point that was mentioned quite a number of times by the participants was about matters concerned with *learning from other’s experiences*. Many of the participants believed that community is a unique resource for learning skills and knowledge that can assist patients to understand and **adapt** themselves to their conditions as they engage with social activities. For example, as evidenced here, an autistic person presents his view about how *learning from other people’s experiences* helped him to **adapt** to his work environment:

“It was a good experience working in an office environment because you see and learn how other people work, and how other people do it. You know, helped me feel getting less bogged down in details” (Source: S4_1)

In summary, the selective code of **learning from community** shows that chronic care management is a learning community where the actors use different resources to learn about chronic disease, their implications, and their management. The presented findings in this section highlight that community is a rich source of learning in that

learning can be supported through, *learning about different perspectives, learning about different cultures, learning social skills, self-learning, and learning from other's experiences.*

5.2.2.5 **Community Awareness (In Vivo Code)**

Community awareness emerged as one of the important dimensions of the **adaptation** category. It represents the role of **community awareness** in patients' and carers' adaptation to the management process.

Based on the participants' perspectives, awareness should take place in different levels and layers of a community. Such awareness will help the community have a more realistic understanding of the implications of chronic disease and more sympathetic approach to patients' and carers' requirements. **Community awareness** captures the participants' view about *community awareness about the diseases, needs awareness at different levels of community, awareness initiatives, impacts of awareness, and raising awareness through technology.*

The findings show that the participants commented frequently on the importance of **community awareness** about chronic disease and their characteristics. They also emphasised that such *awareness* should be about both *the disease and its impacts* on people's day to day life. These points are highlighted here as evidence by a number of patients and carers. A carer of a patient with arthritis expresses her view on this point as follows:

“Some people think arthritis is a disability and this is not correct. They must know that it is a spectrum” (Source: S1_1)

The importance of *awareness about chronic disease* was also further elaborated by a diabetic patient (suffering from depression) in this way:

“Actually I think our community do not know what depression is and it can affect our lives” (Source: S2_1)

Many of the participants also stressed the *need to raise awareness* about chronic disease at different levels of community. They believed that *awareness within different layers of community* is a more effective way of assisting patients and their families to adapt to the circumstances of chronic care management. The following

excerpts highlight this point as evidence. This first excerpt is based on the perspective of a patient with rheumatoid arthritis (RA) and this is how she expressed her view:

“There is a lot to be done to bring the awareness of RA, not just to the families and public, but to government” (Source: S1_2)

Also, a carer of an autistic child expresses her view in this way:

“Raising awareness from schools as well, when they're learning about different life subjects” (Source: S4_2)

The *need for awareness initiatives* was also in the findings. Many of the participants commented on such a need and highlighted that there should be some plans and initiative to raise awareness about chronic diseases and the implications of these type of disease for individuals and community. As evidenced, a patient with arthritis highlights this need by pointing to the insufficient efforts that are put in place to raise awareness about the difficulties of living with arthritis

“Only a handful in the whole of the country (Australia) use the Internet to raise awareness about RA” (Source: S6_5)

The findings show that the *impact of awareness* was one of the main focuses of many of the participants. Many of the participants not only highlight the necessity of *raising awareness*, they also believed that proper planning of awareness can result in desirable outcomes. For example, an autistic patient believes how awareness can provide more equal opportunity for him to be part of a normal social life.

“I really do feel awareness breaks down the barriers and the discrimination” (Source: S4_1)

The findings also revealed that technology plays an effective role in *raising awareness* about chronic care management. Many of the participants commented on how *raising awareness through technology* can help to reach more people and increase the impact of the imparted information. As evidence, this point and the role of technology in raising awareness is highlighted in the following quote from the parent of an autistic child:

“I think a lot of people are getting more conscious and aware now aren't they, because with the internet and everything, it's there for you to find, the information is there for you to find” (Source: S4_2)

In summary, the findings presented in this section highlight the role of **community awareness** in **adaption** to chronic care management. Based on the participants' perspective, **community awareness** plays a key role in assisting patients, carers, and their families to **adapt** to the circumstances that occur due to chronic care management. This section shows that such **adaption** is supported through *raising awareness about the diseases*, *raising awareness at community level*, the development of *awareness initiatives*, understanding the *impacts of the awareness*, and also *using technology to raise awareness*.

5.2.2.6 Summary of the Findings Related To Adaptation Category

The findings showed that **adaptation** to chronic care management occurs at two the levels of individuals and community. The findings also highlight that these two are interlinked and they constantly reshape each other.

At the individual level, the findings revealed that **adaptation** is dependent on the actors' **endurance** and their ability to be *flexible* and *cope* with the difficulties of chronic conditions. It is also dependent on the actors' personal attitude, their visions toward life, and how much they are *optimistic*.

The findings showed that at the community level, **adaptation** is linked to **community awareness**, **community learning**, and also how much a community gives **recognition** to the issues related to chronic care management.

While each level of **adaptation** is important, the findings suggest that the two levels are not operating separate from each other, and each level (e.g. **optimism**) is influenced by the characteristics of **adaptation** at the other level (e.g. **recognition**).

5.2.3 Communication

The category of **communication** emerged as one the dimensions of *community resilience*. This category represents the means by which **communication** can support a resilient community in the chronic care management process. In this

context, the findings revealed that four dimensions of **communication** that were more significant for *community resilience*. These four major dimensions are the need for ***diverse channels of communication***, the importance of ***honesty in communication***, **communication** as a way to ***reach out*** to more people, and **communication** as a means of ***sharing information*** within community.

The category of **communication** highlights how multiple and ***diverse channels of communication*** can influence the resilience of chronic care management by facilitating *interaction through technology, dialogue between people, and multiple means of interaction*.

This category also turns the attention to the importance of ***honesty in communication*** in chronic care management by encapsulating the participants' views' in relation to the importance of *honesty with patients, honesty about treatments, and honesty with carers*.

Another dimension of **communication** in chronic care management highlighted through this category is the importance of ***reaching out*** to more patients and carers. The subcategory of ***reaching out*** represents this aspect by underlining the participants' views and comments on the issues related to *ongoing communication and staying in touch*.

Communicating common feelings, seeking information, and sharing experiences are three constituent elements of ***sharing information*** that in turn highlights another important aspect of **communication** that is necessary for effective chronic care management.

The category of communication Figure 5.3 presents an overview of the coding process that led to the emergence of the **communication** category.

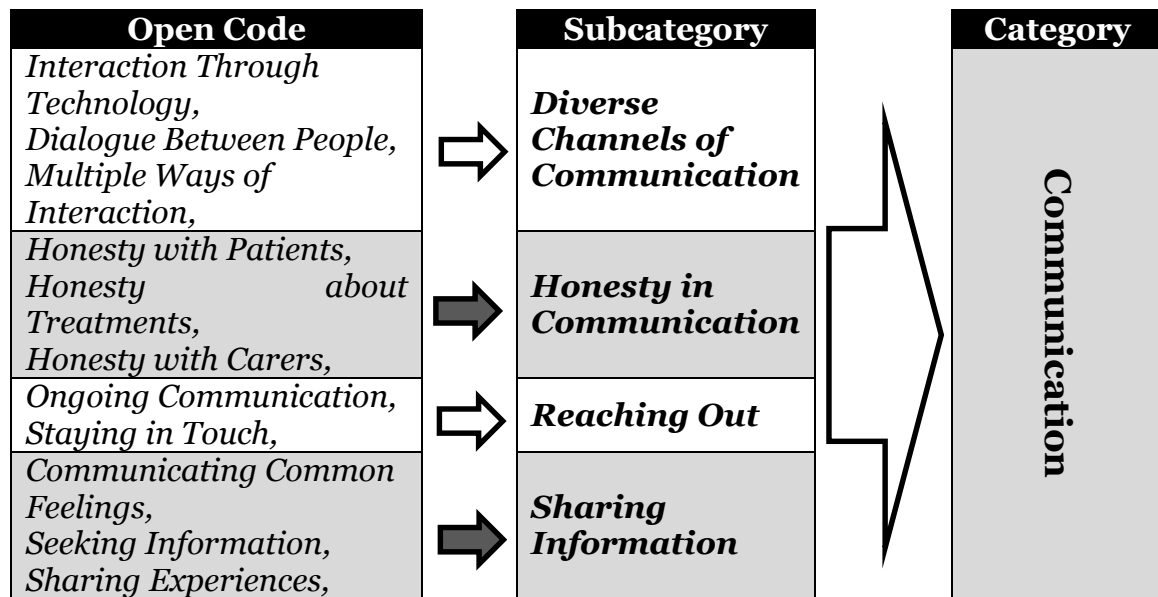


Figure 5.3 The analytical development of the communication category

5.2.3.1 Diverse Channels of Communication

One of the important aspects of **communication** that was highlighted by the participants was the significance of having multiple and ***diverse channels of communication***. This subcategory represents the need for multiple and diverse means of communication. This category encapsulates the participants’ perspectives with regard to *interaction through technology*, the importance of having *dialogue among people*, and the significance of *having multiple ways of interactions*.

One point that was frequently raised by the participants was the positive role of *technology in supporting interaction* between the actors. In this regard, many of the participants pointed to the possibilities such as agility and transparency that new information and communication technology can offer them. A patient with breast cancer highlighted these points as evidenced in this excerpt:

“These days you can send a message on your mobile or computer and they’ll reply to you and it’s very open and transparent” (Source: S3_1)

The need for a *dialogue between people* was also in evidence. Many of the participants commented on the importance of having constructive *dialogues* between patients, carers, and practitioners that can help management processes to be more effective with more positive outcomes. As a long-term patient with arthritis points out, evidenced in the following quote, his many years of experience of living with arthritis

had convinced him that it is very important to have dialogue between different actors involved in chronic care management:

“After all these years of having it, I now realise how important it is to have dialogues between the consultant and you and those looking after you” (Source: S1_2)

The participants highlighted that it is important to have multiple and *diverse channels of interactions*. The findings show that multiple and **diverse channels of communication** enable patients and carers to expand their options to interact with one another. As evidenced, this point is highlighted by an autistic person in this way:

“If we can’t communicate the way that we normally do then we should do it another way” (Source: S4_1)

The presented findings in this section highlight the role of multiple and **diverse channels of communication** in the interaction and **communication** between the actors involved in chronic care management. Based on the participants’ perspective, the *use of technology* and the *dialogue between people* were major methods of interaction for supporting chronic care management. However, the findings in this section also highlighted the need for *multiple ways of interaction* in chronic care management.

5.2.3.2 Honesty in Communication (In Vivo Code)

Honesty in communication was mentioned many times by the participants as an important factor in creating meaningful interaction between patients and other people. This sub-category encapsulates the participants’ view on the issues related to *honesty with patients*, *honesty about treatments*, and *honesty with carers*.

The findings showed that many of the patients commented on the importance of the way practitioners and other people communicate with them about their conditions. *Honesty with patients* was one of the central aspects of **communication** that patients were concerned about. Many of them believed that such approach to **communication** by the practitioners and families, is the key to a successful **communication**.

In an interview with a patient with arthritis, she clearly pointed out the need for **honest communication** by expressing her view in this way:

“I think they need to be honest and tell people exactly what’s wrong with them” (Source: S6_5)

While honesty with patients emerged as a major finding, many of the participants urged for a need to receive **honest communication** about the possible treatment options for them and the potential implications of any treatment for their health or for their families. Many of the patients believed *honesty in communicating treatment options* and their implications enables them to make more accurate and informed decisions. As evidenced, the significance of honesty about treatment is highlighted here by a diabetic person whose condition had caused other multiple health issues for him:

“Now that I am thinking I realise that everything has flowed from that moment in terms of, medical treatment, everything has stemmed from the honesty and the directness of that first diagnosis” (Source: S2_1)

In addition to the patients, many of the carers also commented on the need to receive honest **communication** from the practitioners and other members of community. They also believed that such approach to **communication** is an inseparable aspect of the management process at all levels. This point is presented as evidence from an interview between the researcher and a carer of a young adult with advanced mental health issues:

“Now I am absolutely convinced that in almost any case that I can think of they really should be as honest as they can”
(Source: S4_2)

In this section I turned the focus from methods of **communication** to the content by highlighting the role of **honesty in communication**. This section also shows how **honesty in communication** can create a sense of receiving support among patients and carers. The findings in this section revealed that in chronic care management **honesty of communication** is mainly concerned with *honesty with patients, honesty about treatments, and honesty with carers*.

5.2.3.3 *Reaching Out (In Vivo Code)*

One of the important aspects of **communication** that emerged through the analysis of data was **reaching out**. The subcategory of **reaching out** represents how chronic care management can transcend traditional boundaries by means of **communication**. The participants believed that when it comes to chronic care management, an *ongoing communication* between the actors and *staying in touch* with them are the major aspects of **reaching out** to people.

Many of the participants highlighted the importance of an *ongoing communication* between healthcare providers, support groups, and patients and their families. The participants believed such *ongoing communication* creates the feeling of security and assurance that someone is caring about you and your situation is being monitored. For example, as evidenced here, in an interview with an old patient with arthritis, she expressed her gratefulness of receiving follow up calls from her local clinic and support group after every visit to the local clinic:

“They have been in constant contact with us” (Source: S6_5)

Staying in touch was also in the evidence. The participants stressed that it was important for them to be able to stay in touch with other patients and other members of their support group. They also highlighted the helpful role technology plays in providing and supporting this aspect of **communication**. This point is evident in the following quote from a carer of an autistic child who praises the value of technology in supporting **communication**:

“It’s the best thing to have, you can stay in touch with people with autism because they are on the forum too” (Source: S4_2)

In summary, the findings in this section highlight one of the major purposes of **communication** in chronic care management, **reaching out**. This section showed that raising awareness and helping patients and carers is highly dependent on how these people can be **reached out** to. The findings showed that the two important dimensions of reaching out were *ongoing communication* with patients and carers, and the importance of *staying in touch* with these actors.

5.2.3.4 *Sharing Information*

This subcategory represents **sharing information** as a purpose of **communication**. The participants believed that sharing information with other people plays a vital role in creating positive management outcomes. The selective code of **sharing information** captures the participants' perspectives about communicating *common feelings*, *seeking information* from other people, and *sharing experiences*.

Communicating *common feelings* was one of major aspects of **sharing information**. Many of the participants commented that *common feelings* provided a common ground for effective **communication** between and among patients and carers. Almost, the majority of the participants highlighted that talking about common feelings helps them to have a better understanding about each other's conditions and their implications. As evidenced here, one of the participants who had arthritis and diabetes expressed his view as follow:

“It’s a lot easier to talk with people that kind of feel it in the same way and understand it” (Source: S2_1)

The participants also commented on the importance of **communication** as a means of *seeking information*. *Seeking information* is a vital activity in chronic care management as many aspects of self-management rely on patients' and carers' knowledge about the disease and the possible courses that need to be taken in any circumstances. Some participants highlighted the need for accurate information that would enable them to make informed decisions about the management of their conditions. As one of the patients with diabetic and heart disease highlighted, it is important to communicate with the right people and find accurate information to be able to make decisions:

“When something is the matter with me I want to know who the right person is to talk to and I want every nut and bolt explained to me. I want to be told what, why, when, and how so I can decide what needs to be done next” (Source: S2_1)

Sharing experiences was also in the findings. The participants mentioned frequently that that learning from the experiences of people who have similar conditions or are

in similar situations, is an invaluable source of information for chronic care management. They also stressed that communicating with other people enables them to learn from their experiences and also share their own experiences with others who may benefit from them. The participants also highlighted that technology can play a supporting role in facilitating *sharing experiences*. As evidenced here, a patient with diabetes expresses her view about *sharing experiences* in this way:

“you can talk to other people there [a patients forum] and the best thing to me is they are generously sharing a lot of their experiences with you” (Source: S2_1)

In this section, findings about **sharing information** were presented. They highlighted how **sharing information** for management purposes instigates communication between the actors, and how, at the same time, communication supports the actors to share their *common feelings*, *seek information* from other people, and *share their experiences*.

5.2.3.5 Summary of the Findings Related To Communication Category

The subcategory of **communication** presents two important findings. First, it shows that a key aspect of **communication** in the resilience of chronic care management is its quality. Quality here means how an honest exchange of information can create and enhance trust between the actors involved in the management process.

The other important finding with respect to **communication** is **reaching out**. This finding highlights the importance of **communication** in expanding the boundaries of community. Such expansion can help a community to enhance its resilience by acquiring and sharing new resources.

5.2.4 Community Support

The category of **community support** illustrates how the dimensions and meaning of **community support** in chronic care management is understood by patients and carers. The management of chronic disease is not only a clinical process; it is also a complex social phenomenon. This entails that the patients and carers understand the social implications of chronic disease in the community. The community should also understand patients' and carers' needs and be prepared to respond to them in the best

possible ways. The category of **community support** encapsulates the participants' views regarding *creating a safe environment*, *emotional support*, and *sharing resources*.

The subcategory of *creating a safe environment* captures the participants' views with regard to *privacy*, *protection against misjudgements*, *protecting against misconceptions*, *peer support*, and *support from community*. This category also shows how a community can contribute to *emotional support* by *showing care*, *raising hopes*, *showing sympathy*, and *developing close community relationships*.

The category of **community support** also represents the participants' perspectives about the importance of *sharing resources* within community to support patients, carers, and their families. The subcategory of *sharing resources* highlights issues related to *sharing community resources*, *sharing experiences*, *sharing knowledge*, *sharing time*, and *sharing thoughts*.

Figure 5.4 presents an overview of the coding process that led to the emergence of the **community support** category.

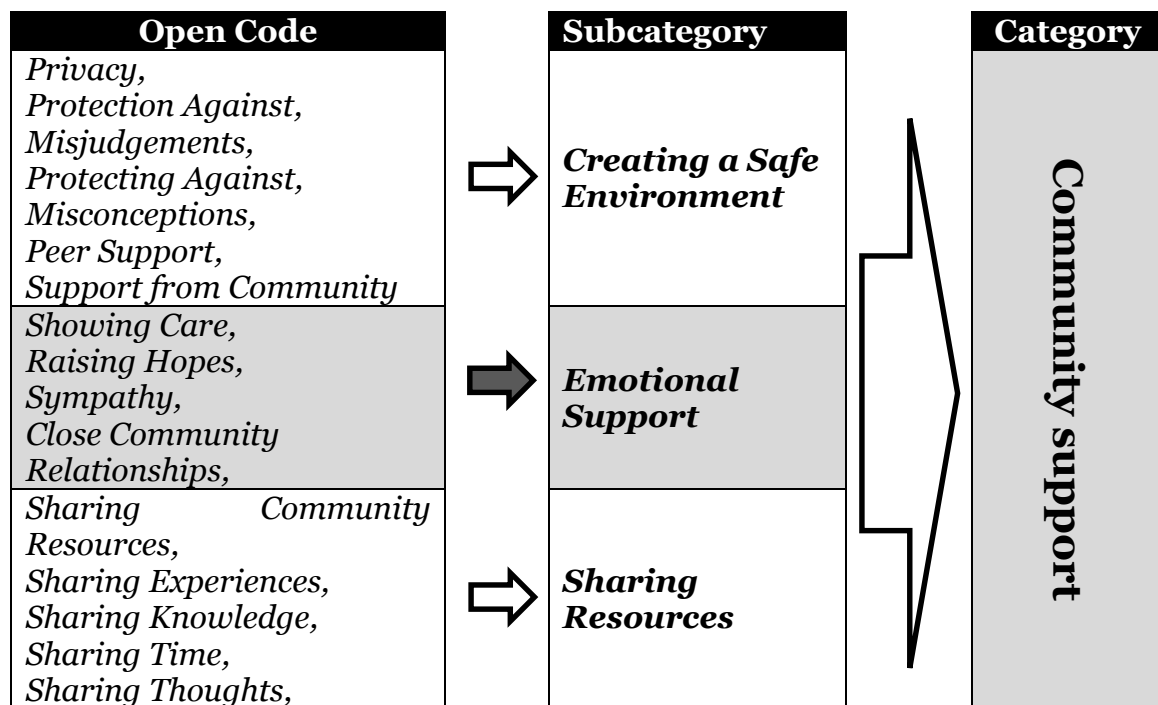


Figure 5.4 The analytical development of the community support category

5.2.4.1 *Creating a Safe Environment*

The subcategory of ***creating a safe environment*** represents the characteristics of a safe process of chronic care management within community. This selective code captures the participants' views in relation to *privacy*, *protection against misjudgements*, *protection against misconceptions*, *peer support*, and *support from community*.

The findings show that many of the participants pointed to the issue of *privacy* as a concerning aspect of the management process and highlighted that they need to be vigilant in protecting their own and their families' *privacy*. The participants also stressed that feeling that their privacy is respected contributes in their feeling of being safe and comfortable. As evidenced, this point was highlighted by a carer of an autistic child:

“I now deliberately refuse to open up to them because they're just sniffing around for information from you and your child and that makes me feel very uncomfortable” (Source: S4_2)

The findings also show that *protection against misjudgements* was repeatedly mentioned by the participants. Many of the participants raised concerns that they needed to protect themselves and their families from other's misjudgements. They felt that because of their conditions they were under other people's scrutiny and were being constantly judged by the community. They also believed that many of those judgments were incorrect and unfair. For example, a parent of a child with autism highlights this issue as evidenced in the following excerpt:

“But I didn't want to talk. And I think that was a sensible decision in the circumstances of our community which is very judgmental” (Source: S4_3)

Further, the findings highlighted *protecting against misconceptions* as one of the dimensions of ***creating a safe environment***. The participants commented on the issues of dealing with people's *misconceptions* about chronic disease. They also commented how such *misconceptions* would affect their management process and their relation with community. For example, in an interview with a carer of a patient with arthritis she highlighted this issue by explaining her view as follow:

“You don’t want people to be talking about your problems because when people talk they usually get things wrong”

(Source: S6_6)

Peer support was also in the findings. Many of the participants commented that getting support from other patients and carers is important for them to get a sense of community that they can rely on, and help them to feel that they live in a safe environment. A patient’s view presented here supports this finding about *peer support*:

“Very rare you get support from outside and it sometimes scares you but there’s a support group that I go to which I think has been more helpful than like anything, anyone that I’ve seen”

(Source: S2_1)

The participants also commented on the importance of receiving *support from community*. Many of the participants believed that community can play a strong role in making them feel safe and protected against social isolation and other problems that may arise from their conditions. As evidenced, a patient at a relatively early stage of arthritis expressed her concerns about how her developing condition could make her socially isolated and how community can help her to alleviate this legitimate concern:

“Knowing that you are not alone and there are people out there who understand you gives you a kind of assurance and makes you feel safe. One of the things that I think we should be doing as sufferers, or carers or people with medical conditions, is to actually have our own community” (Source: S1_1)

In the focus group, this point was also highlighted by another patient with arthritis. As a young professional, she strongly believed in the power of community as a social entity that gives patients a sense of safety through its support.

“We need to support each other in our community. I think this is the only way we can empower each other because once you

are scared and feel weak you have lost the battle and it can drag wherever it wants” (Source: S1_1)

The findings in this section show how a community can support chronic care management by creating **a safe environment** for patients, carers, and their families. The presented materials in this section highlight the characteristics of such an environment and reveal how respecting patients’ *privacy, protection against misjudgements, protection against misconceptions, peer support, and support from community* can contribute in creating such a safe environment.

5.2.4.2 Emotional Support (In Vivo Code)

The selective code of **emotional support** represents how a community can provide **emotional support** to patients, carers, and their families. Based on the participants’ views, the sub-category of **emotional support** encapsulates participants’ perspectives regarding the issues concerned with *care, hope, showing support, and sympathy*.

The findings show that many of the participants highlighted how important it was for them to feel and see that other people show care towards them. The participants believed that showing *care* helps them to feel emotionally relieved and be able to better cope with the difficulties of chronic care management. As a patient with autism said:

“We like to feel the care and loving that we need” (Source: S4_1)

Another patient with arthritis highlighted this point through a story. After surgery, she went out for the first time with her family. She noticed that some people didn’t treat her with *care* or ignored her because she was in a wheelchair and that made her emotionally distressed.

“There was a period of time I was in a wheel chair. We had to go shopping and my husband was pushing me and the kids were with us. And it was very interesting that no one spoke to me. We were looking for a shirt for a wedding. We pushed in and I would say to the shop attendant that I am looking for such and such you know, are you able to help us? And that they all answered to my husband and tried to ignore me. I

was really depressed. I don't know why was that. Maybe he was more at the eye level or maybe they were uncomfortable by the fact that I was in a wheelchair"

(Source: S1_1)

This point was also highlighted by the parent of an autistic child whose son was in a public school:

"Just like knowing that there is care and support; and I like kind of feel that he is understood more" (Source: S4_3)

The concept of *raising hopes* was also in the findings. In many instances, the participants commented on the importance of getting positive and inspiring comments from other people that would make them feel more hopeful about the future. As evidenced, a patient with arthritis shared her story to highlight this point:

"In the time I was at home, in bed, on my own most of the time, you know it is actually amazing in your community who does turn up. We had meals delivered from three or four mums from the school, so my husband didn't have to try and do everything and that's the kind of thing that actually gives you a lot of hope and make you go, ok , I'll get up again tomorrow" (Source: S1_1)

Also, a parent of two autistic children expressed her view about raising hope in this way:

"They come to the knowledge that you are more loving [towards] them, you give them hopes, and they'll open up more and more and they forget their disease" (Source: S4_3)

The findings also show that *sympathy* is another aspect of **emotional support** from the community. The participants commented many times about their feelings when they see other people have *sympathy* for them and their families. For example, as evidenced here, a patient with arthritis expresses her feeling after she had a hip replacement operation:

“I felt really blessed, you know, everybody knew us as the new couple but they were all really, really kind and sympathetic when they found out what had happened and sort of seeing me going up and down in a wheelchair”

(Source: S1_1)

The findings also revealed that a close relationship between people within a community plays an important role in **emotional support** for patients and carers. Many of the participants shared the view that close relationships within community can provide a strong sense of support and assurance. As is represented here, this point was highlighted during an interview with a general practitioner:

“I strongly believe that living in a close knit community can help carers to overcome the emotional difficulties of their day to day challenges” (Source: S6_3)

In summary, this section focuses on the **emotional dimension** of **community support** in chronic care management. The findings in this section show that patient and carers involved in chronic care management expect to get **emotional support** from their surrounding community. Based on the participants’ perspectives presented in this section, **emotional support** from community can be manifested *in care, raising hope, showing support, and sympathy* from members of a community.

5.2.4.3 Sharing Resources

The subcategory of **sharing resources** represents a community that can support the process of chronic care management by sharing different resources. This subcategory encapsulates the participants’ views concerning *sharing community resources, sharing experiences, sharing knowledge, sharing time, and sharing thoughts*.

The findings show that *sharing community resources* can support the management process. Many of the participants commented on how different resources can be shared within the community to support patients and carers. As evidenced, one of the patients with arthritis highlighted this point in a focus group discussion. She said that other people within the community shared resources that helped them overcome the difficulties of taking their children to school.

“Our principal actually rang the family that live two streets away from us and said: Could you possibly pick them up every morning? And that happened. The vice principal lives in the house behind us. She drove them home two nights a week” (Source: S1_1)

Sharing experiences was also in evidence. The participants mentioned many times that how carers and patients can benefit from other people’s experiences. Also, many of the practitioners highlighted that how important for them, was to learn from the experiences of their colleagues as well as the patients and carers. Almost all the participants commented on the significance of technology in supporting this aspect of ***sharing resources***. As evidence here, this point was highlighted by a patient with arthritis as she commented on the usefulness of social media for sharing people’s experiences within the community:

“it’s the best thing you can get to meeting people with RA because they have forums, which you can talk to other people and they can share experiences, such as what they do to cope with their pain, how they find different medications, how to deal with the side-effects” (Source: S1_2)

The participants also highlighted that *sharing knowledge* is an important aspect of chronic care management. The findings show that *sharing knowledge* was considered as a way of supporting patients and carers by empowering them to make more informed decisions. Presented as evidence here, the importance of sharing knowledge was highlighted by the parent of an autistic child during an interview:

“Knowledge is power and we like to get involved and actually passing on our knowledge to other families and children”
(Source: S4_3)

Sharing time was also mentioned many times by the participants. They highlighted time as one of the resources that members of a community would share to support patients and carers. This was highlighted by a patient with arthritis:

“It became huge numbers of people who would spend their time to help me. One of my students would do the garden, somebody would come and feed the cats, sort out the heating”

(Source: S1_2)

Sharing thoughts was also in the findings. It was evident in many of the participants’ comments that they believed *sharing thoughts* and opinions can help to find proper solutions for many of the difficulties and issues related to chronic care management. Presented here as evidence, the significance of sharing intellectual resources is highlighted by a diabetic patient and by the parents of a child with juvenile arthritis respectively.

“So the community should get together and think about the progress or any issue of the health problems” (Source: S2_1)

Also a carer explains:

“You’ve just got to keep your head together and keep thinking because you can work out how to overcome a lot of the problems, much more easily than people who are not familiar with the situation and with the circumstances of this particular disease” (Source: S1_2)

The findings in this section reveal that a community can support the process of chronic care management by sharing its communal resources with patients, carers, and their families. The selective code of ***sharing resources*** presented in this section, show the nature of such resources and highlight the ways they can be shared. Based on the findings, the major issues concerned with resources are related to *sharing community resources, sharing experiences, sharing knowledge, sharing time, and sharing thoughts*.

5.2.4.4 Summary of the Findings Related to the Community Support Category

Creating a safe environment is one of the important findings. This finding covers a range of issues from *privacy* to *peer support*. It shows that the process of chronic care management is usually accompanied with uncertainties and risks. Some of these uncertainties and risks are attributed to the patients’ health but some others are related to the social aspects of the management process. The findings here highlight

some of the major issues related to the social aspects of chronic care and show how addressing these issues can support the resilience of the management process.

The other important finding is **emotional support**. This finding shows how it is important for the process of chronic care management to receive a wide range of supports from community. This finding highlighted some of the important aspects of **emotional support** from community that can contribute to the resilience of chronic care management.

5.2.5 Social Inclusion

The category of **social inclusion** represents the role of **social inclusion** in supporting the resilience of chronic care management (Figure 5.5). The emergent category of **social inclusion** encapsulates the participants views related to **friendship, fairness, diversity, social networks, social voices**, and also the **barriers** against **social inclusion**.

The category of **social inclusion** captures the participants' views with regard to **friendship** as they commented on the issues related to their *circles of friends, difficulty making friends, friends with similar conditions, real world friends, and online friends*. This category also shows how **fairness** in social relationships can supports chronic disease management through developing *fair expectations* from patients, giving *fair opportunities* to people with chronic illness, and taking *fair approaches* toward patients and carers.

Social inclusion also highlights the participants' perspectives about **social networks** by focusing on the issues related to *the need for social interaction* in chronic care management, the importance of *growing social networks*, and the role of *virtual social networks* in the management of chronic disease.

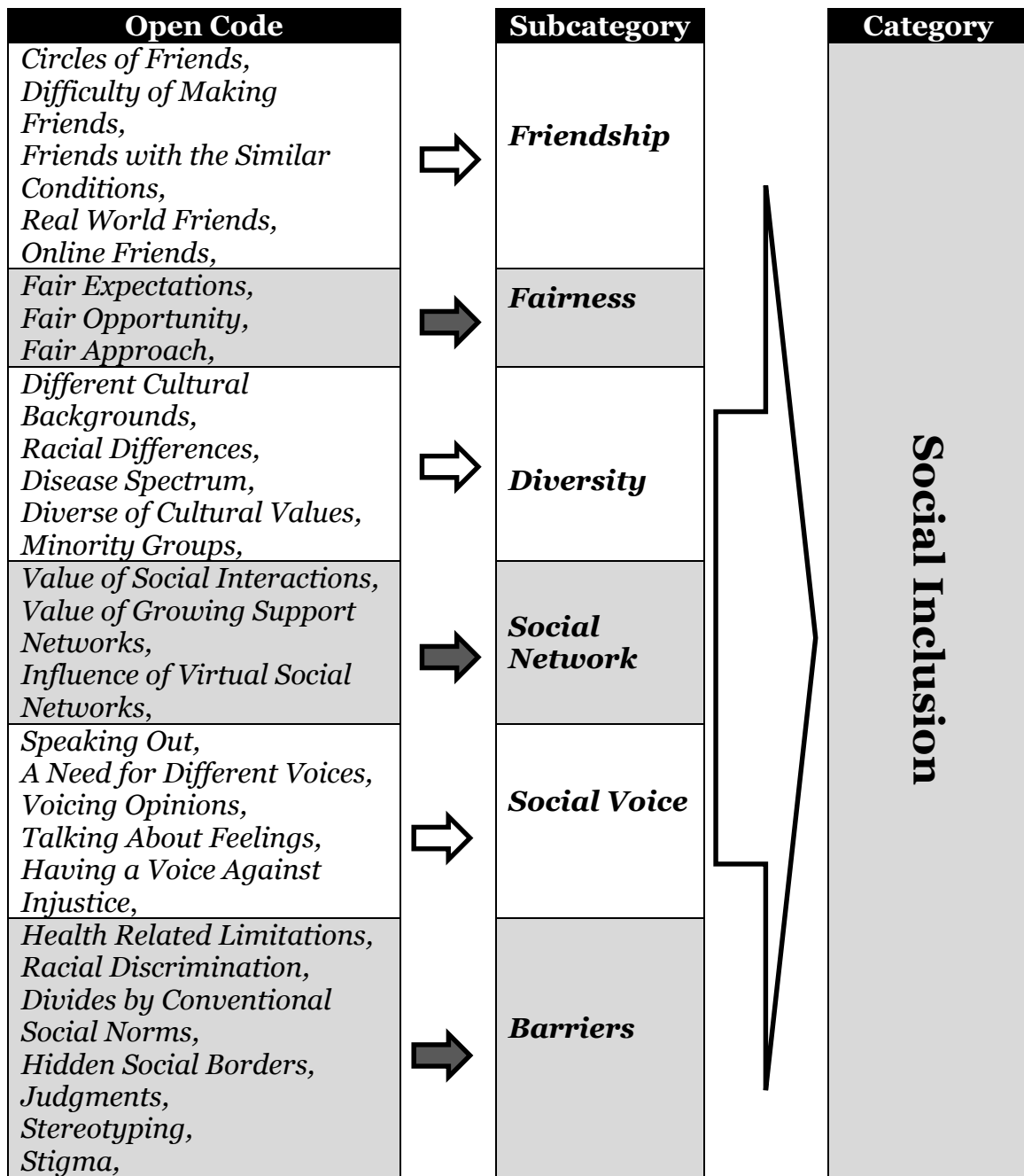


Figure 5.5 The analytical development of the social inclusion category

The selective code of **diversity** as a dimension of **social inclusion** also enfold issues related to the *different cultural backgrounds, racial differences, disease spectrum, diverse of cultural values,* and issues related to *minority groups*. Also, the category of **social inclusion** highlights the importance of dialogues and **voices** in chronic care management by direct attentions to matters related to the importance of *speaking out, a need for different voices, voicing opinions, talking about feelings,* and *having a voice against injustice*.

Some of the important **barriers** against **social inclusion** are also enveloped in the subcategory of barriers that covers issues pertaining to *health conditions, racial gaps, divides by conventional social norms, hidden social borders, judgments, stereotyping, and stigmas*. Figure 5.5 shows the analytical development of the **social inclusion** category.

5.2.5.1 Friendship

This subcategory represents the role of **friendship** in **social inclusion**. It illustrates how **friendship** can support resilience by augmenting and expanding **social inclusion**. **Friendship** was frequently mentioned by the participants as one of the major aspects of **social inclusion**. Many of the participants commented on different aspects of **friendship** as an important means for **social inclusion**. The subcategory of **friendship** captures the participants' perspectives regarding the issues related to *circles of friends, making new friends, becoming friends with the people with similar health conditions, not having real world friends, and making online friends*.

Many of the participants believed that the process of chronic disease management has implications for patients and carers' **friendships**. Many of the participants commented on the ways their conditions have changed their circle of friends and their old friends have been replaced with new ones. They believed that their new friends are more connected to the management of their condition and show more understanding. Presented as evidence here, this point was highlighted by the partner of a patient with arthritis during an interview in this way:

“Because of Caroline’s condition, her circle of friends has changed from the first I knew her till now” (Source: S6_6)

This point was also mentioned by many of the participants who highlighted the role of their new circle of friends, as evidenced here through an interview with a patient with arthritis:

“The fact the people I used to know don’t or can’t accept what happened to me and they don’t want to involve themselves with that, so I lost those friends but the friends I have got now that I know them from my support group, they are great!”

They want to know as much as they can about me and they know how things work.” (Source: S6_5)

Making new friends was also in evidence. Many of the participants highlighted how it is important to make new friends as it enables them to break the barriers of social isolation and become more linked to a wider community. While making new friends was mentioned by many of the participants, most of them also highlighted that for people with a chronic condition and their carers, it is more difficult to make friends because of their conditions. A patient with arthritis highlighted this point in an interview:

“I do make friends and it is important for to become friend with more people but I find it very hard to make them, or define what a friend is” (Source: S1_1)

While many of the participants believed that it is not easy to make friends, they also highlighted that it is easier to be friends with people who have the same condition. It seemed that it was very important for patients to be friends with those who can understand their problems and appreciate their efforts in developing a good relationship. A patient with arthritis highlighted this point in an interview:

“My circle of friends has changed incredibly. Actually, my best friend was diagnosed with RA 10 years ago and she is probably the only friend still around because we are moving not the same thing but a similar circumstance of things and she gets it when I say, you know what, 4 o’clock in the afternoon, I am not even sure that I will get up to today” (Source: S1_1)

One issue that participants also commented on many times was the issue of making friends in the real world. Many of the participants highlighted that they could use social media to make friends in virtual environments. While many of them appreciated the value of making friends in this way, for many of them, real **friendship** entailed real face-to-face interaction in real social settings. For example, a young autistic person highlighted this aspect of friendship as she expressed her view in this way:

“I mean they’re people that I talk to on MSN or I talk to on the phone or things like that, but I don’t really have any local face-to-face friends” (Source: S4_1)

Another patient with arthritis also highlighted this point:

“The internet’s fine, but it would be nice to have local friends”
(Source: S1_2)

However, still many of the participants tried to make friends and stay in touch with their friends through technology, and in particular social media. Many of the participants commented on the value of technology in enabling them to make friends as their condition wouldn’t allow them to make friends in social settings. A diabetic patient with both legs amputated highlighted this point by expressing his view as follow:

“I think it is so fascinating that you can make friends over the net these days. The majority of my friendships are always net based” (Source: S2_1)

In summary, issues related to **friendship** were discussed in this section. The findings here reveal the importance of **friendship** in **social inclusion** and highlight issues related to making friends for patients and carers. Based on the participants’ views, many of the issues related to **friendship** were concerned with patients’ *circles of friends, making new friends, becoming friends with people with similar health conditions, not having real world friends, and making online friends.*

5.2.5.2 Fairness

The selective code of **fairness** represents the need of patients, carers, and their families to be treated fair, and live in a fair environment. The subcategory of **fairness** captures the participants’ perspectives related to *fair expectations, fair opportunities, and fair approaches.*

Many of the participants commented on the issues related to *fair expectations.* Chronic disease usually puts limitations and constraints on the time and physical abilities of patients and carers. The participants highlighted that people should recognise such limitations and have *fair expectations* from people who suffer from

chronic disease. Based on the participants' views, the issue of *fair expectations* were more evident in workplaces where patients were not able to perform as good as other people in the workplace. As evidenced, an autistic person explains this issue in this way:

“If you work more slowly, perhaps more methodically but somewhat obsessively and your productivity is low, then employers aren't, aren't going to look favourably on that either” (Source: S4_1)

Many of the participants also believed that patients require to be given *fair opportunities*. This issue was also more evident within work places as many of the patients were concerned that they were not given fair chances to show their potential and capabilities. The issue of *fair opportunity* was explained by an arthritis patient who was working as a professional trainer but had to change her role after she was diagnosed with rheumatoid arthritis:

“It is really difficult to expect a better role because employers won't give you a chance to actually prove yourself” (Source: S1_1)

Fair approach was also in the findings. The participants highlighted that a community's *fair approach* to people with chronic disease enables them to achieve better outcomes through the management of their conditions. The participants commented on issues such as discrimination, prejudice, and lack of awareness as some of the major barriers against a *fair approach* of people toward patients and carers. Evidenced here, a patient explains his view:

“I really do feel that education and raising awareness will eventually break down the barriers against fairness, I mean it will break down the prejudice and break down the discrimination” (Source: S1_2)

In summary, the selective code of ***fairness*** and its dimensions highlight how ***fairness*** and fair attitudes toward patients and carers can help them to become more of a part of mainstream society. It also shows that patients and carers believe a fair community is the one that has *fair expectations* from them, *provides fair*

opportunities for everyone, and takes a *fair approach* toward the issues related to the management of their conditions.

5.2.5.3 Diversity

This subcategory represents the ***diversity*** of actors involved in chronic care management and a need to address the requirements of each group carefully. It encapsulates the participants' views with regard to *different cultural backgrounds, racial differences, disease spectrum, diverse of cultural values*, and issues related to *minority groups*.

The findings showed that generally, people with chronic conditions, their carers, and their families come from *different cultural backgrounds*. However, many of the participants mentioned that on many occasions, they realised that lay people and practitioners do not distinguish between different cultural and ethnic groups. From the participants' perspectives, it is important that community and healthcare providers understand the cultural and religious needs of patients and carers. As evidenced here, the importance of cultural diversity is explained by a patient with breast cancer:

“My own faith and people around me are important to me and they have been very helpful since I was diagnosed”

(Source: S3_1)

Disease as a spectrum of conditions was also in evidence. Most of the participants mentioned that most chronic diseases are a spectrum of conditions and such spectrums create different subgroups within each disease type, exhibiting different needs and approaches to the management process. The participants also highlighted that it is important for people within communities to recognise such spectrums and realise that people who might be labelled as having the same disease are actually not the same in terms of their conditions and needs. A practitioner explains:

“We generally have to deal with a broader spectrum of people with musculoskeletal disorders” (Source: S6_2)

Also, a patient with arthritis expresses her view in this way:

“We are different because it is a spectrum and people need to understand it” (Source: S1_1)

For some of the participants, the *diversity of races* and how their needs should be addressed was a major concern. Racial differences could be a source and a reason for social isolation and also a concern about discrimination in receiving healthcare services. Some of the participants highlighted this concern as they belonged to some minority groups with different ethnicities. To give an example, a patient with mental health expresses his perspective in this way:

“Some of them [nurses and doctors] definitely are very helpful; they don't look at your ethnicity or race” (Source: S4_3)

People with *different cultural background* have *diverse cultural values*. Many of the participants commented on the *diversity of cultural values* and how different cultures take different approaches to the management of chronic conditions. The participants highlighted that *cultural values* represent the way of living for many of the patients and their families. As such, they must be incorporated into the process of chronic care management by healthcare providers and the community. A carer of a patient with arthritis highlighted this point as she explained:

“In our culture we value living with our elders and we don't like to put them in old people's home. We can't do that”
(Source: S1_2)

Issues related to *minority groups* were also in the findings. The participants highlighted that it is important to understand what the cultural differences of minority groups are and how they live. They believe this is especially crucial in the management of chronic disease as many aspects of the management process are closely related to people's ways of living and their values. As evidenced, a patient from a minority group explains this point as follow:

“When I see a doctor or talk to people, they are often unaware of the cultural differences of minorities and don't have a clue about how we live and express ourselves and how we do things differently” (Source: S3_1)

Another patient from a minority group expresses his view about the difficulties of minority groups:

“it's very hard for minorities to express their views, because any time minorities express their views, and even my ex-wife said to me a couple of times, that if you don't like it, what are you doing here?” (Source: S2_1)

In summary, **diversity** is an important dimension of social inclusion. The selective code of **diversity** emerged as the representation of the different aspects of **diversity** in chronic care management. The findings in this section revealed that *cultural diversity, ethnical diversity, and disease spectrum* are the three major origins of **diversity** in chronic disease management. As the participants highlighted, the major issues related to **diversity** in chronic care management are *different cultural backgrounds, racial differences, disease spectrum, diverse of cultural values, and issues related to minority groups*.

5.2.5.4 Social Network

This subcategory highlights the significance of having a diverse **social network** to support **social inclusion**. The findings showed that many of the participants placed emphasis on the significance of having a strong **social network** that could enable them to become a part of the social processes and social activities. The subcategory of **social network** captures the participants' views related to *the value of social interaction, the value of growing support networks, and the influence of virtual social networks*.

The need and *value of social interaction* and social networking was in the findings. Some of the participants mentioned how important it was for them to have a **social network** and how such a network would help them to cope with their condition and deal with the hardships and difficulties of managing their conditions. Presented here as evidence, the *value of social interaction* was explained by a patient with arthritis in this way:

“So, you can just feel a little bit more, like you are not alone, and you know there are people out there who actually understand what you are going through” (Source: S6_5)

Some of the participants also believed that it is not only important to have a *support network*, it is important to make sure it is not a temporary network, but that it *grows* and becomes a long term platform of interactions. A mother of an autistic child explained this point:

“At some stage I was really worried to lose the whole support I was getting from them but it just went on and on and on and eventually it’s just this huge network that we all rely on”

(Source: S4_3)

However, as many of the participants highlighted, for some people, the lack of having a **social network** made it difficult for them to make friends or get support from their local community. Based on the participants’ views, not all the patients and carers are the same and issues such as not having a job, being physically restricted, or lacking in self-confidence narrowed opportunities for many of the patients or carers to meet new people. Obstacles like these prevented some of the patients and carers from going out, joining clubs and making friends. However, many of the participants commented on how the use of technology, such as social networking sites, enabled them to enjoy having *virtual social networks* and making friends in the virtual world. As evidenced here, the role of *virtual social networks* was explained by a patient with arthritis:

“I had many internet friends, who I still have today. Even though they didn’t know my problems they made me feel a lot better. They gave me hope and kept me in touch with reality”

(Source: S1_1)

This point was also highlighted by a young autistic person in this way:

“The majority of the people I know and I talk to are net based”

(Source: S4_1)

The presented findings in this section have focused on the role of **social networks** in supporting **social inclusion**. It highlights how the participants believed that **social networking** could improve the **social inclusion** of patients and carers by commenting on issues related to *the value of social interactions, the value of growing support networks, and the influence of virtual social networks*.

5.2.5.5 Social Voice

The subcategory of **social voice** represents the different ways that the voices of patients and carers can be heard and how it can support social inclusion. The **social voice** captures the participants' opinions and views about the issues related to *speaking out, a need for different voices, voicing opinions, talking about feelings, and having a voice against injustice.*

The findings showed that many of the participants commented on the importance of *speaking out* and making sure that their voice is heard. Many of the patients and carers believed that many of the policies, procedures, and decisions are not comparable with their needs and their opinions were not sought about matters that would affect the management of their conditions. So, for many of them it was crucial to *speak out* and make sure their opinions and perspectives were getting across to those making decisions and changes. A carer's perspective is presented here as evidence of the importance of speaking out:

“We need to consider all the avenues and we must speak out about how we want them to make changes to their policies”

(Source: S4_3)

For many of the participants, the importance of having a voice was to make sure that the needs of *different voices* of different groups are heard. They believed that not all chronic diseases are similar and each has different impacts on patients, carers, and their families. So, these participants commented many times on the need for having voices for different groups of people who might be affected differently chronic disease and have different needs. A patient with arthritis explains this view here:

“We want to ensure that episodic disability gets a voice”

(Source: S1_2)

Many of the participants also stressed on the importance of *voicing opinions* for making positive changes in the community. They believed that talking about patients' and carer's issues can eventually raise awareness within community and lead to the changes that meet the needs of these groups. As evidenced, an autistic patient explains her view about making changes in this way:

“I'm sure even one little opinion can make differences, even if one person feels less isolated from my words and experiences then it's been worthwhile” (Source: S4_1)

For some of the participants, having a *voice* within community was a way to *resist against injustice*. Some of the participants believed that they themselves or those under their care were treated unfairly within the community because of their conditions. Many of them had concerns about the sharing of resources they were receiving within the community and believed that in many instances there were unbalanced and unjustified approaches to allocating resources to patients, carers, and their families.

Many of the participants believed that voicing their concerns and protests is their responsibility as it was an act of *protesting against injustice*. Evidenced here, this point is explained by a carer of an autistic child:

“When it comes to my child, my voices are extremely strong against injustice because I cannot stand it and I think nobody should put up with injustice” (Source: S4_3)

As presented in this section, people involved in chronic care management, in particular patients and carers, need to have their voices heard within the community. They need to have input to different aspects of their social life, as the management of their conditions and the social life around them are intertwined.

The findings this section show that *speaking out, a need for different voices, voicing opinions, talking about feelings, and having a voice against injustice* were the major aspects of **social voice** in chronic care management.

5.2.5.6 Barriers

The selective code of **barriers** indicates that **social inclusion** in chronic care management is not without challenges and uncertainties. **Barriers** was one of the strongest themes that emerged through data analysis as many of the participants frequently raised their concerns about the different **barriers** they had experienced through years of being involved in chronic care management. The subcategory of barriers encapsulates the participants' views concerned with *health related*

limitations, racial discrimination, divides by conventional social norms, hidden social borders, judgments, stereotyping, and stigma.

The findings showed that many of the participants believed that physical or mental limitations caused by patients' state of health, were major **barriers** to patients and carers **social inclusion**. Generally, over time, many of the chronic diseases such as arthritis, diabetic, or dementia impose physical or mental limitations or disabilities on patients.

Carers who look after patients with physical or mental disabilities are also very short on time to socialise. Many of the participants highlighted that such mental or physical limitations would not allow the patients and carers to actively participate in social events or socialise with other people. This point was explained by a patient with arthritis who attributed her socialising with others to her physical limitations:

“Some days you are having a bad day and you can't get out of bed, and your friends actually won't see you because you cancelled the lunch, or appointment, or whatever with them”

(Source: S1_1)

Also, a patient with autism highlighted how his mental issues stopped him socialising with other people:

“To be honest I just don't want to be involved with them [school friends] really. I'm not in contact with them whatsoever. I'm sort of just trying to be on my own. On my own two feet really, because then I can live and do things at my own pace” (Source: S1_1)

One of the issues frequently mentioned by the participants was *racial discrimination*. Many of the participants from different minority groups highlighted this issue by pointing to the lack of resources and services that were available for the management of their conditions.

Some also believed that because of their race they are in a lower priority of healthcare services. As an illustration, a young black male with breast cancer highlighted this point:

“You find blacks will be isolated to a certain specific area and have access only to certain medical services” (Source: S3_1)

The findings show that following *conventional social norms* was sometimes a point of *division* between the patients and their communities. Many of the participants commented on the role of social norms as a gauge to measure how someone can be accepted by a group or by communities.

Because of their conditions, many patients were not able to follow those conventional social norms, such as some behaviours or language, and therefore they felt that they were marginalised within groups and within the community. Evidenced here, a young autistic male explains this issue:

“Because, it’s the way they talk to each other that I find difficult to adapt to , so I decided not to go out with them anymore”

(Source: S4_1)

Some of the participants believed that there are some *hidden social lines and borders* between patients and those who don’t have any clear sign of illness and are considered normal and healthy. They highlighted such *hidden* but real borders that won’t let that people with explicit chronic illness to normally and easily blend with other people and become integrated into social activities. A person with autism highlights this issue in this way:

“Like for instance there are invisible lines and there is a them and an us thing” (Source: S4_1)

People’s *judgment* was also in the findings. Many of the patients, carers, and parents of the patients were concerned that because they wanted to protect themselves or their children against people’s misjudgements, they chose not to interact and socialize with other people unless they have complete trust in them. They also highlighted that because of these concerns, they have very limited social interaction and a very small trusted circle of friends. A parent of an autistic child explains:

“From the beginning we decided not to talk to people about it and stay away from their judgements. Your know people are judgmental and everyone relates to it in a different way”

(Source: S4_3)

The participants also commented on the issue of *stereotyping* as an obstacle to **social inclusion**. Many of the participants highlighted that the fixed and oversimplified image that people have about some chronic disease and those who have them, make it difficult to be yourself and be a part of the community. Many of them expressed their frustration as they felt that people’s approaches toward them are based on some clichés, so they have to explain themselves to others and make sure that their friends or colleagues are not getting incorrect impressions about them.

“It is annoying and frustrating! You go out with them and you feel they have the old stereotypes and fears” (Source: S1_1)

It seems that *stereotyping* comes hand in hand with *stigma*. The participants who highlighted the issues of *stereotyping* also pointed to the issue of *stigma*. Talking about fears and misconceptions, many of the participants mentioned frequently that they felt their personality and quality as a human were associated with the characteristics of their conditions. They mentioned frequently that stigmas are a barrier to social inclusion. The issue of *stigma* is presented by a patient with mental health problems, as evidenced here:

“It is really difficult to make real friends because mental health problems are so stigmatised as people who are mad and crazy” (Source: S4_1)

The findings in this section showed that **social inclusion** in chronic care management is not without serious challenges and **barriers**. The selective code of **barriers** represents such challenges and barriers by highlighting a number of issues that the participants mentioned. Many of the identified **barriers** were related to the race and ethnicities of the patients and carers, while some were pointing to the characteristics of chronic disease and the people who have them.

The findings in this section highlighted some of the major challenges and **barriers** including *health related limitations, racial discrimination, divides by conventional social norms, hidden social borders, judgments, stereotyping, and stigma.*

5.2.5.7 Summary of the Findings Related to Social Inclusion Category

There are a number of important findings related to the subcategory of **social inclusion**. The first important finding is related to issues pertaining to **diversity**. The findings show that community resilience can be supported by its **diversity**. **Diversity** offers new opportunities for **social inclusion** and adds new capacities to *community resilience*.

The findings show that such opportunities and capacities can be in the form of adding new perspectives, new values, and new ways of doing things within the community. In the context of chronic care management in particular, **diversity** can be seen as the different and sometimes innovative means that people with different backgrounds and conditions use to approach to the management of chronic disease.

Another important finding was related to the emergence of **social voice** as a dimension of **social inclusion**. This finding suggests that **social inclusion** entails the existence of different voices within community. In another words, **social inclusion** gives voice to people to openly talk about their opinion and be able to hold responsible those who have the power of making decisions for their community.

The findings also show that **social inclusion** is not an easy process and comes with its own challenges and **barriers**. The findings show that those **barriers** are linked to the other aspects of **social inclusion** (e.g. **diversity**), and can adversely influence their positive role in **social inclusion**. In chronic care management, these **barriers** are partly related to the characteristics of chronic disease, but most of them are attributed to how chronic illness and those who have them are seen and judged by other people.

5.3 Key Findings

The findings showed that adaptation to chronic care management occurs at two the levels of individuals and community.

- At the individual level, the findings revealed that the adaptation is dependent on the patients and carers' optimism and endurance.
- The findings also showed that at the community level, adaptation is linked to community awareness, community learning, and how much a community gives recognition to the issues related to chronic care management.

Table 5.2 presents an overview of the key findings related to the *community resilience* theme

Table 5.2 A summary of the key findings related to the community resilience

Theme	Key findings	Meaning	Category
<i>Community Resilience</i>	Individuals' Adaptation	Strategies taken by individuals to adapt to chronic care management	Adaptation
	Community Adaptation	Adaptation can be supported at the community level	Adaptation

6 EMERGENCE OF SOCIAL MEDIA CONSTRAINTS

6.1 Introduction

This chapter presents the findings in relation to the *Social Media Constraints* theme. It provides detailed information about the emergence of this theme and illustrates how this concept was constructed through the process of open and selective coding. Similar to the other two themes presented in Chapters 4 and 5, the demonstration of chain of evidence is at the heart of this chapter.

The theme of *Social Media Constraints* was initially a characteristic of another theme i.e. *Affordances of Social Media*. However, as the process of coding and constant comparison went on, this category emerged as one of the key themes related to the research question. The emergence of this theme was a serendipitous finding and as the coding went on, it appeared as an important issue in relation to the use of social media in chronic care management. As this chapter shows, many of the participants highlighted different aspects of *Social Media Constraints* and it became evident that this theme is one of the major concepts that requires particular analytical attention.

The presented materials in this chapter highlight the participants' perspectives regarding the constraints of social media in the process of chronic care management. This is the third and the last chapter within this thesis that presents the findings of this study.

6.2 Social Media Constraints

The theme of *Social Media Constraints* illustrates the major uncertainties, concerns, and constraints against the adoption and use of social media in the management of chronic disease. The five selective codes that constitute and underpin this theme are ***emotional discomfort, lack of information quality, legal concerns, lack of self-efficacy, and social pressures.***

These selective codes are grouped into two major categories of **Perceived Constraints** and **Experienced Constraints**. Figure 6.1 shows the analytical development of the *Social Media Constraints* theme.

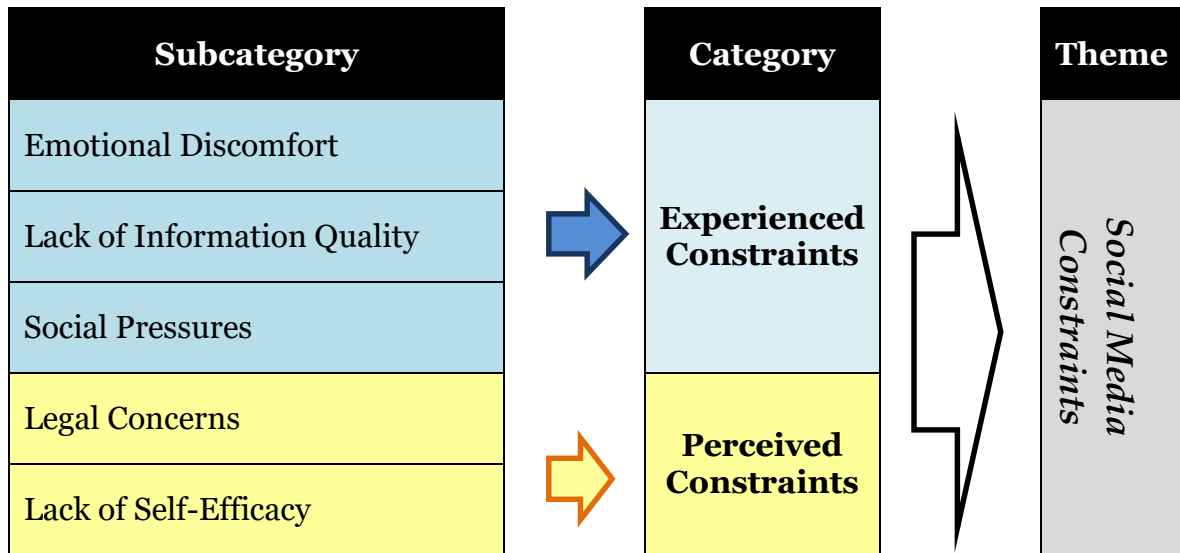


Figure 6.1 The analytical development of social media constraints theme

6.2.1 Chain of Evidence

Table 6.1 represents an overview of the chain of evidence (with reference to Table 3.6) that led to the emergence of the *Social Media Constraints* theme.

Table 6.1 An overview of chain of evidence: linking data sources to the emergent theme of social media constraints

		<i>Social Media Constraints</i>	
		Experienced Constraints	Perceived Constraints
Data Sources	Focus Group	S1_1	S1_1
	Online Forums	S2_1, S2_3, S3_1, S3_2, S4_1, S4_2	S1_2, S2_2, S2_3, S3_1, S3_2, S5_2
	Interview	S6_1, S6_2, S6_4, S6_5, S6_6	S6_1, S6_3, S6_4, S6_5, S6_6

6.2.2 Experienced Constraints

The category of **experienced constraints** represents the constraints that were experienced by the participants as they use social media in practice. This category encapsulates the participants' views concerned with the **emotional discomforts** that were experienced by the participants by the use of social media, the **lack of information quality**, and the **social pressures** caused by the use of social media.

Experienced constraints highlights the participants' perspectives about **emotional discomfort** by capturing the participants' views with regard to social media as a *source of bad news, creating worries, being depressive, making patients and carers feel emotionally down, and making them feel miserable*.

The subcategory of **experienced constraints** also encapsulates the participants' views about **lack of information quality** by highlighting their comments on the issues related to *information overload, information relevancy, lack of control over the content, and reliability of information sources*. This category also shows how **social pressures** can act as a constraint against the use of social media in chronic disease management through *creating inequities, social isolations, social gaps, and concerns about the protection of the social images*. Figure 6.2 presents an overview of the analytical development of this category.

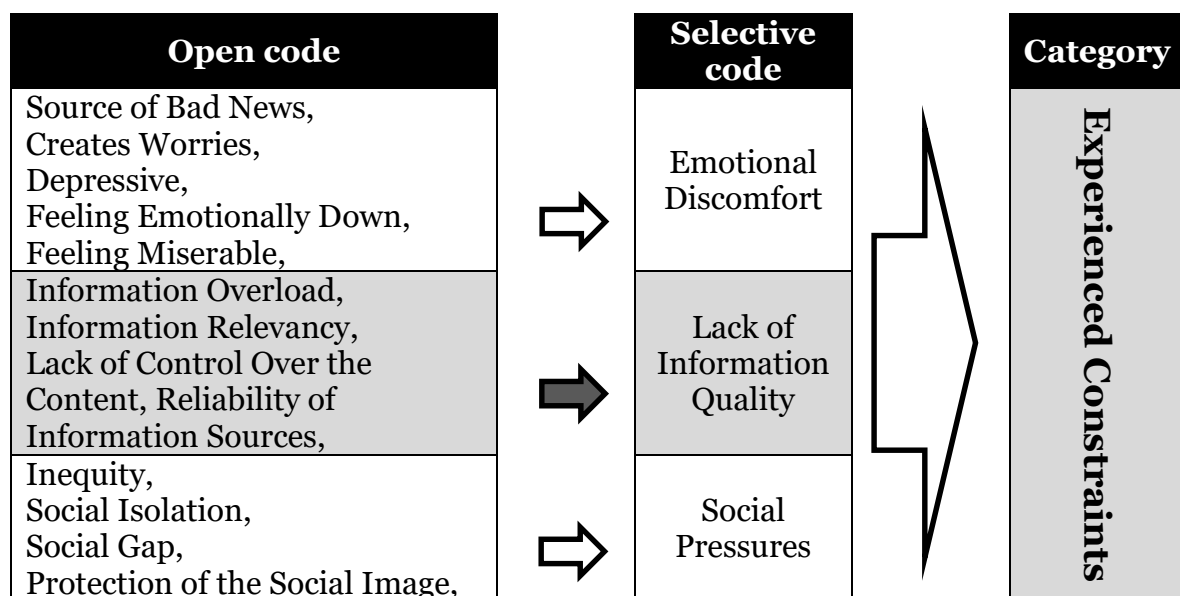


Figure 6.2 The analytical development of experienced constraints category

6.2.2.1 Emotional Discomfort

The selective code of **emotional discomfort** illustrated how the use of social media can create the negative feeling of emotional discomfort for patients, carers, and families. Many of the participants raised the concern that the use of social media for management purposes can cause **emotional discomfort** to them. The main issues commented by the participants were concerned with the impact of social media as being *a source of bad news, creating worries*, being *depressive*, making them *feel emotionally down*, and making them *feel miserable*.

Social media as a *source of bad news* was highlighted by many of the participants. Many of them complained that the news they were receiving through social media were mainly about other people's pain and suffering. The following quote from a patient with breast cancer, who cast doubts on the suitability of patient forums, presents evidence supporting this impact of social media:

"You don't hear good news on there. You just hear the bad news" (Source: S3_1)

Many of the participants also commented on the negative impact of social media in making them *worried* about their conditions. As evidenced, a patient with arthritis highlights this impact by explaining why she was irresolute to continue using an online support group:

"I did find that reading what other people were going through was making me think worst case scenario a lot more of the time" (Source: S2_1)

The participants also highlighted that the use of social media could make them *feel depressed*. This concern was mentioned many times by the patients and carers. They emphasised that the type of information that exists on social media could make them depressed. In the following excerpt, a patient provides evidence on this issue by expressing her feelings:

"I didn't need to read two hundred messages a day from people who were obviously not very uplifted themselves. So I stopped using the forum as it made me feel depressed"
(Source: S1_1)

This issue was also highlighted by a carer who also explained in an interview why she was hesitant to spend too much time on an online support group she was a member of:

“I try not to overdo it because it could be very depressing at times” (Source: S6_6)

The findings also revealed that social media can make patients and carers *feel emotionally down*. This point is evidenced in the following passage from an interview when a patient was asked why he stopped using an online support group:

*“I mean actually what that group did to me was it made me think that f**k! You know, there were so many people worse off than me. So, if you're feeling sad it can drag you down”*
(Source: S2_1)

The impact of social media in making patients and carers feel *miserable* was also another concern frequently mentioned by the participants. This impact of social media is evidenced in the following excerpt extracted from an interview with a carer of a diabetic patient when she was asked about her opinion on an online patient forum:

“To be perfectly frank, it is not everyone's cup of tea. And I know from speaking to a couple of people who'd been there and not gone back that it isn't everyone's cup of tea. Because it's sometimes so miserable” (Source: S2_2)

The findings in this section highlight some of the *constraints* of using social media in the management of chronic disease. The above findings show that social media can create **emotional discomfort** for patients and carers by being *the source of bad news, creating worries, being depressive, making them feel emotionally down, and making them feel miserable*.

6.2.2.2 Lack of Information Quality

The findings highlighted some major concerns regarding the **quality of information** imparted via social media. To highlight the issue of **quality of information**, the participants mainly expressed their concerns about *information overload* and the high volume of information accessible through social media, the

relevancy of the information there, the *lack of control over the content*, and the *reliability of the source of information* on social media.

Many of the participants commented on the issues of *information overload* in social media and the existence of the high volume of information with no clear impact on the management process. As presented in the following excerpt, a practitioner's view provides evidence on this concern as she questions the value availability of the high volume of information in social media:

“People can access a whole lot of information on social media but there is no evidence that just providing people with more information changes what they do” (Source: S6_2)

This point was also highlighted by a patient as she explained her view about the existing material on a patients' forum:

“I like to read up on that as long as I can get my head around the information there and the volume of information doesn't freak me out” (Source: S1_1)

The issue of *information relevancy* was also commented many times by the participants. The findings show that the amorphous structure of social media and the ability of users to generate content have made it difficult for the patients and other actors to pinpoint the *relevant information*. The following quote from a manager of a support organisation presents evidence concerned with the issue of *information relevancy* in social media:

“The biggest challenge for us is the information we have on our Facebook is up to date and relevant” (Source: S6_1)

The issue of information relevancy was also highlighted by a patient who participated in an online patient forum:

“Well I find the forum is really good but I think you do have to be very careful. There is an awful lot of things I've learnt from other people really, but some will say that you can do this, if you take this pill and it will do this, that and the next thing you know. So I think you have to be really, really

careful about what is relevant to you and what is not” (Source: S6_5)

Another issue that was commented by the participants was the *lack of ability to control the content* generated on social media. This point was a major concern in particular for the practitioners, as they had to make sure the content on their social media platforms were correct and relevant. However, such control over the content would decrease the level of participation and contributions by the patients and carers in online discussions. As evidenced below, this issue was clearly mentioned by a manager of a support organisation during an interview:

“So the risk is that we will have little or no control over the content of our Facebook we if really want to get our consumers involved” (Source: S6_1)

The other issue that contributed to the uncertainties around the **quality of information** in social media, as mentioned by the participants, was the concerns about the *reliability of the sources of information*. This concern was echoed from a carer’s perspective when she was asked about her concerns of using social media for managing her condition:

“The forum will give you a lot, but again I find, you're better off talking to somebody who is expert rather than getting it from an unreliable source” (Source: S6_6)

Also, this point was highlighted by a patient as she explains how she would treat the information she found in a patients forum:

“We don't have much knowledge about medical things so when I go on the forum I wouldn't listen to what they're saying without listening to my GP as well, you know, because it could be dangerous I suppose really” (Source: S3_1)

The findings in this section highlight some of the constraints of using social media concerned with the **quality of information** on social media. These findings show that while social media is a source of information for patients and carers there are considerable concerns around the *relevancy of the imparted information* on social

media, the *lack of control over the generation of the contents* there, and *the reliability of the source of information*.

6.2.2.3 Social Pressures

The **social pressures** subcategory illustrates how the use social media can create concerns for the actors around their day-to-day social lives. The findings of showed that **social pressures** were important constraints of using social media in the management of chronic disease. As the participants highlighted, most of these concerns are related to the issues of *inequity, social isolation, social gaps*, and the *protection of the social image*.

Inequity was one of the major concerns around the use of social media as commented by the participants. The participants mentioned on many occasions that social media can create *inequity* among the patients and carers in their access to the resources valuable to the management of their condition. This point was highlighted by a specialist who raises her concern about the accessibility and equitability of resources over social media:

"Social media is a great resource for the patients but the issue at the moment is how you can make this resource accessible and equitable to everybody who is going to use it" (Source: S6_4)

The issue of *social isolation* was also highlighted by the participants. Many of the participants argued that social media can make them *socially isolated* because they have limited ability to participate in social activities and everyone expects them to interact via social media. This issue was highlighted by a carer as she expressed her perspective on the role of technology in social isolation:

"Because there are technologies you are expected to do a lot for yourself and do it at home and you do become after a certain time very isolated" (Source: S1_2)

The issue was also highlighted by a patient with arthritis when she felt *socially isolated* as her friends were only interacting with her through social media:

“I have friends and they are all on Facebook and you know, they do stuff together and they don’t tell me about it and but only communicate with me on Facebook but you know I like to hear about what they did” (Source: S1_1)

The findings also show that social media can contribute to *social gaps*. Many of the participants focused on the role of social media in creating social gaps among patients or carers. As highlighted by a specialist, those patients who use social media are different from those who don’t use technology:

“One thing is important to remember is that people who use social media are in a different social state from those who don’t use technology” (Source: S6_4)

Another finding is concerned with the *protection of the social image* through social media. This issue was commented many times by the participants as they believed social media creates an image of a person or an organisation in the mind of other users as well as the public. Therefore, any careless activity can damage that image. As evidenced, this concern was mentioned in an interview with a manager of a support organisation as she expressed the risks for their organisation in using social media:

“I reckon for organisation like us there are quite a lot of risks with technology. So the risks are that somebody puts something inappropriate up on Facebook or on Twitter or someone puts something up that is incorrect and that would present a wrong image of our organisation” (Source: S6_1)

The findings about the subcategory of **social pressures** show that the use of social media in the management of chronic disease can be negatively affected by some social issues including *inequity, social isolation, social gaps, and social image*.

6.2.2.4 Summary of the Findings Related to the Experienced Constraints Category

The presented findings in this section highlight a number of major constraints to the use of social media in chronic care management. These emergent constraints, as the findings revealed, are the results of people’s experiences of using social media and the ways they encountered and understood them through process of chronic care management. The major aspects of these **experienced constraints** are the

emotional discomfort that the use of social media can create for the actors, **the lack of Information quality** that is accessible through social media, and **the social pressures** that the use of social media can create for patients and carers.

6.2.3 Perceived Constraints

While some of the constraints were experienced in practice by the participants, the findings showed that some of the constraints of social media in chronic care management were merely perceived by them. The category of **perceived constraints** illustrates the constraints of using social media perceived by the participants as potential risks or uncertainties around the usefulness of using social media by the participants. The major constraints mentioned by the participants in this category are grouped into two selective codes of **legal concerns** and **lack of self-efficacy**.

Legal concerns highlights the participants' perspectives regarding *confidentiality concerns, lack of regulations, and the virtual nature of social media*. The category of **perceived constraints** also captures the participants' views with regard to **self-efficacy** and the issues related to *age dependency, computer literacy, lack of confidence, and language barriers*.

Figure 6.3 presents an overview of the analytical development of this category.

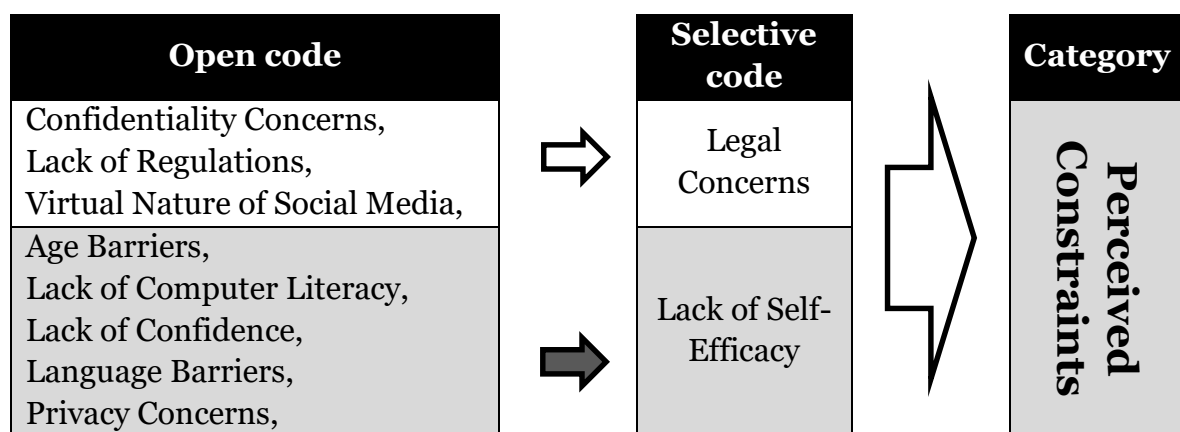


Figure 6.3 The analytical development of perceived constraints category

6.2.3.1 Legal Concerns

This selective code elucidates the legal concerns around the adoption of social media for managing chronic disease. The findings show that the use of social media creates

legal concerns, especially for practitioners, around the potential implications of using these technologies. Many of the practitioners who participated in this study mentioned three major concerns about the possible **legal implications** of using social media for practitioners. These potential implications were mainly related to the issues of *confidentiality, lack of regulations, and the virtual nature of social media environments*.

Based on the participants' perspective, there are *confidentiality concerns* when it comes to the use of social media by practitioners for management purposes. The following passage from an interview with a GP highlights this concern:

“We are bound by laws that say we cannot talk to other people about our patients. There is no legal problem in terms of how I talk to my patient, but in terms of using technology such as social media there is” (Source: S6_3)

The issue of *lack of regulations* and their legal implication of using social media for practitioners was also mentioned frequently by the participants. As evidenced, in an interview with a specialist, she identified the possible legal implications of using social media for practitioners due to the lack of clear regulations in that area:

“In terms of Facebook, up until recently there was no facility and regulation for doing social media-based consultations and there were potential medical legal implications” (Source: S6_4)

The findings also reveal that the *virtual nature of social media* can pose legal challenges for the practitioners, as practitioners need to physically see their patient and speak to them. In the following excerpt, a GP highlights some of the legal boundaries of his practice. He highlights how social media as a virtual environment can pose legal challenges to the practice:

“There is a potential legal practice implication for you if you as a doctor make recommendations without having examined and spoken to your patients” (Source: S6_3)

The findings in this section highlight some of the constraints against using social media in the management of chronic disease that are mainly related to **legal**

concerns. The above findings revealed that the use of social media can create serious concerns for practitioners due to issues related to *confidentiality, lack of regulations, and the virtual nature of social media environments.*

6.2.3.2 Lack of Self-Efficacy

This selective code illustrates how some of the personal characteristics, skills, and beliefs can act as a constraint in using social media in the management of chronic disease. As the participants identified, the major issues concerned with the **lack of self-efficacy** in using social media were related to the participants' *age*, their *lack of computer literacy*, their *lack of confidence* in using technology and social media, *language barriers*, and issues concerned with *privacy*.

The findings show that *age* was a factor that affected how social media were used by the participants. The findings highlight that younger patients and carers are more likely to use social media for management purposes compared to older patients or carers. This indicates that there were uncertainties around the use of social media by older people as they have less interest, knowledge, or skills in using new technologies such as social media. This issue was highlighted in an interview with a specialist as he mentioned the limitations of using social media for communicating with his older patients:

“Because arthritis patient are all older I don’t think that we can communicate with them through Facebook” (Source: S6_4)

Another finding of this study is related to the impact of patients' and carers' *computer literacy* on their ability to use social media. The findings show patients and carers with poor *computer literacy* were less capable of taking advantage of the features of social media to support the management of their conditions. In a focus group interview, when two participants commented on the role of social media in the management of their condition, another patient who had little knowledge about computers expressed her view as follows:

“I don’t understand what any of that is because I was a swimming instructor” (Source: S1_1)

This point was also highlighted by a carer. She considered herself a lucky person because she knew how to use a computer and access information in social media platforms:

“I’m lucky in the sense that I’m pretty proficient and experienced in navigating around the Internet, going to Facebook, and sending emails, and I know how to find good information” (Source: S6_6)

The findings also identified that many of the participants did not feel *confident* to participate in patients’ forums or publish their thoughts in social media platforms. As evidenced, one of the patients whose first language was English commented on her *lack of confidence to generate content* in social media platforms as follow:

“I don’t do blogs or Twitter. You know, I didn’t like English at school and when you are not that good in English you don’t have the words and the confidence to write” (Source: S1_1)

Another issue that contributed to the uncertainties related to ***lack of self-efficacy*** was the issue of *language barriers*. This issue was commented on many times by the participants, as they believe that language plays an important role in social media related activities. This point is evidenced in the following excerpt extracted from an interview with a manager of a support organisation:

“The interviewer: What are the other possible challenges when it comes to social media?”

Participant: Certainly language. Something that we haven’t done well at all in the past with our ethnics groups with none English background” (Source: S6_1)

The issue of *privacy* was also in the findings. The participants highlighted significant concerns around *privacy*, and how it would create uncertainties in social media-based activities. The typical comments from the participants about this issue were:

“Sometimes, some people find it easier to unburden themselves anonymously” (Source: S4_1)

Or

“I just needed to talk to somebody about this problem but it was difficult to talk with people who knew me on the forum”

(Source: S3_1)

The findings about the subcategory of ***lack of self-efficacy*** show that the use of social media in the management of chronic disease can be negatively affected by some personal characteristics and attributes including *age, lack of computer literacy, lack of confidence* in using technology and social media, *language barriers*, and issues concerned with *privacy*.

6.2.3.3 Summary of the Findings Related To Perceived Constraints Category

The findings in this section show that along with the constraints of using social media that are directly experienced by patients and carers, some of the constraints are only based on their perception of social media.

The **perceived constraints** show that people’s perceptions of the implications of social media can stop them using these technologies. In chronic care management these perceptions, according to the findings, are related to the legal concerns of using social media for chronic care management, and users lack of confidence and self-efficacy in dealing with these technologies.

Although these constraints are not experienced directly by the users, concerns about the potential implications of social media are too strong and convincing and stops some of the patients and carers to use these technologies.

6.3 Key Findings

- Findings in this chapter highlighted some of the key constraints of using social media in the process of chronic care management.
 - Some of the identified constraints are already being experienced by patients and carers.
- In addition, the findings in this chapter indicate that some of the constraints of using social media are not necessarily based on patients or carers experiences.

- Many of these constraints are merely based on patients and carers' perceptions about the features and capabilities of social media (e.g. *lack of computer literacy*).

Table 6.2 provides an overview of the key findings of this chapter.

Table 6.2 A summary of the key findings related to social media constraints

Theme	Key findings	Meaning	Category
Social Media Constraints	People perceived that social media can adversely impact the management process	Social media has the potential to harm some aspects of chronic care management	Perceived Constraints
	People perceived and experienced that social media can adversely impact the management process	Social media is experienced as an issue to some aspects of chronic care management	Experienced Constraints

7 DISCUSSION

7.1 Introduction

As was mentioned in Chapter 1, the broad purpose of this study is to enhance understanding of how social media can support the resilience of healthcare communities. In light of this purpose, this chapter delineates the significance of the key findings of this study in relation to the existing literature. The material presented in this chapter therefore aims to highlight and underscore the areas of literature that can be enriched or expanded through the key findings of this study.

The discussions presented in this chapter aim to fulfil three goals. First, by linking the key findings to the extant literature, the aim is to see how the emergent concepts are discussed by other scholars, and, wherever possible, how the extant literature can strengthen the key findings by corroborating and confirming them. This approach also helps to position the key findings of this study within the broader landscape of theory and practice.

The second aim of this chapter is to underline how and to what extent the key findings can expand the existing literature. This expansion is achieved in two fashions. First, by identifying areas within the existing literature, the key findings can provide further clarification or add new dimensions to these areas. Second, the identified areas may contradict the key findings. This approach can lead to interesting discussions by shedding light on those issues that may require further scholarly investigation and research.

The third aim, and bigger picture of this chapter, is to delineate how a preliminary understanding of a phenomenon in the social world (as presented in Chapter 2) can be modified, extended, and refined by new observations and the interpretation of empirical evidence. In other words, the aim here is to discuss how intellectual and theoretical transitions from a preliminary conceptual model that is grounded in the existing literature to an emergent theory that is grounded in empirical data can help

sharpen our understanding of a phenomenon with complex social and technological dimensions.

In the context of this study, such a new understanding enables me to pinpoint the concepts and relationships that lead to a proper and accurate answer to the research question. As such, in the following sections of this chapter, I will discuss the key findings of this study in the light of the existing literature. In so doing, Section 7.2 presents how the key findings related to the emergent themes (that is, *Affordances of Social Media*, *Community Resilience*, and *Social media Constraints*) extend or enrich the existing literature. In addition, Section 7.3 discusses how the empirical findings of this study enabled me to refine and sharpen my understanding of the preliminary conceptual framework presented in Chapter 2.

7.2 Significance of the Key Findings

As Glaser and Strauss (1967) suggest, the findings resulting from a grounded-theory method should be integrated into the extant literature of different disciplines. Therefore, this section provides an overview of how the findings of this study can be integrated into and supported by the existing literature from various disciplines. These disciplines include sociology (e.g. Blanchard & Horan, 1998; Coleman, 1988), information systems (e.g. Butler, Bateman, Gray, & Diamant, 2014; Oh et al., 2013), psychology (e.g. Baker & Moore, 2008; Winter & Koger, 2011), computer-mediated communication (e.g. Baym, 2009; Vaast & Kaganer, 2013), environmental sciences (e.g. Magis, 2010; Stewart et al., 2009), and health informatics (e.g. Adams, 2010; Toussaint & Coiera, 2005).

In the next few sub sections, I discuss and elaborate on the key findings of this study and their relationship to the extant literature, namely *Affordances of Social Media* (Section 7.2.1), *Community Resilience* (Section 7.2.2), and *Social media Constraints* (Section 7.2.3).

7.2.1 Key Findings Related to Affordances of Social Media

This section provides a concise discussion about the key findings related to the emergent theme of *Affordances of Social Media*. Table 7.1 presents an overview of the

key findings discussed in this section and their significance. The following discussion relates to the categories *building a sense of community* and *emotional support*.

Table 7.1 Key findings related to affordances of social media

Theme	Category	Meaning	Key findings	Significance
Affordances of social media	Building a sense of community	Draws on commonalities over social media to create a sense of community	Most participants felt that social media helped them build a sense of community	Delineates the characteristics of online patients' communities
	Emotional support	Information and interactions over social media can create emotional comfort	The data revealed many examples of people who found comfort and support from the use of social media	A serendipitous finding that represents a novel affordance of social media

7.2.1.1 *Building a sense of community*

Building a sense of community was found to be one of the important *Affordances of Social Media* in managing chronic disease. Many of the participants elaborated on the significance of this affordance by underlining its dimensions and its potential influence in management-related activities. For example, patients and carers frequently mentioned how social media enabled them to support each other and build rapport.

The influences of this *affordance of social media* were clearly traceable across all three emergent themes. The tendency towards *building a sense of community* via social media was evident in the patients' and carers' discussions and activities in the online forums. By reflecting on their own and others' communications, they elaborated on how the use of social media formed their perceptions of an online community and influenced their interactions with other patients and carers in forums (Theme 1: *Affordances of Social Media*). For example, by giving prominence to common attributes, such as being in the same age group, the participants accentuated how social media enabled them to establish a deep relationship with other members of the forums.

They also drew attention to how the adoption of social media led to the development of a sense of community and helped them to become more adaptive to the process of chronic care management (Theme 2: *Community Resilience*). For example, many of the participants attributed their adaptation abilities to the support they were getting from their peers (for example, patients) in the online forums. Also, it was not difficult to see how some of the constraints of using social media would sit alongside a feeble sense of community by turning the discourses between members of the online forums into emotional distresses and social pressures (Theme 3: *Social Media Constraints*).

However, it was evident that the participants' active engagement in their online communities facilitated the development of more open discourse between them, creating opportunities for further support and the inclusion of diverse perspectives. This point was clearly underscored in the findings when the participants acknowledged the role of social media in facilitating learning from different cultures and incorporating different perspectives into the management process. This aspect of using social media was also observed in a recent study by Ray, Kim, and Morris (2014). They observed a similar relationship between the users' engagement in an online community and their sense of inclusion that led them to argue for the central role of engagement in the sustainability of online communities.

It was interesting to see the relationship between the features of social media and the members' level of engagement in online discourses. For example, discussions between patients and carers in Facebook-based forums were richer in terms of the diversity of the topics and formats of exchange. These social media platforms presented relatively higher levels of engagement by their members compared to the forums, where interactions relied on simpler forms of exchange, such as plain text. Young, Miranda, and Summers (2013) attribute these differences of engagement to the richness of the communication media and the features of different social media platforms.

Nevertheless, as Zeng and Wei (2013) also observed in their study, it was not difficult to see that there were different levels of engagement and discourse within the online forums. The term *discourse* here refers to what Phillips, Lawrence, and Hardy (2004) define as the broad array of spoken, written commentary, or any other types of exchanges (for example, images) on specific topics. In the following sub sections, I engage the findings related to the affordance of *building a sense of community* with

the existing literature and highlight how this study expands or enriches our existing knowledge in this area.

Sense of community and the level of engagement

At the beginning, the findings only seemed to provide some broad insights into the development of an online healthcare community, as a whole, without presenting further details about members' participation motives. However, later, as the data analysis progressed, some interesting patterns of participation stood out. The findings showed that the level of participants' feelings of closeness and connectedness towards other patients and carers were strongly linked to their level of participation in the forums. For example, many of the patients who were actively involved in organising offline events and support groups were also taking mediator and leadership roles in the online forums. Da Cunha and Orlikowski (2008) and Lampe, Wash, Velasquez, and Ozkaya (2010) also identify similar patterns of online behaviour among users in their studies of online communities of professionals and consumers. As Vaast (2007) and McEwan and Zanolla (2013) show, the border between the online and offline aspects of a community is not easily discernible as these two aspects of community are intertwined and interlinked.

I contend that the creation of a sense of community and the level of participation of individuals within the forum were interwoven. It was also evident that not all members of the forums took similar approaches to their interactions with other members. Although differences in user commitment were strongly justified, such an inconsistency of approaches suggests that members can be classified based on their level of participation and commitment to the forums. As such, for the sake of clarity of discussion, I have classified members of the forums based on their level of participation into four categories: *observers*, *explorers*, *supporters*, and *rapport builders*. This classification helps gain a better understanding of how social media has influenced the creation of a sense of community within patients' and carers' forums.

Observers and *explorers* were the less-engaged groups in the online forums. *Observers* were mainly new members to the forums and they were not active participants. They did not feel comfortable participating due to constraints such as a lack of skill or confidence, or privacy concerns (Theme 3: *Social Media Constraints*). For example, many of the participants who fell into this category expressed their lack

of confidence in writing impressive messages, as they perceived they did not have adequate language skills. Explorers were also mainly passive and shy participants whose focus was mainly on reading other people's posts and messages. Their focus seemed to be more on learning than participating and sharing. Based on the findings, a good example of this group was the patients who only posted questions to the forums.

These two groups, however, were not necessarily lurkers (boyd, 2010) who would only consume information without contributing to the forums. The findings showed that in the context of chronic care, all four groups were interested in some level of communication and learning. This observation is consistent with Zolnierek and DiMatteo (2009) and Boxer and Snyder (2009) who argue that communication and learning are intrinsic activities to the process of chronic care management. This implies that members of the online forums, even implicitly, subscribed to a certain level of participation and commitment to the forums. Nevertheless, I contend that the motivations of these two groups (that is, *observers* and *explorers*) for communication and their desire for learning did not lead to practices that would result in the creation of a sense of community.

From engagement to participation

One way of explaining the lack of engagement and commitment of *observers* and *explorers* is by drawing on Ma and Agarwal's (2007) notion of participation and online satisfaction. Ma and Agarwal (2007) believe that ongoing engagement and satisfaction are two parallel and interdependent characteristics of sustainable online communities, where members' satisfaction draws on their evaluation of earlier interactions in their community forum.

Therefore, as Butler et al. (2014) argue, online communities with low levels of member engagement can result in low satisfaction and that in turn can lead to community attrition. Although *observers* and *explorers* were in a discursive relationship with other people in the forums, they did not emerge within their community as influential actors who could engage with other members in a way that could result in the creation of reciprocal values (Ridings & Gefen, 2004). The next two sub sections discuss different aspects of online participation in building a sense of community.

Participation costs and benefits

The lack of engagement and weak discursive practices on the part of *observers* and *explorers* can be better understood through the lens of *participation costs* in online communities. Ray et al. (2014) argue that people's behaviours in online communities are motivated by their desire to increase the value they can obtain from a community. Such an approach to participation in online communities revolves around an individual's own needs and goals, and the efforts required to obtain valuable information. Butler et al. (2014) call these efforts '*the cost of participation*' and argue that if this cost is perceived as being higher than the value of the information then people disengage from a community.

According to Phillips and Hardy (2002), a discursive practice refers to the production, dissemination and reception of a discourse. As such, if the cost of a discursive practice within an online community is perceived as being higher than the cost of its outcomes, then people would not have sufficient inducement and motive to develop a sense of community.

Engaging in a discursive practice within an online community generally requires a fair amount of searching and rendering of messages and other information (Zhang & Watts, 2008). For *observers* and *explorers*, this meant that it might take them a significant time and effort to attend and process a large number of messages, posts, or images. This point was brought to the fore in the findings as one of the constraints of social media in chronic care management. Therefore, this constraint would increase *the cost of participation* for these groups and could deter them from further and deeper engagement with the community.

In contrast to *observers* and *explorers*, *supporters and rapport builders* were highly engaged with the online forums. The findings showed that these two groups of members developed relatively strong emotional bonds to their online community. This was not unprecedented as studies (e.g. Oreg & Nov, 2008) have shown that strong bonds can be developed between people and their online communities.

Supporters and rapport builders were more inclined to help other members of their online community by replying to their messages and providing them with emotional support as specified in Theme 1 (*Affordances of Social Media*). According to Grant (2007), this group of members in an online community clearly manifest an emotional

bond to their online community. Based on this view, the creation of a sense of community among *supporters* and *rapport builders* can be explained by what Meyer and Allen (1991) recognise as the notion of affective community commitment. As Bateman, Gray, and Butler (2011) point out, people with an affective bond to an online community find their association with it to be emotionally fulfilling. As such, members with higher levels of affective commitment to an online community are likely to care more about the growth and evolvment of their community.

I argue that the difference between the *observers* and *explorers* and the *supporters* and *rapport builders* lies mainly in their level of affective commitment. That is, members with lower affective commitment to an online community feel little or no emotional bond with the community.

Vaast, Davidson, and Mattson (2013) and Tsai and Bagozzi (2014) shed light on this notion by contending that discursive practices in online communities are uncertain processes because their emotional impacts and future benefits and outcomes are rarely visible and predictable. Butler et al. (2014) argue that to deal with these unavoidable uncertainties, members need to make judgements of how the present discourses in an online community can represent future benefits and whether they want to engage with them. Therefore, members with low affective commitment are less likely to invest in a long-term and ongoing discourse with other members.

Conversely, *supporters* and *rapport builders*, because of their sense of attachment and belonging to their community, had stronger tendencies and interest in investing their time and effort to contribute to the conversations and interactions that evolved in the community. This relationship was also evident in the findings as, for instance, some participants clearly mentioned that their purpose in contributing to the online forums was to support other patients or carers. This is consistent with Ren, Kraut, and Kiesler (2007) point of view on membership with online communities. They argue that people who connect strongly with a community are more likely to see benefits in contributing to the central discourses of the community, and have a stronger desire to acclaim and support their solidarity with the community.

Ladder of participation

The findings of this study showed that the level of affective commitment to a community is not a fixed property of individuals; rather, it can change over time. It

became more evident that individuals' positions toward their community changed as they became more engaged with the online forums and support groups. The participants mentioned frequently that they gradually started to feel that they were more connected to the people in the forums and found the online forums attractive and fruitful environments.

This change can partly be explained by the notion of the *'ladder of participation'* in communities. The concept of the *ladder of participation* was initially introduced by Lave and Wenger (1991) in their seminal work regarding the learning process in communities of practice. Later this concept was developed by the works of Oestreicher-Singer and Zalmanson (2013), particularly in relation to online communities. Based on this view, participants in communities move upward from legitimate peripheral participants to full participants. In the context of online communities, as Oestreicher-Singer and Zalmanson (2013) and Preece and Shneiderman (2009) show, this *ladder of participation* can be framed as a readers-to-leaders hierarchal promotion.

The findings of the current study confirm the existence of such a *ladder of participation* in the online patient forums. Over time, the change in the level of participation by different members was evident as it was possible to trace back and compare the quantity and quality of the posts and messages on the online forums. It was also possible to see how the use of social media by the users enabled them to promote their position on the *ladder of participation*. For many of the users, once they started becoming more comfortable with the features of social media, or they started to use these technologies in more innovative ways, their position on the *ladder of participation* started to move upward.

These findings have implications for the literature related to the resilience of online communities. For example the theory of online-community attraction–selection–attrition (OCASA) by Butler et al. (2014), suggests that technologies that reduce the cost of participation in online communities may also decrease a community's resilience. It means that technologies such as social media can reduce the degree of fit require for maintaining continued participation in online communities. However, the theory also maintains that these technologies can also primarily change the

assessments of members whose interests match a community's discussion activity and lead to their decision to leave the community (thus creating a process of attrition).

The OCASA theory is inconsistent with the findings of this study. The current study shows that a reduction in the cost of participation can increase the diversity within a community. As a result, as its findings show, a community's diversity is one of the major aspects of its members' social inclusion. Findings reveal that in a community of users with diverse backgrounds and values, it is more likely that the use of social media supports Community Resilience through increasing members' social inclusion. As such, these findings highlight the need for further research to investigate the role of diversity and social inclusion in the resilience of online communities.

According to OCASA theory, technologies that limit participation lead to members with interests that do not match the community's discourse leaving the community. As a result, constraints of technologies such as social media can create a more homogenous community with resilient membership that is less affected by messages perceived as irrelevant. In other words, technological constraints can support the resilience of an online community. However, the findings of this current study are inconsistent with the OCASA approach to technological constraints and Community Resilience.

My findings indicate that *Social Media Constraints* discourage potential members from participating in an online community and bringing new resources to the community that could be valuable or even vital to its resilience. Findings also show that perceived technological constraints can lead to experiences (for example, social pressure) that can adversely affect the resilience of an online community. As such, findings of the study expand existing literature concerning the resilience of online communities by bringing to the fore issues related to people's perception and experiences of using technologies such as social media that underpin online communities.

Reflections and contributions

Based on the discussed views, members of a community constantly update their overall evaluation of the fit between community and their expectations to decide whether they want to stay or leave the community. Ransbotham and Kane (2011) argue that if there is a fit between the members' perception of the benefits of an online

community and the outcome of their participation then it is more likely that they will lift their level of participation.

Building on this notion, Butler et al. (2014) contend that technologies such as social media can narrow the gap between the members' expectations and the real benefits of an online community. They argue that technological features available in new media and their supporting technologies can change the impact of perceived participation costs among members of an online community and provide a more meaningful experience of discursive practices.

This argument is consistent with the findings of this study as Butler et al. show that the use of social media has the potential to move members of patient online forums up the *ladder of participation*. They also show that the use of these technologies enables members to engage in deep and meaningful discourses with other members and adopt positions that allow them to develop a sense of community. The findings of this study enrich the existing literature in two major ways.

First, the findings showed that the changes in level of participation in the forums were not a linear function of the fit between members' expectations and goals, and benefits of an online community. Instead, the findings strongly suggested the existence of a dynamic relationship between the perceived benefits of an online forum and members' real experiences of their online discursive practices. In other words, the findings suggested that perceptions and real benefits were inseparable and that they were both linked closely to the social and technological features of the online forums.

Users would join an online forum with some initial expectations of the benefits of the forums. But once they start engaging with the ecosystem of the online forums through features of social media, they start to develop a new understanding of the potential benefits based on their experiences of the things they could do or things that they could not achieve. This new social experience could lead to the formation of new perceptions of the benefits of an online forum. Alternatively, the social experience could even be perceived as harmful and constraining (Theme 3: *Social Media Constraints*). As such, the development of a sense of community in patient and carer online forums interplays with both social and technological aspects of these communities and enacts through members' discursive practices.

The second means by which this study's findings enhance existing literature is by informing a more accurate understanding of the notion of community via its characteristics. Community is an elastic term with a variety of definitions in different fields (Cohen, 1985). The term is used to identify specific social groups (e.g. Zhou, 2011) and is conceived of as a general theoretical construct (e.g. Wellman, 2005). The dynamic character of community (Wellman et al., 2002), the fluid nature of social life (Berger & Luckmann, 1967), and the shifting architecture of relations between people (Campbell & Kwak, 2010; Ketteni et al., 2011) make it difficult to reach a consensus on the definition of community.

As such, most studies in different disciplines, including IS, have treated the definition of community as given. However, the findings of this study provide a unique insight into the characteristics of community in the process of chronic care management. In other words, the affordance of building a sense of community points to the characteristics of a community (see Section 4.2 for more details) that can form around the process of chronic care management. These findings expand the existing literature by accenting the major dimensions of such a community.

7.2.1.2 Emotional Support

This study found *emotional support* to be one of the major *Affordances of Social Media* in chronic care management. Participants found online forums a source of emotional support, as their interaction with other people in the forums provided them with opportunities to access resources that were emotionally valuable to them. For example, many of the participants highlighted how other people's kindness, fairness and sympathetic approach in the online forums helped them to feel emotionally relieved and supported. In general, this finding is congruent with a stream of literature that indicates that social media can act as a source of *emotional support* within both virtual (Tsai & Bagozzi, 2014) and real (Oh et al., 2013) communities.

In particular, this finding confirms a growing body of literature that casts a spotlight on the emotional implications of social media for healthcare communities, and specifically the communities that arise around the process of chronic care management. For example, studies by Frost and Massagli (2008), Nakayama et al. (2009), and also a study by Setoyama, Yamazaki, and Namayama (2011) all show that different types of social media platforms can create positive emotional feelings

between patients with chronic conditions and their carers. Also, a study by Greene et al. (2011) indicates that, in the context of chronic disease management, receiving and providing emotional support is one of the major drivers of the use of social media by patients and carers.

A longitudinal study of patients with chronic conditions by Richardson et al. (2010) focused on the emotional implications of chronic illness and the patients' sense of isolation. They argue that many of the patients tend to be reticent, introverted, and some even prefer to be loners and stay away from the public gaze. Building on this argument, Wright (2012) shows that the use of social media – mainly for communication purposes – can create positive feelings among these patients by enabling them to bridge communication gaps with other people.

While the findings of this study confirm Wright's (2012) and Richardson's (2010) arguments, they highlight that social media can alleviate the sense of isolation among patients and narrow the communication gaps. By way of illustration, it was evident in the findings of this study that an expansion of communication channels via social media provides further opportunities for patients and carers' social inclusion as they can more openly talk about their issues and attract others' attention and sympathies. This in turn, as the findings of this study suggest, can lead to more effective emotional support from their peers and from the wider community.

The findings of this study regarding *emotional support* also relate to a sub-stream of the IS literature that focuses on the relationship between individuals' emotions and the diffusion of technology and its adoption by communities. As an instance, a recent study by Faraj, Jarvenpaa, and Majchrzak (2011) revealed that the quality of individual contributions in virtual communities derives from the expected level of interaction with other people through social media.

The findings of this study also show that this quality and willingness of contribution are tightly linked to the levels of emotional support that patients or carers experience in their social media interactions. Further, findings of a study by Bateman et al. (2011) shed light on individuals' erratic patterns of adopting and engaging with social media by arguing that people with more emotional dependencies to an online community are more likely to engage with social media. The findings of this study further show that

these emotional dependencies are manifested mainly in the form of emotional comfort and uplifting interactions.

The above discussion draws on a number of sources from different disciplines (for example, information systems and chronic care management), confirming that social media can be enacted as a suitable collection of emotional resources. It shows that social media offer opportunities to users to reduce or even cease the emotional discomfort that may arise from unforeseeable social challenges; namely, the complex process of chronic care management.

I contend that it is important to understand how the detailed and contextual construction of this affordance can present a new understanding of the emotional implications of social media for patients and carers. This can help actors better understand how these technologies can address some of the emotional challenges (such as a sense of isolation) of chronic care management or mitigate their potential emotional risks (such as depression). It is also necessary to discuss the implications of such an understanding for our knowledge of social media in communities.

Unpacking the key findings and implications a little further, gaining *emotional comfort* and *raising hope* were found to be the two major practices that constituted the affordance of *emotional support*. These two practices allowed patients and carers to alleviate some of the emotional challenges that arose from the ever-shifting nature of chronic disease. They also helped patients and carers to address and contain some of the emotional implications of the chronic care management process.

The findings regarding *emotional comfort* and *raising hope* are also discussed in the existing literature. For instance, Chung and Kim's (2008) study, which focused on social media platforms such as blogs, showed how these technologies can generate a sense of emotional gratification and satisfaction among patients with chronic illness. Da Cunha and Orlikowski (2008) also support the idea of emotional comfort by demonstrating the cathartic effect of social media among frustrated and resentful users who faced the uncertainties of organisational change.

The current study shows how, in uncertain circumstances, unforeseen changes can create frustration and anger (similar to the impact of chronic disease on patients and carers), and how social media can be a source of emotional comfort. Similarly, Vilhauer (2009) demonstrated that the instillation of hope is a major benefit of social

media-mediated support groups. This is also in accordance with the findings of this study that suggested that *raising hope* is an important aspect of the *emotional support* attainable by the use of social media. For instance, many of the participants in the current study explained how social media helped them to gain a positive outlook on their condition and their lives.

In the following sub sections, issues related to the other key finding of this study (that is, the *emotional comfort* dimension of *emotional support*) are discussed.

Emotional comfort

I contend that the findings from this study show that issues related to *emotional comfort* are notable in the field of chronic care management. This is mostly because gaining *emotional comfort* has significant consequences for patients' and carers' negative feelings (Berkman, Leo-Summers, & Horwitz, 1992).

In general, the emotional dimension of the process of chronic care management plays a crucial and central role in achieving desirable outcomes (Furler et al., 2008). Studies show (e.g. Lieberman & Goldstein, 2006) that the occurrences of emotional distress in chronic care management are mainly nourished by negative feelings such as frustration, anger, or hopelessness. These negative emotions can in turn have adverse implications for curbing the progress of chronic disease (Street Jr, Makoul, Arora, & Epstein, 2009). As such, it is important to understand exactly how the engagement of patients and carers with social media can enable them to take the edge off their frustrating and resentful experiences and help them to become emotionally relaxed and comfortable.

Gaining new perspectives

The findings of the current study show that social media supports patients' and carers' *emotional comfort* in different ways. One important way is by helping them to change their perspectives about their illness and its management process. For example, some members of the forums were able to learn about other people's stories and realise that they were not the only ones who had to deal with the frequently life-long difficulties of chronic illness. Social media allowed patients and carers to realise that other people were also in similar or even more difficult situations, thus elevating their perceptions of their own situations. This impact of social media is consistent with the stream of

literature that shows how social comparison among people can be uplifting (Bessenoff, 2006; Collins, 1996).

Other studies, in comparison, show that modern media can also have an adverse impact on a person's sense of happiness and self-esteem. For example, studies by Hobza, Walker, Yakushko, and Peugh (2007) and Tiggemann and Polivy (2010) reveal that social comparison through the Internet negatively impacts both men's and women's feelings in terms of their social images and capabilities. In contrast to this stream of literature, the findings of this study show that social comparison through online forums can be a source of happiness and emotional comfort, as patients and carers can perceive their situation in a better position in comparison to other patients or carers.

When using social media to learn how other patients and carers manage their day-to-day challenges, many of the participants described such a learning process as activities that could lead to a sense of relief and *emotional comfort*. It was not difficult to see that many of the stories were loaded with emotional aspects, in that people were talking about their challenges, their achievements, and were also sharing some sorrowful experiences. For example, many patients shared stories about how they felt when they learnt they had an incurable disease or they talked about their medication side effects, their surgeries, and their disabilities.

Many of the participants were emotionally engaged with these stories as they could relate their contemporary experiences to them. For many of the participants, the stories were inspiring and empowering as they could see that those people who were in the midst of the events, despite all their difficulties and setbacks, still remained hopeful about their future and adopted positive views about their lives.

The participants linked this feature of forums to the development and emergence of a sense of emotional relief that, in turn, led to a shift in their views about their condition. Such a shift can be described as the rise of a new perspective that was conducive to the process of chronic care management. Through this new perspective, patients and carers started seeing their circumstances as a 'lifetime challenge' that they had to overcome, instead of seeing their illness as 'restraining and unfair' and a condition to which they had to become resigned.

Social media enabled patients and carers to repeatedly access information (for example, stories or messages) that would provide them with opportunities to develop a new perception and understanding of themselves and their conditions. These new understandings and perceptions were gradually gained after patients and carers used different stories to constantly re-evaluate and re-assess their circumstances.

As Burlison and Goldsmith (1998) explain, they ‘discursively constructed’ a new meaning of what they previously perceived as unchanged circumstances. As a result, they eventually reached a new interpretation of their illness. This is consistent with Moors, Ellsworth, Scherer, and Frijda (2013) who contend that transforming negative feelings entails reappraisal of the current situation. In this process of reappraisal, according to Caplan and Turner (2007), one can alter negative feelings into a positive emotional change by using new information, and arrive at a new interpretation of a situation that was previously perceived as being unchangeable.

The construction of the new perception is influenced by both social media activities and the offline life of users (McEwan & Zanolta, 2013; Wellman et al., 2002). However, as Savolainen (2014) posits, obtaining the right information and constructing a meaningful portfolio of events or stories that can lead to one’s positive emotional change is not easily possible in the real offline world. In regard to the process of chronic care management, this is a particularly valid statement.

Many social and psychological issues can contribute to a patients’ and carers’ passive approach to the process of chronic care management. Issues such as limited access to quality information (Brownson et al., 1999); disabilities (Hoffman, Rice, & Sung, 1996; Lorig et al., 2001); social isolation (Robison, Fortinsky, Kleppinger, Shugrue, & Porter, 2009); or pressures regarding social relations (Friedmann et al., 2006; Primomo, Yates, & Woods, 1990) are just a few to name. However, the findings of this study strongly suggest that social media can narrow or even bridge many of these gaps.

Visibility

As already discussed, the findings from the current study show that in many of the online support forums, members were able to share detailed stories about their illnesses. Those detailed and rich stories attracted other members’ sympathies and support, making patients and carers feel that their challenging efforts in coping with

the difficulties of managing chronic disease were being acknowledged by other members.

Patients and carers were also able to use social media to vent their anger and frustrations. Many of them found social media and online forums safe environments in which they could openly express their feelings and talk about issues they could not comfortably share with other people offline. This aligns with research by Matzat (2010) and Reich et al. (2012) who were able to demonstrate close connections between the online and offline activities of members of a community; however, they also highlight that the social consequences of relationships and activities in offline contexts are different to those online.

One significant and common motive for these activities is *visibility*. The issue of *visibility* was frequently mentioned by the participants. Many of them felt emotionally depressed because they thought that due to their conditions or circumstances they had become less visible to other people and less acknowledged by them. Thus, besides receiving emotional support (such as encouragement or benevolence), being *visible* was one of the major motives of the interactions in the forums.

Once acknowledged and with their voices heard, patients and carers could identify themselves as *visible* members of their community (Bolger & Amarel, 2007; Ryan et al., 2005). Many of the patients emphasised how being *visible* and acknowledged by their colleagues as a person with impact in their workplace was important and uplifting to them. While Treem and Leonardi (2012) bring to the fore the way in which social media can create and improve *visibility* in organisations, Aujoulat, Marcolongo, Bonadiman, and Deccache (2008) and Bolger and Amarel (2007) highlight the social and psychological implications of social *visibility* for people with chronic conditions and disabilities.

Butler et al. (2014) explain that in a virtual community with close bonds, members may act altruistically for the good of the community. Nevertheless, they still argue that within such a community, 'personal visibility' is a major factor that affects members' participation decisions. boyd (2010) describes personal *visibility* as a significant *affordance of social media*. He argues that achieving personal *visibility* in virtual communities resembles 'micro-celebrity' where people gain much localised attention from their peers via social media. As such, the findings of this study show that the

emotional dimension of social media is intertwined with the *visibility* that can be afforded by social media.

These findings have implications for the literature about the *visibility* affordance of social media. To date, most studies of *visibility* via social media have focused on organisational or marketing implications of this affordance. In these studies, emotions are mainly covert and *visibility* is, in the main, concerned with locating organisational or consumer information (Laroche, Habibi, Richard, & Sankaranarayanan, 2012; Merolli et al., 2013), finding personal knowledge (Majchrzak et al., 2013; Mansour, Askenäs, & Ghazawneh, 2013), or identifying work behaviours (Treem & Leonardi, 2012; Vaast & Kaganer, 2013). However, the findings of this study suggest that *visibility* and emotional support are two interdependent and interlinked *Affordances of Social Media*.

These findings show that engaging in practices that give *visibility* to patients and carers over time provides them with the feeling of receiving emotional comfort through social media. Some features of social media, such giving other people access to stories, enabled patients and carers to reduce stress and tension related to the process of chronic care management. The use of social media platforms and online support forums facilitated patients and carers to become visible members of their community. As a result, they were able to express their resentments, frustrations, and worries as well as attracting sympathy and understanding.

As a consequence, these virtual social environments can provide unique outlets for the emotions of patients and carers that in turn can lead to a more positive perception of their condition and a different interpretation of the process of chronic care management. Such perceptions and interpretations are not only influenced by the engagement of patients and carers with the features of social media platforms; they are strongly influenced by the offline social interaction between them and other actors involved in the process of chronic care management (McEwan & Zanolla, 2013; Vaast, 2007; Wellman et al., 2002).

This implies that the emotional comfort gained through social media activities is not a property of individuals or a characteristic of social media features. Rather, it is a social experience that is enacted as the *emotional comfort* where the members of online forums and other actors outside social media contribute to this experience.

This finding extends the existing literature in different ways. First, it expands the existing literature by providing a detailed insight into the dimensions of *emotional support* as an *affordance of social media*. The concept of emotional support has been barely discussed in relation to its constituents within the IS literature. Most studies that have examined the relationship between social media and its emotional implications focus on emotional support as an abstract entity that influences the balance of power within an organisational setting (e.g. Luo, Zhang, & Duan, 2013). Some see it as a means of collective support for or against change (e.g. Segerberg & Bennett, 2011), or a means by which individuals can support and protect their professional group identity (e.g. Da Cunha & Orlikowski, 2008). Other studies such as Chung and Kim (2008) or Vilhauer (2009) present the concept of emotional support as a black box without delineating its constituents.

Accordingly, this study unpacks the notion of ‘social media as a source of emotional support’ by revealing the underlying social and technological elements that make the enactment of this affordance possible. This is an important and unique finding compared to prior research that mainly either focuses on individual agencies (e.g. Thoren, Metze, Bühner, & Garten, 2013), or attributes this affordance to the technological features of social media (for example, Tsai & Bagozzi, 2014). By focusing on a context outside organisational settings, emotional support and its relationship to social media is seen as a social experience that is achieved not merely by individuals, but it is enacted as a distributed and collective accomplishment through technology.

Mobilising emotional resources

The findings regarding the affordance of emotional support also have implications for the community-mobilisation literature. Previous studies show that social media has potential for *mobilising community resources* when members of a community face an immediate and common threat to its environment (Dufty, 2012; Keim & Noji, 2011), identity (Da Cunha & Orlikowski, 2008), members’ political view (Eltantawy & Wiest, 2011), or social justice (Harlow, 2012). These studies highlight that social media are effective tools for *resource mobilisation* as they afford a quick and effective reaction – generally on a large scale – to an imminent threat.

The findings of this study have implications for this stream of literature on two major fronts. First, it adds an emotional dimension to the collection of *resources that can be*

mobilised via social media. Most studies in this area identify social media as a means to access either physical resources (Taylor et al., 2012) or human resources (Enjolras, Steen-Johnsen, & Wollebæk, 2013; Kane et al., 2009). Although some studies have also recognised the significance of the emotional dimension of social media (Da Cunha & Orlikowski, 2008; Koch, Leidner, & Gonzalez, 2013; Nach & Lejeune, 2010; Von Krogh, 2012), they mainly consider it as a tool or a by-product of a change management process. The findings of this study show that emotional support on its merits can be the major and sometimes only *resource that can be mobilised* by the use of social media.

Second, the study shows that the *mobilisation of emotional resources* can be extended beyond just a quick reaction to imminent threats. Most studies within the literature focus on social media as an effective means of *mobilising resources* to mitigate an impending threat (Akhgar, Fortune, Hayes, Guerra, & Manso, 2013; Oh et al., 2013; Panagiotopoulos, Bigdeli, & Sams, 2014). Nevertheless, the findings of this study show that the major trigger for the *mobilisation of emotional resources* within the online forums is beyond a short-term need for immediate action. Rather, the findings show that social media can act as a useful platform for long-term collaboration and collective action, and can provide a communication channel for ongoing sympathy and emotional comfort to other members of a community.

Future research in the role of social media in emotional support

As shown earlier in this section, the findings regarding the affordance of emotional support are confirmed extensively by different streams of literature. However, there is also a strong body of literature in social capital that mainly follows the work of Putnam (2000). The theoretical and empirical focus of the literature is on the impact of electronic media on a community's social capital.

This group of studies suggests that social media can create some changes in social relations but social media cannot eventually be a source of emotional comfort for individuals and communities. These studies argue that social ties between people are the primary substances and major ingredients of social support. They also argue that technologies such as social media diminish such social ties and eventually have an adverse impact on the health and emotional capacity of a community.

The contradictions between the findings of this study regarding emotional support and this stream of literature can generate an interesting agenda and topics for future research.

7.2.2 Key Findings Related to Community Resilience

This section provides a concise discussion around the key findings related to the emergent theme of *Community Resilience*. It discusses how these key findings can contribute to the extant literature by corroborating, expanding, or contradicting it. Table 7.2 presents an overview of the key findings discussed in this sub section and their significance.

Table 7.2 Key findings related to Community Resilience

Theme	Category	Meaning	Key findings	Significance
Community Resilience	Adaptation	Strategies taken by individuals to adapt to CCM	Data revealed many instances of people discussing adaptation at the individual level	Supports adaptations at the individual level
	Adaptation	Means that adaptation can be supported at the community level	Many of the participants identified the significance of adaptation at the community level	Supports adaptations at the community level

7.2.2.1 Adaptation in chronic care management

The findings of this study show that adaptation is an important aspect of the resilience of chronic care management. Many of the participants laid emphasis on the importance of adaptation by discussing the influence of this process on the outcome of the care-management activities. For example, by elaborating on their ‘learning’ activities, they highlighted how, through the process of adaptation, they could improve the quality of their life.

Most studies concerned with adaptation in chronic care management have focused on issues concerned with adaptation at the individual level (Biesecker & Erby, 2008; Gignac, Cott, & Badley, 2000). However, the findings of this study lay the groundwork to bridge or narrow the gap between individual- and community-level understanding of the notion of adaptation in chronic care management (Ebi & Semenza, 2008; May et al., 2011). This is made possible by exploring and acknowledging the social (e.g.

Reinhardt et al., 2009), environmental (e.g. Plummer et al., 2013), psychological (e.g. Whittemore et al., 2010), and technological (e.g. Hill, Weinert, & Cudney, 2006) aspects of this process. The findings show that factors such as *optimism*, *endurance*, and *recognition* play central roles in individual adaptation. Further, the findings also indicate that at the community level, adaptation is mainly attributed to community awareness and community learning.

It was evident in the findings that this study's participants described adaptation as a distinctive process (Whittemore et al., 2010). They conceived it as a process comprising possibly lifelong learning activities, supported by community awareness and strengthened through social support (for example, recognition) and personal experiences (for example, optimism and endurance). The findings present a set of concepts concerned with the nature of adaptation at the individual level (Livneh & Antonak, 2005). These concepts confirm the findings of a study by Sturgeon and Zautra (2010) regarding the notion of adaptation as a core aspect of resilience.

The studies of de Ridder, Geenen, Kuijer, and van Middendorp (2008) and Miller, Chen, and Cole (2009) allude to the importance of both the social and psychological aspects of the management process in supporting adaptation. In particular, studies by Compas et al. (2012) and Brunton (2011) highlight optimism and endurance as two important contributing factors in adaptation of patients and carers to the process of chronic care management.

However, the findings of my study show that the participants added 'learning from community' and 'community awareness' as two major influential factors in the adaptation process. For example, many of the participants emphasised that without community awareness of the challenges of chronic care management, attracting any meaningful support from the community would be extremely difficult. They also believed that the early recognition of patients' challenges is a pathway to their social inclusion (consistent with other dimensions of *Community Resilience* as explored and presented in Theme 2) and a facilitator to experiential learning from the community. For example, many of the participants commented on the positive impact of learning from others about how to do things better for themselves or their families. Consequently, they underlined that the influences of such learning permeated through

many aspects of the chronic care management process, especially in those areas where patients struggle to adapt (for example, to a change of life style).

Learning from community, including both experiential learning (for example, learning social skills or learning from others' experiences) and learning through self-reflection (for example, learning from experiences), were closely linked to individual adaptation (Kralik et al., 2006; Lin, Orsmond, Coster, & Cohn, 2011). The findings show that factors such as flexibility and creating a positive atmosphere and outlook were strongly influenced by these types of learning activities (de Ridder et al., 2008). For example, many of the participants believed that learning from other's experiences and knowing how they managed to achieve their management goals (for example, maintaining a certain level of blood glucose) enabled them to become more positive and more flexible in their approaches to challenges. The result of community awareness and learning was better adaptation of individuals alongside social and emotional support from community (reference to Theme 1: *Affordances of Social Media*).

As many of the participants accentuated, the learning activities (that is, community awareness and learning from community) became motives for the creation of a strong sense of community and strong mutual understanding between community and individual patients and carers.

7.2.2.2 A synthesised and holistic view of adaptation

The findings from the current study strongly suggest that the process of adaptation, at the individual level, is not necessarily different in nature from adaptation at the community level (Callaghan & Colton, 2008; Rawlani & Sovacool, 2011). Rather, the findings show that because almost the same factors (for example, coping, learning, and support) contribute to both levels of adaptation (although to varying extents), such a distinction can be made only on analytical grounds. For example, the participants who highlighted individual learning as a dimension of adaptation also acknowledged that such individual learning has to be linked to community values (for example, cultural values). As such, the findings extend and enrich the existing literature by identifying an integrated set of factors (concepts) that mutually influence adaptation at both individual and community levels.

The suite of identified concepts that underpins the notion of adaptation in chronic care management is consistent with how the process of adaptation is described within

environmental studies (Yeung, Arewasikporn, & Zautra, 2012). Nevertheless, the findings of this study have implications for this stream of literature. They not only call attention to the social contributors into the adaptation process but they also show how social media can influence this process and its social constituents through their affordances and constraints.

I contend that the findings of this study provide a synthesised and holistic view regarding the process of adaptation in chronic care management. The findings suggest that adaptation is a process that draws on the interrelation between the social (Jones & Boyd, 2011), psychological (Sturgeon & Zautra, 2010), environmental (Plummer et al., 2013), and technological (Martín, Haya, & Carro, 2013) aspects of a community. In the findings, though, the participants frequently elaborated on these interrelationships by linking some of the affordances of social media to the process of adaptation (for example, *community support*). While this is in contrast with Moorhead et al. (2013) and Garcia et al. (2012) who see social and technological factors as major stressors to adaptation, the findings confirm a stream of literature that see these factors as positive influences on the process of adaptation (Chuang & Yang, 2014; Foster, 2013; Rice et al., 2014).

7.2.2.3 Reflections and contributions

The findings from the current study strongly suggest an interrelationship between the community, individual, and technological aspects of adaptation (Hill et al., 2006; Jaser et al., 2013; Whitemore et al., 2012). The picture is that a community provides opportunities and resources to individuals who contribute to and draw on these for their adaptations. However, such mutual and inclusive relationships are facilitated or made possible by the features of technology (for example, communication). As a result, the community can afford more social resources (for example, learning opportunities and social networks) and individuals can make choices from a range of possibilities to contribute to or draw on. As such, technology can be leveraged to facilitate the integration of both personal resources (for example, sharing positive outlooks) and community resources and services (for example, social support) toward the objectives of adaptation at both levels (for example, endurance and community awareness).

The identified underpinning dimensions of adaptation in chronic care management are not specific to a particular chronic disease type. As Table 3.6 shows, slices of data

used for the analysis came from different groups of participants who were involved in the management of different chronic disease types. This re-emphasises the strengths of the grounded-theory method and the value and appropriateness of this approach for this study. In addition, one important implication of drawing on existing concepts from the literature for analysis of the data was the focus and clarity of the interpretations. With respect to the process of adaptation at both the individual and community levels, it became much clearer and easier to understand how individual and community attributes interact with, and interrelate to each other, across different aspects of this process.

That said, one important question to ask is whether the set of concepts identified in this study are specific only to the communities that emerge around the process of chronic care management or whether they can be applied or transferred to other similar communities. In an attempt to answer this question, a comparison between the findings of this study and other close and similar studies (two studies from psychology and two from environmental sciences concerned with adaptation) can be fruitful. An overview of such a comparison is presented in Table 7.3. The comparison reveals interesting overlaps as well as some divergences.

The presented comparison is not exhaustive. Nonetheless, it clearly demonstrates how the set of concepts identified in this study is remarkably compatible with the set of social and individual characteristics identified in communities. It also shows how the explored concepts from other themes are identified as dimensions of adaptation in other contexts. This shows the link and relationship between adaptation and other aspects of *Community Resilience* either in the context of chronic care management or in other contexts.

Differences also exist. The comparison clearly shows that none of these other studies extends to the relationships between individuals and community or the interrelations between their constituents. While the overlapping concepts (presented in Table 7.3) inform the extent of the generalisability and transformability of the findings, the non-overlapping concepts call for dialogue and thinking about the relevance and applicability of the findings within new contexts. Further, non-overlapping concepts (for example, recognition) in the findings also underscore the areas that the findings contribute to or that enrich the existing literature.

Table 7.3 Comparison between the findings of this study and other similar studies

Reference	Field of study	Topic area	Presented concepts	Related or equal concepts in the findings of this study	Theme
Parental and child perspectives on adaptation to childhood chronic illness: A qualitative study (Gannoni & Shute, 2009)	Psychology	Individuals and family adaptation	Acknowledgement of emotions	Emotional comfort (Emotional support)	1
			Personal communication	Individual communication (Communication)	1
			Social relationships	Social support and friendship (Social inclusion)	2
			Physical wellbeing	No equal concept	-
			Education	Learning from community (Adaptation)	2
			Coping	Coping (Endurance)	2
			Preparation for challenge	Learning from others' experiences (Learning)	1
			Encouragement	Moving forward (Optimism)	2
			Maintain positive mood	Positive attitude (Optimism)	2
A conceptual model of childhood adaptation to type 1 diabetes (Whittemore et al., 2010)	Psychology	Individuals and family adaptation	Family bonds	Building rapport (Sense of community)	1
			Socioeconomic status	No equal concept	-
			Race and ethnicity	Social inclusion	2
			Treatment modality	Implications of treatments (Information seeking)	1
			Psychosocial stress and anxiety	Emotional discomfort (Experienced constraints)	3
			Self-management	Effective self-management (Gaining control)	1
			Coping	Coping (Endurance)	2
			Self-efficacy	Self-efficacy (Perceived constraints)	3
			Social competence	Social skills (Social inclusion)	2

Reference	Field of study	Topic area	Presented concepts	Related or equal concepts in the findings of this study	Theme
Building responsiveness to climate change through community based adaptation in Bangladesh (Rawlani & Sovacool, 2011)	Environmental Sciences	Adaptation of rural communities	Protection	Protections (Creating a safe environment)	2
			Institutional adaptive capacity	No equal concept	-
			Emergency planning	Being proactive (Gaining control)	1
			Capacity building	Building a sense of community, learning, community awareness	1
			Knowledge management	Knowledge co-creation	1
			Community capacity	Community awareness	2
			Technology transfer	No equal concept	-
			Hazard insurance	No equal concept	-
The components of resilience perceptions of an Australian rural community (Buikstra et al., 2010)	Environmental Sciences	Adaptation of rural communities	Livelihood protection	Creating a safe environment	2
			Social networks and support	Social support (Social inclusion)	2
			Positive outlook	Positive attitude (Optimism)	2
			Learning	Learning from community (Adaptation)	2
			Early experiences	No equal concept	-
			Environment	Safe environment (Community support)	2
			Infrastructure and support services	Diverse means of communication (Communication)	1
			Sense of purpose	Positive atmosphere (Optimism)	2
			Diverse and innovative economy	Diversity	1 & 2
			Embracing differences	Diversity	1 & 2
			Beliefs	Cultural values (social inclusion)	2
Leadership	No equal concept	-			

7.2.3 Key Finding Related to Social Media Constraints

This sub section provides a concise discussion about the key findings related to the emergent theme of *Social Media Constraints*. It discusses how these key findings can contribute to the extant literature by corroborating, expanding, or contradicting it. Table 7.4 presents an overview of the key findings discussed in this sub section and their significance.

Table 7.4 Key findings related to Social Media Constraints

Theme	Category	Meaning	Key findings	Significance
Social Media Constraints	Perceived constraints	Social media has the potential to harm some aspects of chronic care management	People perceived social media can adversely impact the management process	The findings add a new dimension to the role of social media in CCM. They represent the potential harms of social media based on patients' and carers' experiences.
	Experienced constraints	Social media is experienced as an issue for some aspects of chronic care management	People perceived and experienced social media can adversely impact the management process	

7.2.3.1 The concept of constraint

As discussed earlier, the findings of this study reveal that social media has the potential to support the process of chronic care management (reference to Theme 1: affordances of social media). However, the findings also show considerable challenges and uncertainties around its use, and that social media technologies are not necessarily always perceived as beneficial to chronic care management. In this study, these uncertainties and challenges are recognised as the *constraints of social media*.

Broadly speaking, during this study I identified a number of key areas that may constrain the use of social media in chronic care management. According to Hutchby (2001), the constraints of an artifact are the possible ways that the artifact can restrict specific actions or impede the achievement of certain goals. Therefore, the identified constraints in this study represent a number of key social concerns and technological

uncertainties pertaining to the use of social media. These constraints were identified by the participants as potentially harmful or challenging to the outcome of the process of chronic care management.

I argue that it is important to identify and understand the major *constraints* of using social media in chronic care management, and that it is imperative to know how such *constraints*, as perceived by patients and carers, may play out in this process. This knowledge assists patients, carers, designers, and practitioners to have a deeper understanding of the impact of social media by enabling them to foresee, alleviate, or preclude the potential harm and undesirable impact of these technologies.

In the next section, I initially link the existing literature to the key findings related to the theme of *Social Media Constraints*. I then discuss how the key findings presented in this next section can enrich the existing literature by arguing for the fluid nature of social media in chronic care management and then stating its implications.

7.2.3.2 How constraints of social media are discussed in the existing literature

The theme of *Social Media Constraints* illustrates the major uncertainties, concerns, and barriers against the adoption and use of social media in the process of chronic care management. The findings show that the identified constraints are contextual and are strongly linked to the objectives of the chronic care management process. For example, the participants featured in their comments how their activities in online forums made them concerned or anxious in relation to their chronic conditions or those in their care. This is consistent with Olesen (2014), Adams, Nelson, and Todd (1992), and Moore and Benbasat (1991) who argue that the adoption, use, or rejection of a technology is subject to the user's perception and judgement of its usefulness or otherwise.

Key studies suggest that social media can alleviate many challenges pertaining to the social and emotional aspects of chronic care management (Barak et al., 2008; Van Uden-Kraan, Drossaert, Taal, Seydel, & van de Laar, 2009). However, the findings of this study enrich this stream of literature by showing that, in contrast, social media is not always a positive influence on the process of chronic care management.

The findings show that *emotional discomfort* is one of the major *constraints* of using social media in chronic care management. *Emotional discomfort* is defined here as an emotional state in which a person feels anxious or even depressed (Baker & Moore,

2008; Taylor et al., 2012). This constraint of social media is highlighted in studies by O'Keeffe and Clarke-Pearson (2011) and Jiang, Heng, and Choi (2013). They attribute the emotional challenges of social media to issues concerned with the inappropriateness of content and privacy; however, they also believe that social sites such as Facebook can be the source of depression and social isolation.

These issues were also evident in the findings as many of the participants raised concerns regarding their privacy on social media. The participants also mentioned that on many occasions they decided to terminate their participation in the online forums, as they found that they were isolated from real life because the contents of the forums were depressive and sad. This aligns with a study by Paul and Brier (2001) that indicates online communication can create emotional distress and a sense of isolation as participants may lose connection with real people.

These above studies confirm the findings that show the use of social media can have a limiting and adverse influence on chronic care management as these technologies can generate emotional distress to patients and carers. However, the findings enrich the literature by linking the emotional implications of social media to shared contents and stories. In other words, the findings extend the existing literature by showing that the emotional distress of social media can also be a result of the features that frequently expose patients and carers to unpleasant news about their friends or other patients with similar conditions.

Issues related to social media *information quality* and *reliability* are also widely discussed by researchers (Arazy et al., 2011; Marshall & Williams, 2006). Patients concerns regarding *poor information quality* have been widely identified within literature (Eysenbach, Powell, Kuss, & Sa, 2002; Stadtler, Scharrer, Brummernhenrich, & Bromme, 2013). One important aspect of such concerns, according to Eysenbach et al. (2002), is that they represent people's perception about the lack of certain characteristics of a piece of information that make it untrustworthy for management purposes. This is consistent with the findings of this study that showed some of the perceived issues, such as *information overload* or *poor information presentation*, were related to the technological features of social media.

The participants frequently voiced their concerns regarding the difficulties of searching information within forums, accessing previous posts, or presenting

information to other people in forums. However, the findings also strongly suggest that issues such as *reliability of the source of information* is more concerned with the social aspect of using social media (Kotlarsky & Oshri, 2005) than technological ones. For instance, many of the participants emphasised that they would cross check the imparted information on forums with reliable online (for example, official websites) or offline (for example, doctors) resources.

Although not all of the identified concerns and uncertainties in the findings regarding the *legal implications* of using social media are discussed within the literature, *confidentiality* and *privacy* have been highlighted frequently by many scholars (Li, 2013b; Van Der Velden & El Emam, 2013). The *legal implications* of social media are defined as the possible legal consequences of using social media for supporting decisions in chronic care management (Thompson et al., 2011). Evidence from literature shows that both the *legal and privacy implications* of using social media have been the major concerns for many of the consumers of healthcare services and service providers (Hawn, 2009; Ohno-Machado, Silveira, & Vinterbo, 2004; Von Muhlen & Ohno-Machado, 2012).

Low self-efficacy as a limiting factor of using social media in chronic care management is also discussed in the literature. Here, *low self-efficacy* means people's perception of their lack of ability to use the potential of social media (Williams & Bond, 2002). The findings show that many of the participants who were not interested in using social media (mainly older patients or carers) indicated that a low confidence in their technological skills and their perception of social media as a complex environment had made it difficult for them to trust these technologies as they didn't know how they worked.

These findings are consistent with findings from a study by Nakayama et al. (2009) that show *age* and *lack of confidence* are two factors that contribute to patients' avoidance of using new innovative technologies, such as social media. A seminal study of Facebook by Ellison et al. (2007) also shows that a lack of confidence and low self-efficacy of users in using social media are related to their low satisfaction with their life condition. This point is also highlighted in the findings as many of the patients and carers linked their condition and circumstance to the emotional distress that resulted from using social media.

While the findings present a number of key constraints separately, some patterns were also visible. The age of the participants correlated to their willingness to use, and confidence in using, social media. For many of the younger patients and carers, the use of social media was a routine activity and an integrated part of the management process. This group of patients and carers had no hesitation or concerns about using different social media platforms to talk and discuss their experiences with chronic care management. This group represents what Prensky (2004) and Vodanovich et al. (2010) call digital natives - people who see new communication technologies as a natural means of interacting with others.

On the other hand, older patients and carers showed very little confidence and interest in using social media or had major excuses to avoid them. Perhaps the more interesting groups were the middle-aged users who would fall somewhere between the lower and the middle of the *ladder of participation* (Oestreicher-Singer & Zalmanson, 2013), and who were constantly evaluating the *costs and benefits of their participation* in the online forums (Butler et al., 2014). Most of the identified concerns and challenges (that is, constraints) came from this group of participants. On the other hand, younger patients did not express specific concerns regarding the potential legal issue of using social media. As Vodanovich et al. (2010) explain, younger people, as digital natives, have different perceptions of the applications and implications of social media.

However, as digital *immigrants* - a term coined by Prensky (2001) - the tensions, struggles, uncertainties, and leadership competitions on the *ladder of participation* were more evident in the comments from the middle-aged group of participants. This means that the demographic aspects of social media users play a central role in how these technologies are perceived and experienced and how they can influence the dynamics of the resilience of a community. This point has implications for designing and supporting online communities, and particularly patient or carer online-support communities.

7.2.3.3 Constraints perceived versus constraints experienced

Further study of the findings shows that the explored *constraints* represent two broad categories: *perceived constraints* and *experienced constraints*. The major distinguishing aspects between these two categories were the patients' experiences and perceptions of using social media in *practice*. Some of the participants identified a

number of constraints according to their own experiences with social media (for example, emotional distress), while some of the constraints were only perceived to exist by the participants (for example, difficulty of use). By practice, I do not mean individual activity (for example, doing something). Rather, as Leonardi (2012) posits, practice is a social space that is shared in common by members of a community where individual and group-coordinated activities are negotiated. Orlikowski (2010) conceptualises this space of negotiated activities as a constitutive entanglement of the social agency of humans and the material features (that is, material agency) of technology.

By drawing on both social and technological features of social media, the category of *perceived constraints* represents the perceived uncertainties and concerns around the use of social media. As Treem and Leonardi (2012) explain, people perceive an artifact as affording distinct possibilities for action because their goals of using it can vary. In this view, people may perceive that an artifact offers no possibilities for action, perceiving instead that it constrains their ability to carry out their goals.

As such, this category of *perceived constraints* captures the participants' perspectives about the issues that made them dubious and unsure of the usefulness of social media for management-related activities. The findings showed, however, that these constraints were mainly based on people's speculations of the features of social media, rather than their direct experiences of using these technologies in practice. Some of the patients and carers perceived these constraints as potentially harmful or risky even before they engaged with them and used the technologies to manage their conditions.

On the other hand, the category of *experienced constraints* represents how social media was perceived and experienced by the participants as limitations or barriers to the process of chronic care management. The identified limitations and barriers (for example, emotional discomfort) were mainly based on the experiences of the online forum members. For example, the findings showed that many of the participants directly experienced social media as a source of issues such as social pressure. Similar ways of experiencing the impacts of social media were identified in other studies (e.g. Oh et al., 2013; Vaast, 2007). However, from a constraints perspective, the participants' perceptions of social media were formed by their own direct engagement (Hutchby, 2001) with the features of social media while they were practicing socially

bounded management activities (Mansour et al., 2013). It was not difficult to see in the findings that certain decisions, such as whether to use social media to ask questions about a health-related problem, were influenced by the participants' previous experiences of this practice.

7.2.3.4 Contributions and implications

Conceptualising the findings in terms of constraints, both perceived and experienced, enriches the existing literature by offering a new way of understanding the constraints of social media for chronic care management. The major focus of the existing literature for explaining the constraints of social media has been mainly on technological characteristics (e.g. Mitchell & Ybarra, 2009; Moreno, Fost, & Christakis, 2008; Stadler et al., 2013; Takahashi et al., 2009). However, the presented view in this section transcends the particularities of social media by focusing on the kinds of constraints that these technologies typically place on people's behaviours across various management activities.

In other words, this traditional way of conceptualisation attributes the constraints of social media to the relationship between individuals' perceptions of the capabilities of these technologies and their real experiences of using them. Instead, in this view, people's perceptions and experiences stem from social contexts within which social media is used and the technological features by which activities are practiced (Majchrzak et al., 2013; Zammuto et al., 2007).

The examination of the constraints of social media in the process of chronic care management and the related findings has implications for the IS-healthcare literature. The adopted emic approach - that is, how people perceive the world and how they imagine and explain things (Harris, 1976) - to *Social Media Constraints* (that is, the enactment of social and technological features in practice) spotlights an aspect of these technologies that is rarely taken into account in the IS-healthcare literature.

The existing literature either provides a social account of the constraints that are often treated as an emergent concept (e.g. Ellison et al., 2007; Ellison, Vitak, Gray, & Lampe, 2014; Steinfield, Ellison, & Lampe, 2008), or a technological account that focuses on the impact of features of these technologies on human behaviour and decisions (Stellefson et al., 2013). The view of this study, however, enriches the existing literature by providing a relational approach to the constraints of social media that

focuses on people's perceptions and behaviour rather than an abstraction of technology or the technological features of social media.

While the concept of *Social Media Constraints* has been treated by some scholars as being of little analytical value (e.g. Lau et al., 2012; O'Connor, 2009), a further investigation of the existing literature shows that other researchers find it a concept with analytic power that can be used to account for the social and psychological outcomes of social media (Da Cunha & Orlikowski, 2008). However, the juxtaposition of these different views clearly shows the lack of consensus in the literature about the processes through which *Social Media Constraints* can allow or prevent people to achieve goals.

One interesting aspect of the presented findings in this section is that they show a link between the contrary aspects of social media that present the dynamic and fluid nature of these technologies. For example, the findings indicated that online forums allowed members to construct discourse with others. Such discursive practices enabled the enactment of affordances such as empowerment and emotional support that were seen by the participants as useful and supportive processes for chronic care management.

While the findings suggest that such performances of social media could assist patients and carers to address many of the challenges involved the process of chronic care management, in contrast, they also highlight negative and even potentially deleterious consequences of such performances (Theme 3: *Social Media Constraints*). In other words, they show that the use of social media to support patients and carers' experiences of the process of chronic care management can both facilitate and at the same time pose risks to the outcomes of this process.

Thus, as the findings suggest, social media has a fluid and dynamic nature (Majchrzak et al., 2013). An initial perception about constraints informs future experiences, which can create new perceptions that in turn may lead to new experiences. Embedded in practice, these two dimensions of *Social Media Constraints* (that is, perception and experience) are inseparable; as Barad (2003) argues, they both form and enact through practice. By underlining the relationship between perceptions and experiences in online forums, the findings point to the entanglement of affordances and constraints of social media that enact in different ways in practice.

This relationship between affordances and constraints has implications for research on online forums, particularly those used in chronic care management. Prior findings have noted that online forums can be used to frame a community's experiences to *mobilise emotional and intellectual resources* towards or against change (Theme 1: *Affordances of Social Media*). These experiences were mainly manifested in a number of practices such as engaging in and expressing emotional support. These practices were social activities that enacted as affordances of social media (Majchrzak et al., 2013; Orlikowski & Scott, 2013). However, the findings suggest that an understanding of the affordances or constraints of social media would be incomplete without acknowledging and investigating the influence of these two phenomena on each another.

7.3 Reflection on the Preliminary Conceptual Framework

As Figure 2.2 shows, the preliminary model consists of six major areas including community capital, individuals' capacities, environmental factors, technology, social space, and technological space.

The following section discusses these six areas in relation to the findings of this study, leading to a modified and more accurate conceptual model that sharpens our theoretical understanding of the notion of Community Resilience in chronic care management communities. To recapitulate, the findings of this study were represented in three major themes: Affordances of Social Media (Theme 1), Community Resilience (Theme 2), and Social media Constraints (Theme 3).

While these themes are represented as distinctive constructs, it is noteworthy that they are enmeshed – through their categories – in the preliminary conceptual model. Nevertheless, a closer inspection of the emergent theory and further reflections on the key findings enables me to understand and tease out the areas that can be modified or expanded within the preliminary conceptual model.

7.3.1.1 Community Capital

The preliminary conceptual model shows that community capital consists of four major components: social capital, human capital, cultural capital, and supporting infrastructure.

According to Bourdieu and Wacquant (1992), social capital is the sum of all actual and virtual resources that accrue to individuals or groups, as they possess durable networks of more or less institutionalised relationships. The findings of this study show that social capital is relevant to the findings related to Theme 1 (for example, emotional support) and Theme 2 (for example, social inclusion). However, Theme 3 findings are more consistent with the studies that argue for an adverse role of Internet-based applications on community social capital (for example, as a source of social pressure).

In general, social capital can be understood in two major forms: 'bonding' and 'bridging' (Blanchard & Horan, 1998; Leonard, 2004). According to Ellison et al. (2014), these categories describe resources embedded in different types of relationships. Bonding is the formation of tightly-knit and close relationships between individuals (Ellison et al., 2007). In this regard, many instances, as evidenced in the findings, clearly indicate the positive influence of social media in the development of close relationships among the members of the online forums (for example, emotional comfort and sympathy).

Further, the findings clearly show that social media strongly supports the creation of 'weak ties' (Blanchard & Horan, 1998) between patients and carers participating in the online forums (for example, through the sharing of resources). Weak ties is a term adopted to represent the bridging form of social capital (Wellman et al., 2001), and it refers to loose connections between individuals, who typically do not provide emotional support to one another but may provide useful information or new perspectives (Ellison et al., 2007).

Human capital is often described as the influence of human knowledge and skills in the growth of different aspects of a community (Barro, 2001; Cohen & Soto, 2007). In general, the concept of human capital encapsulates three concepts: knowledge and skills (Teachman et al., 1997), diversity (Davenport, 1999), and a sense of belonging to community (Callaghan & Colton, 2008).

That said, it is evident in the findings that social media plays a key role in enhancing patients' and carers' knowledge in different areas, such as chronic disease (for example, knowledge co-creation as an affordance of social media), treatment options (for example, Empowerment as an Affordance of Social Media), and other people's

experiences (for example, Learning from community as a dimension of Community Resilience). This aspect of social media is identified in the findings as one of the affordances of social media.

Linking diversity to human capital, the findings also show how the use of social media provides a variety of means to incorporate different aspects of diversity (for example, disease, perspectives, and culture) into the process of chronic care management. Further, the findings strongly suggest that social media supports human capital by affording the development of knowledge creation among patients and carers (Theme 1: Affordances of Social Media).

Among the three forms of cultural capital that Bourdieu (1986) identifies, (that is, embodied, objectified, and institutionalised), the findings bring to the fore the influence of embodied cultural capital in chronic care management. It is evident in the findings that understanding people's cultural values provides a strong basis for the resilience of the community (for example, Social Inclusion as a dimension of Community Resilience). This point is particularly conspicuous in relation to Adaptation and Social Inclusion within Theme 2 (Community Resilience).

The supporting infrastructure is mainly represented by the communication capabilities of social media (Baym, 2009). It is evident in the findings that social media affords new and innovative means of interpersonal communication (for example, Communication with individuals in Theme 1) and mass communication (for example, Different channels of communication in Theme 1). The findings also show that social media provides communication options that were not previously possible (for example, Gaining new capabilities in Theme 1).

In summary, the findings of this study confirm the significance of community capital in the resilience of chronic care management communities. Table 7.5 provides an overview of how the findings relate to community capital.

Table 7.5 Links between community capital and the findings

Category in the conceptual model	Meaning	Supported area(s)	Links to the findings	Example codes
Social capital	Resources accessible through networks of relationships	Bonding	Theme 1	Emotional support
		Bridging	Theme 1 and Theme 2	Community support, Support network
Human capital	Resources associated to individuals' knowledge and skills	Knowledge and skill	Theme 1 and Theme 2	Knowledge co-creation, Learning from community
		Diversity	Theme 1 and Theme 2	Building a sense of community, Social inclusion
		Sense of belonging	Theme 1 and Theme 2	Building a sense of community, Social inclusion
Cultural capital	Resources available through people's beliefs and values	Embodied culture	Theme 2	Adaptation, Social inclusion
Supporting infrastructure	Technological services supporting human activities	Communication	Theme 1 and Theme 2	Building a sense of community, Diverse channels of communication

7.3.1.2 Individuals' Capacities

Evidence across different themes supports the category of individuals' capacities in the conceptual model. Social network (Kirmayer, 2009) was explicitly discernible in both Theme 1 (for example, social support) and Theme 2 (for example, social inclusion). The concept was more evident in the second theme where the participants discussed the role of social inclusion in the resilience of chronic care management. The significance of a social network was also discussed in the first theme by the participants as they underscored how this aspect of social media could influence the creation of a sense of community (for example, social support), the formation of knowledge networks (for example, knowledge co-creation), and empowerment (for example, accessing resources).

Communication was also strongly represented across all three themes, particularly in Theme 1 (for example, overcoming communication barriers) and Theme 2 (for example, ongoing communication). It was expected that communication would be in

the findings but what made it interesting was how communication was acting as a gel, linking all three elements of the conceptual model through activities (for example, reaching out), concepts (for example, honesty in communication), and attributes (for example, communication as an attribute of Community Resilience).

Table 7.6 Links between individuals' capacities and the findings

Category in the conceptual model	Meaning	Supported area(s)	Links to the findings	Example codes
Social network	Individuals' access to resources through their social network	Access to resources	Theme 1 and 2	Support group
Communication	Ability to communicate effectively	Method, concepts, and attributes	Theme 1, 2, and 3	Different communication methods
Learning	Individuals' access to learning resources and options	Individual learning	Theme 1, 2, and 3	Learning about disease
Adaptability	Individuals' ability to adapt to changing circumstances	Individual adaptability	Theme 2	Optimism, Endurance

Individual learning (Walker & Salt, 2006) and adaptability (Livneh, 2001) are both in the findings, particularly in the first two themes. While adaptability is represented by concepts, such as endurance and optimism (Theme 2: Community Resilience), individual learning is pronounced mainly in relation to learning from feeling and learning from experiences (Theme 1: Affordances of Social Media). The concept of learning is also implicitly mentioned in Theme 3 (Social Media Constraints) as the participants unfolded their experiences of using social media. Table 7.6 provides an overview of how the findings relate to the category of individual capacities.

7.3.1.3 Environmental Factors

The preliminary conceptual model shows that community capital consists of the two major components of social milieu and regulations. Social milieu was represented by the diversity of actors in Theme 1 and Theme 2, diversity of cultures in Theme 2, and diversity of perspectives in Theme 2. Also, as evident in Theme 1 (for example, Building rapport: age and gender), social milieu was represented by the demographic structure of the online forums, such as age or gender.

However, the representation of institutions (Nelson et al., 2007), as one of the aspects of social milieu, did not explicitly stand out in the findings. That said, the influence of institutions was strongly visible in the findings related to the affordance of empowerment, where the use of social media enabled patients and carers to negotiate healthcare (Theme 1: Affordances of Social Media).

Table 7.7 Links between environmental factors and the findings

Category in the conceptual model	Meaning	Supported area(s)	Links to the findings	Example codes
Regulation and policies	The influence of regulation and policies on Community Resilience	Information dissemination	Theme 1	Knowledge co-creation
		Privacy	Theme 2 and 3	Adaptation, privacy concerns
Social milieu	The influence of social milieu on Community Resilience	Diversity	Theme 1 and 2	Disease spectrum, diverse culture
		Demography	Theme 1	Building rapport
		Institutions	Theme 2	Negotiation power

Regulation and policies (Anderies, Walker, & Kinzig, 2006) were mainly traceable in the findings concerned with Theme 3. They were represented by the participants' concerns about issues related to the use and dissemination of information over social media. Further, issues concerned with privacy and the potential legal implications of using social media provided strong evidence to support the role of regulation and policy in Community Resilience. Table 7.7 provides an overview of how the findings relate to the category of environmental factors.

7.3.1.4 Technology

Technology, and social media in particular, is represented strongly in the findings related to Theme 1 (for example, affordances such as empowerment) and Theme 3 (for example, constraints such as lack of information quality). In general, the findings confirm the influence of technology on the resilience of the process of chronic care management. Features, such as the ability to generate and search content, create and publish profiles, and anonymity of users were among those accentuated in the findings. The findings also draw attention to some of the important Affordances of Social Media, such as emotional support and empowerment. Further, the findings

underline the relationship between the social aspects of technology and the technological features of social media in the process of chronic care management.

7.3.1.5 Technological and Social Spaces

The technological space (that is, the activities that mainly rely on the features of social media) is clearly represented by the features of social media across all the three themes. It is evident in the findings that some of the activities related to the social space of chronic care management tightly relied on the technological features of social media. These features are mainly represented in activities such as information seeking (Theme 1), information sharing (Themes 1 and 2), anonymity (Themes 2 and 3), and communication (Themes 1 and 2).

Alongside the technological space, the influence of social space is also evident in the findings. Most of the findings in each category or theme point to one of the aspects of the social space. It is clear in the findings that the resilience of the process of chronic care management – as a community – was innate to the social space of the model. Issues such as social inclusion (Theme 3), social support (Themes 1 and 2), community support (Themes 1 and 2), sense of community (Theme 1), social pressure (Theme 3), and awareness at the community level (Theme 2) are all clearly pointing to the social space of resilience.

Table 7.8 Links between technology (that is, social media) and the findings

Category in the conceptual model	Meaning	Link to the findings	Example
Technological space	Activities or phenomena that are linked to the technological aspects of Community Resilience	Themes 1 and 3	Information seeking, Computer literacy
Social space	Activities or phenomena that are linked to the social aspects of Community Resilience	Themes 1, 2, and 3	Social support, Friendship, Legal concerns
Social-technological space	Activities or phenomena that enact through the relationship between social and technological aspects of Community Resilience	Themes 1 and 3	Empowerment, Language barriers

While the existence of both social and technological spaces are evident, it was extremely difficult to make a clear distinction and draw a clear line between these two aspects, as they seemed to be embedded – or to use a more accurate term – entangled

(Orlikowski, 2010) within each other. Table 7.8 provides a summary of the links between the findings and the social and technological spaces of the conceptual model.

7.4 Chapter Summary

By linking the key findings to the extant literature, in this chapter I highlighted how key findings and emergent concepts are discussed by other scholars. Through the presented discussions, I focused on areas of the existing literature that gave more strength to the key findings of the study, highlighting their relevance to the research problem and their significance for the IS discipline. This approach enabled me to position the findings of the study in relation to a number of relevant theories that inform the process of theoretical coding in the next chapter.

Also, in this chapter, through the presented discussions, I aimed to show what newness the study is bringing to the existing literature. So, I highlighted how the key findings expand and enrich our understanding of affordances of social media in relation to community resilience. This was achieved by highlighting areas within the existing literature where the key findings provided further clarifications or new analytical dimensions. Also, I identified areas within the literature that are in contradiction with the key findings of this study. I argued there is a need for further scholarly investigation and research in those areas.

One major contribution of the chapter is rooted in discussions with regard to the preliminary conceptual framework. Through discussions linked to tables 7.5 to 7.8, I showed how my preliminary understanding of affordances of social media and their relationships to community resilience (as presented in Chapter 2) has modified, extended, and refined to a new level of conceptualisation and theoretical understanding.

This new level of understanding is supported by new observations and the interpretation of empirical evidence. It also presents a theoretical transition from a preliminary conceptual model that is grounded in the existing literature to an understanding that is grounded in empirical data. As a result, this transition has sharpened my understanding of the complex and contingent role of social media in community resilience.

Overall, discussions in this chapter provide a focused theoretical direction toward the emergent concepts, laying the analytical groundwork for scaling up the key findings of the study to a higher level of abstraction. As such, in the next chapter, the major focus will be on theoretical relationships between the emergent concepts and investigating how they can be integrated into more formal and high-level theories.

8 BUILDING THEORY

8.1 Introduction

As indicated in Chapter 1, the broad purpose of this study is to explore the potential of social media in supporting the resilience of healthcare communities. More specifically, this study aims to understand how social media can support the resilience of patients' and carers' communities in chronic care management. On a par with this broad research problem and in the context of the research question, this chapter aims to set out the discussion surrounding the findings of this study in the light of the extant literature.

The first step in this chapter is to go through the process of theoretical coding and theory building at two levels: categories and themes (Section 8.2 Building a Theory of Social Media). The following discussion is organised according to the three themes: *Affordances of Social Media* (Section 8.2.1), *Community Resilience* (Section 8.2.2) and *Social media Constraints* (Section 8.2.3).

This theorisation of the findings at theme level will be undertaken in the light of the research problem and the specific research questions of this study (Section 8.2.4). By taking into account the adopted theoretical lens – sociomateriality - the emergent substantive theory of social media will be scaled up to a higher level of abstraction (Section 8.3 Scaling-up the Theory). The chapter concludes (Section 8.4) with the process of analytical generalisability, using sociomaterial affordances as the theoretical lens to scale up the emergent theory of social media.

8.2 Building a Theory of Social Media

In the previous chapter, the empirical data were conceptualised into categories and themes through a number of substantive codes. Following Glaser (1978), the purpose of this section is to conceptualise the emergent categories and themes through the process of theoretical coding. In doing so, the aim is to identify how these substantive

codes, presented and discussed in Chapter 4, may relate to each other (Urquhart, 2013).

The process of theoretical coding is presented at two levels: categories and themes. At the category level, the relationship between the categories that construct each theme is presented and discussed. At the theme level, these relationships are delineated in relation to the major themes that construct the final theory. Each relationship is discussed in the light of the research question, and figures and instances from the empirical evidence are presented to support each relationship.

8.2.1 Theorising the 'Affordances of Social Media' Theme

The four concepts of *building a sense of community*, *emotional support*, *knowledge co-creation*, and *empowerment* are the major categories that construct the *Affordances of Social Media* theme (refer Figure 8.1). In identifying the relationships between these constructs, the category of building a sense of community plays a central role by linking the other categories and giving them more meaning and reasons for their importance.

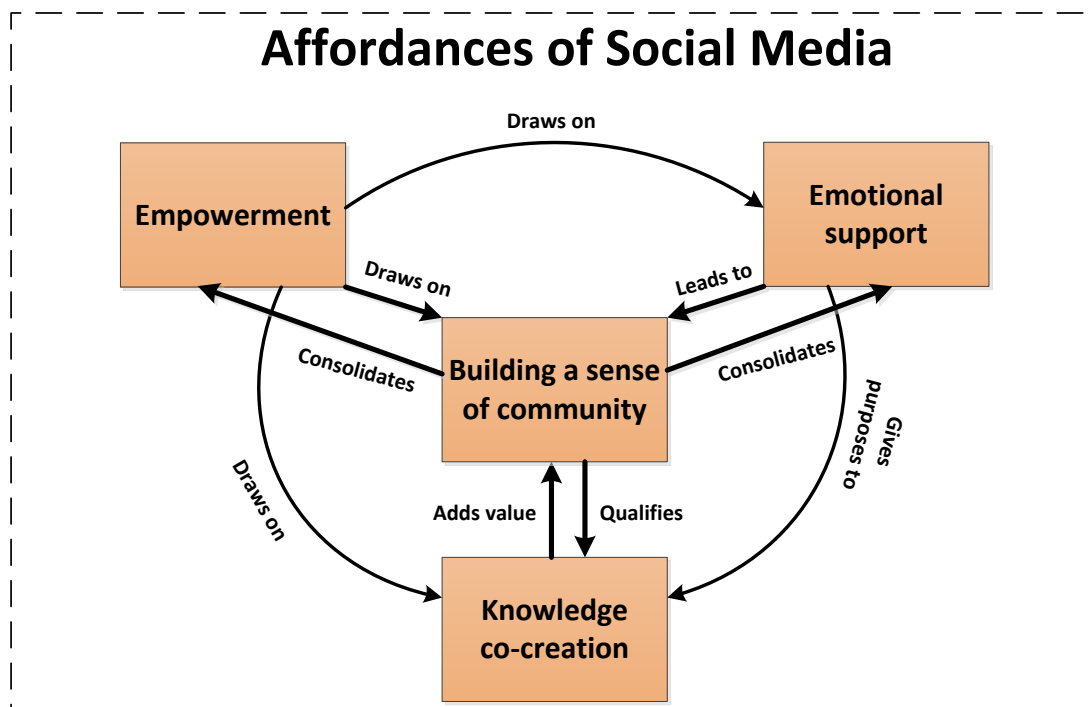


Figure 8.1 Relationships between the categories of the Affordances of Social Media theme

Although this does not mean that there is no independent and direct relationship between the other constructs, it appears that the absence of building a sense of community significantly downgrades and demotes the importance of the other constructs. On the other hand, the occurrence and enactment of building a sense of community is not possible if social media does not support patients and carers in feeling that they gain emotional support through their interaction with other social media users. Also, feeling unempowered by not receiving emotional support, or being unable to create and gain new knowledge through seeking, accessing, and sharing information, diminishes the need and importance of building a sense of community.

It seems that these constructs are locked together in such a way that no previously existing and distinctive characteristics are peculiar to any of them; rather, their roles and affordances need to be developed and played out as patients and carers engage with social media. As such, the relationships between these constructs are neither linear, nor one-way, relationships. Rather, once patients and carers engage with social media, the interlocked characteristics and relationships between these categories are constantly reconfigured. Six relationships between the categories are shown in Figure 8.1. Each of these relationships is discussed in the following sub sections.

8.2.1.1 Relationship between 'emotional support' and 'knowledge co-creation'

Emotional support is one of the important *Affordances of Social Media*. Many of the participants highlighted how they believed social media could help them to seek and gain *emotional support*. This particular *affordance of social media* (that is, *emotional support*) provides a strong reason for patients and carers to use social media. It enables patients and carers to share different types of information and helps them to co-create knowledge about their conditions (or the condition of those in their care). As a result, they can take control of the management process. As such, interacting with other patients and carers over social media becomes a *purposeful* and valuable activity. It can bring more hope to the uncertainties pertaining to the process of chronic care management and help patients and carers to feel more emotionally comfortable.

For example, patients in many instances commented that they found social media a *source of emotional comfort* as *sharing their feelings and experiences* with other patients had helped them to gain *positive feelings* about themselves. As such, they

purposefully decided to go online in order to *find information* and communicate with people who were willing to *share their positive experiences* and assist them to become more *hopeful* on the future.

8.2.1.2 Relationship between 'emotional support' and 'building a sense of community'

Gaining *emotional support* through social media can also *lead to building a sense of community*. It was evident from many of the participants' comments that *learning* about other patients' conditions and relating emotionally to them made it possible for patients and carers to feel and gain a level of *emotional comfort*. This led to the creation of shared emotions and interests among patients and the *development of a rapport* between some of the participants in the online patient forums.

For example, both patients and carers mentioned frequently that they had stronger *rapport* with the forum participants who had *similar chronic conditions*, *shared similar experiences* regarding the management of their conditions, or simply were in the *same age groups*. They also highlighted that they were willing to discuss and *communicate* their experiences with these groups of patients and carers and provide them with *peer support*. As another example, many of the patients and carers highlighted how their participation in social media and patient forums provided them with *sympathies* and *benevolences* from other people. For them, the *emotional support* they were receiving through social media and online forums led to the formation of new *social networks* or the expansion of existing ones, which in turn led to *building a sense of community* with the forum participants.

The affordance of *building a sense of community* also has a *consolidation* relationship with the category of *emotional support*. Using social media to gain emotional support seems to be a major attraction of these technologies to patients and carers. However, the impact of *building a sense of community* goes beyond this attraction as many of the patients and carers felt that they were getting support, not only from individuals, but from a community that was concerned with their health and wellbeing and cared about their emotions and feelings. For patients and carers, their interactions with their online-support community enabled them to develop a stronger sense of *emotional comfort* and *raise higher hope* for their future.

8.2.1.3 Relationship between 'empowerment' and 'emotional support'

The category of *empowerment* draws on other *Affordances of Social Media*. One of the affordances that *empowerment* relies on is *emotional support*. Based on the participants' perspectives, the feeling of being *emotionally supported* by other people was very assuring, and such assurance gave them more confidence to face the difficulties of managing their chronic conditions. It was evident in the findings that social media could provide patients and carers with emotional resources that enabled them to feel more independent and empowered, because they had more control – in particular emotionally – over the management process.

For example, many of the patients and carers drew on the emotional support, encouragement, and positive feelings they received from the social media resources to overcome communication barriers and feel sufficiently confident to negotiate the healthcare process. As another instance, some of the carers used social media to give vent to their negative feelings and attract other people's sympathy. This enabled them to reach more people and get access to more resources that would help them be more proactive, and have better understanding of the disease and better control over the management process.

8.2.1.4 Relationship between 'empowerment' and 'knowledge co-creation'

Empowerment also draws on *knowledge co-creation*. The process of *information access* and *information sharing* through social media, and the interaction between patients and carers, enables them to gain *new understandings about their conditions* and *learn* about other possible means of adapting to and dealing with the difficulties of chronic care management. In many instances, the participants argued that such *new knowledge* gave them the confidence to deal with their condition and the power to *negotiate* resources.

For example, a carer of a patient with arthritis argued that she drew on *knowledge* she gained through patient forums and Facebook to *negotiate* with doctors and specialists for new treatments for her child with a chronic condition. She felt sufficiently *confident* to ask them for clearer explanations about the potential side effects of the prescribed medications.

8.2.1.5 Relationship between 'empowerment' and 'building a sense of community'

Empowerment also draws on the *building a sense of community* affordance. Patients and carers feel more empowered as they feel that they are part of a supportive community that provides them with a variety of intellectual resources and emotional support. As an example, many of the patients commented on how accessing different *social networks* through social media, accessing *new perspectives*, or *learning* from other patients' *feelings and experiences* enabled them to *gain new capabilities*, *overcome many communication barriers*, and gain a *better understanding* about their condition.

Although it is interesting to see that *building a sense of community* is a result of the interplay between other affordances, it is important to take into account the reflexive and entangled relationship between this category and the other affordances of social media. The centrality of the *building a sense of community* affordance provides a unique opportunity to reconcile all the identified affordances into a coherent theory.

That said, it was seen that the *building a sense of community* category relates to empowerment affordance by *consolidating* it throughout the management process. Comments from patients and carers indicated that they felt more *empowered* as they had more *control over the management process*, because they could *rely on* the diverse intellectual and emotional *resources* that their online community could offer them.

8.2.1.6 Relationship between 'building a sense of community' and 'knowledge co-creation'

The nature of the relationship between *building a sense of community* and *knowledge co-creation* is about filtering and validating the *knowledge* that can be created through social media activities. Patients and carers *access* different types of information about their condition and *share the variety of their experiences and feelings* with other users. Through this process, they gain *new insights and knowledge* about their condition and the management of their illness. However, reliable knowledge is knowledge that has been checked, compared, modified, and confirmed by different reliable and trusted resources within the supporting online community. In other words, *building a sense of community* provides a means for patients and carers to *qualify* the knowledge that they create through their interactions over social media.

This process, in turn, highlights the *value-adding* relationship between the *knowledge co-creation* and *building a sense of community* categories. In other words, the *co-created knowledge* becomes qualified by the online community of patients and carers and, in return, this qualification *adds more value* to this community as it becomes a relatively reliable source of *knowledge* and *learning* for patients and carers. This relationship, in turn, can further consolidate both *emotional support* and *empowerment* affordances. The value-adding relationship between the *knowledge co-creation* and *building a sense of community* affordances was evident in many instances of the collected data.

For instance, patients and carers commented many times how *sharing their experiences and feelings* had enabled them to *learn* from other patients and carers, or to build *rappport* with other participants in the online forums. Also, many of the patients commented on how *information seeking* and *information sharing* provided them with opportunities to bridge many of the *communication* and *social gaps* between them and other patients who had *similar conditions*.

8.2.1.7 Grounding the relationships within the literature

While the relationships between the constructs of the *Affordances of Social Media* are grounded in empirical findings, the existing literature also highlights their significance. Table 8.1 provides an overview of how the relationships presented in this section are grounded in the existing literature and the significance of these relationships. In summary, the analysis of data from this study supports the existence of mutual and reciprocal relationships between the primary affordances of social media in chronic care management. These relationships, as shown in Figure 8.1, are inseparable; however, for analytical purposes, they have been discussed separately. *Building a sense of community* is the central category as it draws on the other affordances in different ways. The three affordances are also supported by this central category in a way that the absence of any of these affordances disapproves the occurrence of the others. Together, these four constructs represent a set of primary affordances and potential capabilities of social media in chronic care management and the means to interrelate and enact in this process. Table 8.1 provides an overview of the relationships between the constructs of the *Affordances of Social Media* theme and their significance.

Table 8.1 Overview of the relationships between the constructs of the affordances of social media theme and their significance

Relation	Significance	Support from literature
Building A Sense Of Community ↓ Consolidates Empowerment	<ul style="list-style-type: none"> A close community can enhance the abilities of individual members. 	Van Uden-Kraan, Drossaert, Taal, Seydel, et al. (2008)
Building A Sense Of Community ↓ Consolidates Emotional Support	<ul style="list-style-type: none"> A close community can provide stronger emotional support to its members, and members are emotionally more relaxed and stable. 	Heaney and Israel (2002), Ellison et al. (2007)
Building A Sense Of Community ↓ Qualifies Knowledge Co-Creation Empowerment	<ul style="list-style-type: none"> Knowledge is contextual and its interpretation is dependent on the disease type Knowledge that is created in an online support group can be specific to that group. 	Hew and Hara (2007), Barak et al. (2008)
↓ Draws on Emotional Support Empowerment	<ul style="list-style-type: none"> Patient empowerment cannot be fully and properly achieved without emotional support. 	Van Uden-Kraan, Drossaert, Taal, Shaw, et al. (2008)
↓ Draws on Building A Sense Of Community	<ul style="list-style-type: none"> The sense of belonging to a supportive community helps people to feel they are empowered Patients with strong support from their communities are more independent in making critical decisions 	Van Uden-Kraan, Drossaert, Taal, Shaw, et al. (2008), Fox, Ward, & O'Rourke (2005)
↓ Draws on Knowledge Co-Creation	<ul style="list-style-type: none"> Patients who actively learn from other patients' experiences and knowledge have higher confidence in negotiating treatment and healthcare services 	Keeling, Khan, and Newholm (2013), Bartholomée and Maarse (2007)
↓ Leads to Knowledge Co-Creation	<ul style="list-style-type: none"> People with higher emotional connection and support are more likely to offer and share their experiences. Emotional support in chronic care management can create a positive experience (knowledge) of the process for the involved parties. 	Wright (2012), Furler et al. (2008)
↓ Gives purpose to Knowledge Co-Creation	<ul style="list-style-type: none"> Users who feel they are emotionally supported by the members of their communities (online or offline) are more motivated to help other members by sharing their resources and knowledge. 	Bateman et al. (2011),
↓ Adds value to Building A Sense Of Community	<ul style="list-style-type: none"> The knowledge that can be created through members' interactions within a community can strengthen their social ties and emotional bonds. 	Levin and Cross (2004) Wasko and Faraj (2005)

8.2.2 Theorising 'Community Resilience' Theme

Adaptation, communication, social inclusion, and community support are the four major underpinning categories of the *Community Resilience* theme.

Adaptation is one of the most important dimensions of *Community Resilience* that relies on a variety of communal resources. As such, the relationship between this category and the other constructs of *Community Resilience* are mainly based on the provision of different types of resources. Relationships between the constructs, as shown in Figure 8.2, are discussed in the following sub sections.

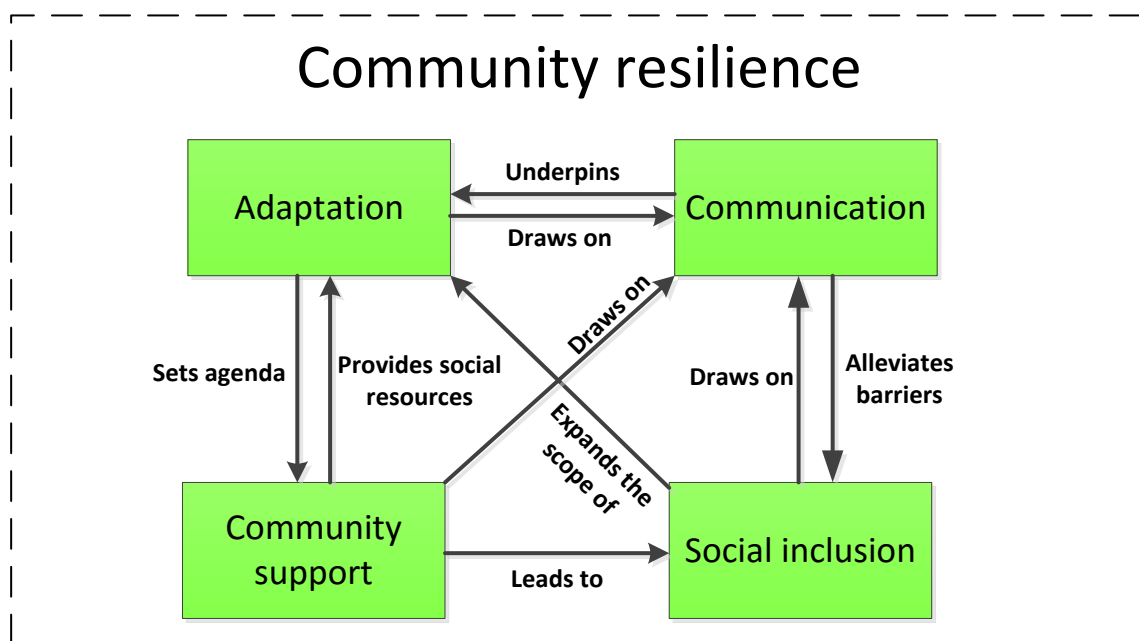


Figure 8.2 Relationships between the categories of the Community Resilience theme

8.2.2.1 Relationships between 'adaptation' and 'communication'

Adaptation draws on *communication*. It was evident in the findings that *communication* plays a central role in many aspects of *adaptation*. For example, patients clearly identified the role of *communication* in enabling them to *raise awareness* within their local community or rely on *communication* to learn about *other cultures* and *people's life experiences*.

The relationship between *adaptation* and *communication* is seen as a mutual relationship. While *adaptation* draws on *communication* as a means of accessing vital resources, *communication* underpins and supports the *adaptation* process in chronic

care management. This relationship was highlighted in many instances by the participants as they argued for the importance of *communication* to the *adaptation* process. Giving an example, in many of their comments, patients and carers pointed to the importance of accessing *multiple channels of communication* in order to *raise awareness* within the community. Also, it was highlighted in many instances how important honesty in *communication* is for patients and carers as it enables them to *create a positive atmosphere* in their lives and to *move forward*.

8.2.2.2 Relationships between 'adaptation' and 'community support'

Adaptation also has a two-way relationship with *community support*. On one hand, the relationship between *adaptation* and *community support* is seen as *setting an agenda*. This relationship means that the *support from community* has to be in line with the needs of patients and their families and the *adaptation* process has to identify those needs and the expected community support. In many of their comments, patients and carers pointed to such an *agenda-setting* relationship by highlighting the importance of *community awareness* about the needs of patients with chronic conditions and the significance of the *recognition* of patients' day-to-day problems by the community.

On the other hand, *community support provides the social resources* and platforms for *adaptation*. As an instance, it was in the findings that maintaining patients' *privacy, protecting them against misconceptions, showing care and sympathy* toward them and their families, and *sharing time and other resources* with patients are important social resources. These approaches (for example, sharing resources) toward patients and carers could help them gain *a sense of recognition* and feel *optimistic* about their lives and their future.

8.2.2.3 Relationship between 'community support' and 'communication'

Community support also draws on *communication*. The findings show that many aspects of *community support*, such as emotional support, *draw on* the characteristics of *communication* in chronic care management. For example, patients highlighted, in many instances, that showing care and sympathy, and developing close community relationships rely on many dimensions of *communication*, such as reaching out, communicating feelings, and using technology to establish an ongoing interaction with patients and carers. Additionally, many of the comments from carers point to the

importance of having a dialogue with the community in order to protect their children from others' misjudgements and misconceptions.

8.2.2.4 Relationship between 'community support' and 'social inclusion'

It was also observed that *community support* can lead to *social inclusion*. Findings suggested that support from a patient's community can help to address or remove many of the barriers against the inclusion of patients in broader social contexts. As an illustration, many of the patients highlighted the importance of having real-world friendships and explained how it is important for them to participate in the mainstream of social activities and events. They also highlighted how the elements of living in a safe environment, where misjudgements and misconceptions are absent, can facilitate the process of friendship and finding real-world friends. Some also highlighted how learning from others' experiences could help them understand some of the barriers against *social inclusion* (for example, hidden social borders) and find a way to deal with them.

8.2.2.5 Relationship between 'social inclusion' and 'communication'

The category of *social inclusion* also draws on *communication*. It was evident in the findings that many aspects and dimensions of *social inclusion* rely on *communication*. This relationship was traceable in the areas concerned with social networks, social voice, and friendships. For example, many of the comments from patients and carers pointed to the fact that they needed to expand their social network and have more social interaction with other people. They also highlighted the significance of speaking out and talking about their feelings by sharing their stories and experiences through different means and channels of *communication*. Many of the patients also highlighted the importance of technology as it enabled them to communicate with other people and make friends with them.

It was also seen that *communication* can alleviate the barriers against *social inclusion* in chronic care management. Many of the barriers to *social inclusion* are associated with patients' health conditions, and the use of technology for *communication* can remove or reduce many of these barriers. This process can enhance friendships and patients' social networks, which in turn can help raise more awareness about chronic disease, narrow social gaps, remove or dissolve social borders, and address issues related to stereotyping and stigma. To give an example, many of the patients

commented on how the use of technology has helped them to communicate with other people and find new friends, or has raised their awareness through communication of their feelings and experiences to dispel discrimination and stigmas.

8.2.2.6 Relationship between 'social inclusion' and 'adaptation'

Social inclusion can expand the scope of *adaptation*. While *adaptation* relies on *community support* and draws on the community's social resources, *social inclusion* can provide a wider range of social resources by engaging patients and carers in more diverse and broader social contexts. That is to say, *social inclusion* can expand community awareness and recognition by furthering friendships and expanding patients' and carers' social networks. This point was mentioned by many of the patients who argued that finding real-world friends and participating in social activities and events helped them feel that the gap between them and other people, arising from their condition, is narrowed or even bridged. In addition, some of the carers highlighted that social diversity and social fairness enable them to have a positive outlook about their life and inspired them to move forward and not despair.

8.2.2.7 Grounding the relationships within the literature

This section has highlighted and discussed the relationships between the constructs of the community-resilience theme and has shown how the relationships are grounded in empirical findings. However, it is important to show how they are also grounded in the existing literature. Table 8.2 provides an overview of how the relationships presented in this section are grounded in the existing literature and the significance of these relationships.

Table 8.2 Overview of the relationships between the constructs of the community-resilience theme and their significance

Relation	Significance	Support from literature
Adaptation ↓ <i>Draws on</i> Communication	<ul style="list-style-type: none"> • Communication supports major aspects of adaptation 	Street Jr et al. (2009), Nicholls (2012)
Adaptation ↓ <i>Sets agenda</i> Community Support	<ul style="list-style-type: none"> • It is important that the community supports activities and imparted information that are compatible and consistent with the patients' adaptation process 	Ebi and Semenza (2008), Sturgeon and Zautra (2010)
Social Inclusion ↓ <i>Expands scope</i> Adaptation	<ul style="list-style-type: none"> • More complex social activities (for example, workplaces) entail a higher level of adaptation 	Jones and Boyd (2011), McCullough, Kimeldorf, and Cohen (2008)
Social Inclusion ↓ <i>Draws on</i> Communication	<ul style="list-style-type: none"> • Communication at different levels is essential for social inclusion 	Lee (2009), Moorhead et al. (2013)
Community Support ↓ <i>Provides social resources</i> Adaptation	<ul style="list-style-type: none"> • Patients and their families require diverse types of social resources for their adaptation 	Reinhardt et al. (2009), Livneh (2001)
Community Support ↓ <i>Draws on</i> Communication	<ul style="list-style-type: none"> • Communication plays a central role in community activities and support 	Chuang and Yang (2014), Welbourne, Blanchard, and Boughton (2009)
Community Support ↓ <i>Leads to</i> Social Inclusion	<ul style="list-style-type: none"> • Patients need to be emotionally and mentally prepared to overcome the barriers to their social inclusion 	Gannoni and Shute (2009), Pollock (1986)
Communication ↓ <i>Alleviates barriers</i> Social Inclusion	<ul style="list-style-type: none"> • Communication can remove many of the barriers against patients' and carers' active participation in society 	Matzat (2010)
Communication ↓ <i>Underpins</i> Adaptation	<ul style="list-style-type: none"> • Adaptation is a social process that relies on multiple means of communication 	Bury (1991), Kim (2001)

That said, *communication* plays a crucial role in *Community Resilience* as it acts as a glue, linking all the aspects and dimensions of *Community Resilience* to each other. While *communication* provides and relies on the technological dimension of community, *community support* and *social inclusion* draw on *communication* to support and deliver the necessary social resources of *Community Resilience*.

8.2.3 Theorising the ‘Social Media Constraints’ Theme

As is shown in Figure 8.3, the two categories of ‘*perceived constraints*’ and ‘*experienced constraints*’ construct one of the major themes that emerged through data analysis, namely ‘*Social Media Constraints*’. These categories reflect individuals’ beliefs about the type and nature of the constraints on using social media in the process of chronic care management.

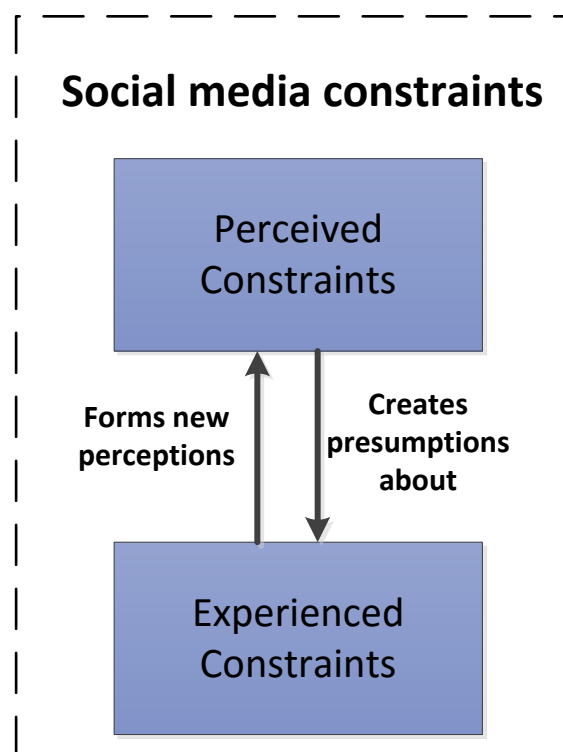


Figure 8.3 Relationship between the categories of the Social Media Constraints theme

Together these two categories address the research question of ‘how might the application of social media in chronic care management be constrained?’ To answer this question, as suggested by Glaser (1978), it is necessary to go through the process of theoretical coding and identifying the relationship between these two categories.

This process allows theorisation about how ‘*Social Media Constraints*’ were played out in the process of chronic care management.

By taking into account the research question, revisiting the empirical data suggested the existence of strong reciprocal and two-way relationships between these core categories. It was difficult to envisage the relationship between these categories without also recognising how they constantly reinforce and regenerate one another. In other words, when considering how *perceived constraints* can be related to *experienced constraints*, it became more meaningfully important to see their relationships as both complementary and reflexive.

That said, during data collection and data analysis, many of the participants who had perceptions about the potential constraints of social media also related their perceptions to the potential means through which social media could be used in practice. However, without having real experiences of engagement with social media, most of these participants sounded wary of the possible implications of using these technologies. For example, many of the participants believed that their engagement with social media could expose their private information to other users. They assume – based on rumour, news, and other people’s stories - that social media could create or impose undesirable issues when used for chronic care management. Therefore, they made non-neutral and negative comments about the potential harm of social media for this process. Their comments showed that patients’ and carers’ perceptions about the constraints of social media were shaped (at least partially) and influenced by their a priori assumptions of *Social Media Constraints*.

While these assumptions can be attributed to a person’s understandings of the affordances of a technology in a specific context, they can also be related to perceptions formed through social interaction with other people and without having any prior experience of engaging with these technologies in practice. In short, for these participants, their ‘perceived constraints’ created presumptions about constraints that had yet to be experienced.

For example, many of the patients and carers drew on their perceptions about the need for high language skills or a high level of computer literacy, or they raised concerns about legal and privacy issues to argue for the limitations of social media. They called on these perceptions to argue that the use of social media could create more issues for

them than it would help them deal with their conditions. They also brought to play their perceptions of social media to reason for their reluctance in experiencing these technologies.

Comments from the participants, who were using social media and had experience with some of their limitations, were also interesting. They mainly commented on the aspects and features of social media that did not necessarily reflect their past experiences of the use of social media. Rather, they used their past experiences to argue for their interpretations about some of the features of social media that they were seeing as new constraints.

These new perceptions were deeply embedded and shaped by the participants' contextual experiences of using social media and pointed to the possible means by which these technologies could create trouble and 'headaches' for the participants. In other words, the participants' experience of *Social Media Constraints* created new perceptions of the capabilities and affordances of these technologies.

For example, patients who found social media as a source of emotional distress also concluded that this aspect of social media could be a barrier to communicating their feelings. As another instance, many of the patients and carers whose experiences were concerned with social isolation also commented that the use of social media could affect other aspects of their social lives, such as their friendships and social networks.

Understanding and recognising the influences of these two categories in this way suggests a reciprocal and two-way relationship between these two categories. This implies that they are constantly reinforced and regenerated by each other throughout the process. In short, theorising *Social Media Constraints* in chronic care management can be formulated and explained as follows.

The constraints of adopting social media in chronic care management enact either through users' experiences of engaging with these technologies or merely through their perceptions. These two origins and forms of constraint are interlinked as the enactment of each category generates the basis for the occurrence and enactment of the other. Through experiencing *Social Media Constraints*, patients and carers gain new ways of understanding and working with social media and, therefore, their experiences with social media enable them to form new perceptions about the constraints of social media.

These perceptions are dynamic and can change, as they may or may not lead to new experiences depending on whether they paint a picture of social media as technologies with more limitations or as technologies with fewer constraints. These new perceptions lead to the formation of new presumptions of what a technology can or cannot afford. Therefore, ‘perceived constraints’ informs a user’s initial approach towards the use of social media until it is experienced. The ‘perceived constraints’ are not just the outcome of previous experiences. They may exist without any prior experience of the use of social media and may be constructed simply as a result of users’ interactions with other people and their social contexts.

8.2.3.1 Grounding the relationships within the literature

This section has highlighted and discussed the relationships between the constructs of the theme *Social Media Constraints* and has shown how the relationships are grounded in empirical findings. Table 8.3 provides an overview of the significance of the presented relationships and shows how they are grounded in the existing literature.

Table 8.3 Overview of the relationships between the constructs of the social media-constraints theme and their significance

Relationship	Significance	Support from literature
Perceived Constraints ↓ <i>Create presumptions</i> Experienced Constraints	<ul style="list-style-type: none"> • Perceptions of the affordances or constraints of technological artifacts can inform whether users are willing to experience them in practice or not 	Treem and Leonardi (2012), Leonardi (2011)
Experienced Constraints ↓ <i>Form new perceptions</i> Perceived Constraints	<ul style="list-style-type: none"> • Perceptions of the affordances or constraints of technological artifacts are linked to the historical (past-experiences) context of the technology 	Bloomfield et al. (2010), Majchrzak et al. (2013)

8.2.4 Building A Theory of Social Media for Resilience of Chronic care management

Figure 8.4 provides a visual representation of the theory of social media in the resilience of chronic care management. By relating the three major constructs of the

study, this theory proposes that *Community Resilience* enacts in a strong and dynamic network of social and technological actors involved in the practice of chronic care management. *Community Resilience* determines the social boundaries and framework within which the materiality of social media is perceived and interpreted as meaningful *affordances* or *constraints* that support or weaken (that is, configure) its performance.

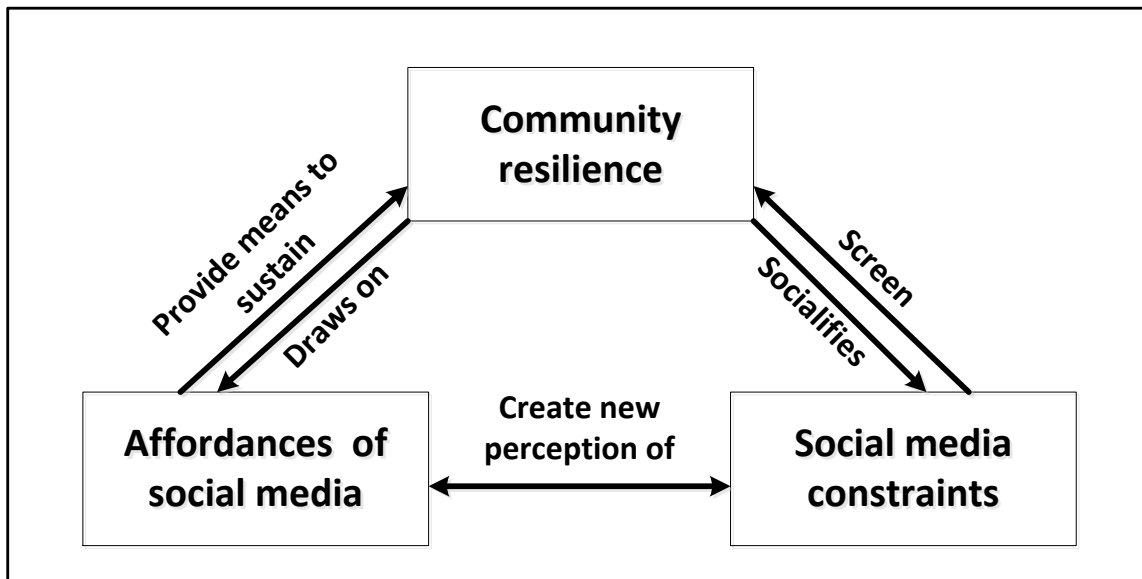


Figure 8.4 Relationships between the emergent themes

This section presents the emergent theory of social media in the resilience of chronic care management community. It goes through the process of theoretical coding and discusses the relationships between the three core themes of *Community Resilience*, *Affordances of Social Media*, and *Social Media Constraints*. An overview of the emergent theory and the relationships between its constructs is presented in Figure 8.4 and discussed in the following sub sections.

8.2.4.1 Relationship between the affordances of social media and Community Resilience

The *Affordances of Social Media* relate to *Community Resilience* by providing a means to *sustain a community's resilience*. As seen in the study, the means by which patients and carers engaged with social media were mainly through supporting the process of chronic care management, either by improving current activities or maintaining the ones that were deemed valuable and useful to the process of chronic care management. So, it appears that social media was mainly used either to facilitate and improve the

existing aspects of *Community Resilience* – such as communication – or to maintain the engagement of patients and carers with some of the aspects, such as social inclusion. As Figures 8.5 and 8.6 show, many instances of this relationship were evident in the findings.

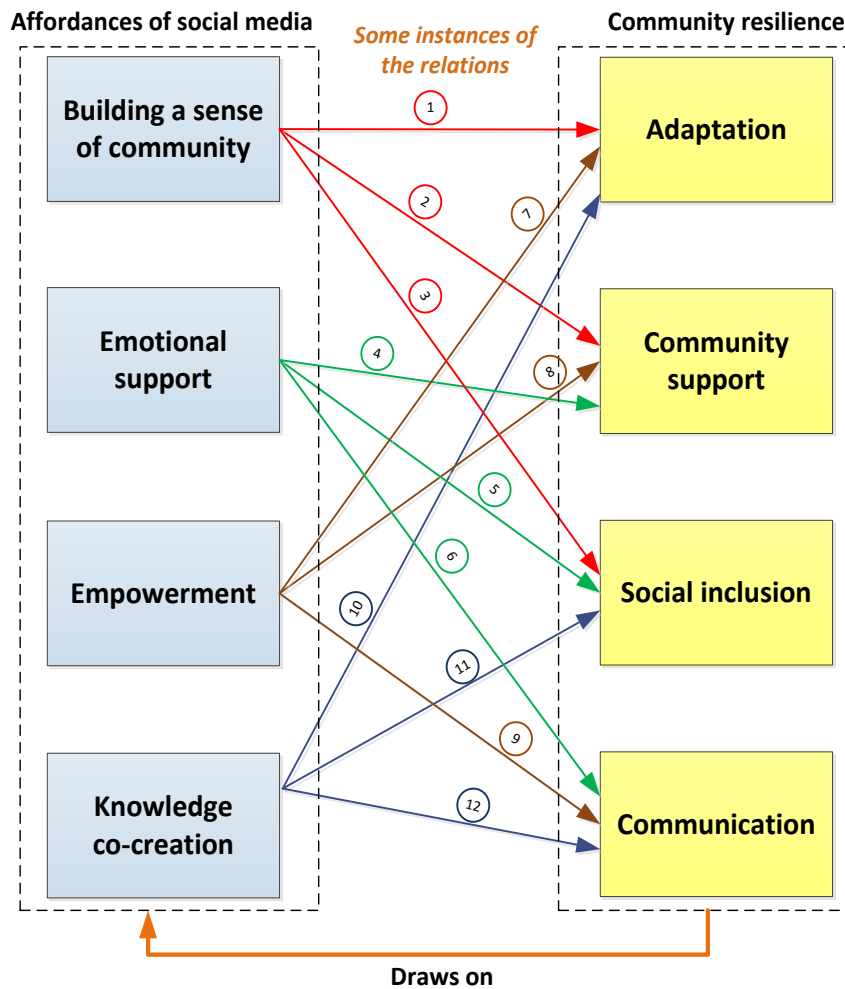


Figure 8.5 Some instances of the ‘maintaining’ relationships between affordances of social media and Community Resilience

For example, many of the participants highlighted how the affordance of *building a sense of community* enabled them to support different aspects of *Community Resilience*, including *adaptation*, *community support*, and *social inclusion* and to *maintain* the functionalities of these aspects.

Relationship No.	Instances
1	Learning (e.g. learning from experiences)
2	Diversity (e.g. individuality)
3	Social support (e.g. social network)
4	Raising hope (e.g. encouragement)
5	Emotional comfort (e.g. equity)
6	Emotional comfort (e.g. sympathy)
7	Gaining control (e.g. effective self-management)
8	Gaining new capabilities (e.g. reaching out)
9	Gaining new capabilities (e.g. overcoming comm barriers)
10	Knowledge sharing (e.g. raising awareness)
11	Knowledge sharing (e.g. sharing experiences)
12	Knowledge sharing (e.g. sharing contents)

Figure 8.6 Examples of the relationship between affordances of social media and Community Resilience

As another instance, many comments in the findings pointed to the characteristic of the *empowerment affordance of social media*, and indicated how these characteristics could maintain different aspects of *Community Resilience*. For example, many patients and carers argued that aspects of *empowerment*, such as *gaining control*, were vital for their adaptation to the process of chronic care management or that *gaining new capabilities*, such as overcoming communication barriers, played a central role in giving them confidence to narrow the social gaps between themselves and other people.

As Figure 8.4 also shows, *Community Resilience* draws on the *Affordances of Social Media* as a set of resources to support *adaptation, communication, social inclusion*, and facilitate *community support*. This relationship was also highlighted by many of the participants. Many of the patients, for example, commented on the important role that social media can play in providing them with platforms for broader *communication and social inclusion*.

Patients and carers highlighted in their comments that because of the implications of their conditions, disabilities, lack of confidence, and their other circumstances for social interaction, they were not able to socialise like other people or to find friends. Consequently, they drew on the capabilities of social media to adapt to their circumstances, communicate, and interact with other people.

The relationships between these two constructs can be summarised in this way: while *Affordances of Social Media* provide a means to *sustain Community Resilience* in chronic care management, *Community Resilience* in turn draws on the support and resources that become available through social media affordances.

8.2.4.2 Relationship between Social Media Constraints and Community Resilience

The relationships between *Community Resilience* and *Social Media Constraints* are mainly in the forms of *screening* and *socialification*⁴.

Despite its immediate meaning, the term '*constraints*' should not be considered and seen as barriers against the use of social media in chronic care management. Instead, the term '*constraints*' in this context, represents a type of knowledge and a level of awareness of the potential risks or harm that the use of social media may cause to the management process.

Having their roots in the patients' and carers' experiences and perceptions, the findings, however, show that such knowledge and awareness did not necessarily deter, preclude, or dissuade the participants from using social media. Rather, as shown in

⁴ The suffix of '*-fication*' in English means '*creating*' something or '*causing*' it to happen. As such, the term '*socialification*' should also get its fair chance. By socialification, I mean technologies such as social media are able to influence the social dynamic of a community. That *causes a shift in understanding* of the role of these technologies from phenomena that are mainly recognised by their material features, to seeing and recognising them as phenomena with social agency.

Figure 8.7, the *constraints* of social media in chronic care management mainly acted as *screening knowledge*, enabling the participants to become aware of the potential risks of social media and wary of the possible undesirable consequences or outcomes of using these technologies.

For example, many of the patients who identified *Social Media Constraints* or commented on their implications were still interested in using social media for a wide range of reasons. However, their awareness of those constraints and their knowledge about the potential implications of social media for the management of their conditions enabled them to be proactive and minimise or eliminate the risks of undesirable impacts of social media on their conditions.

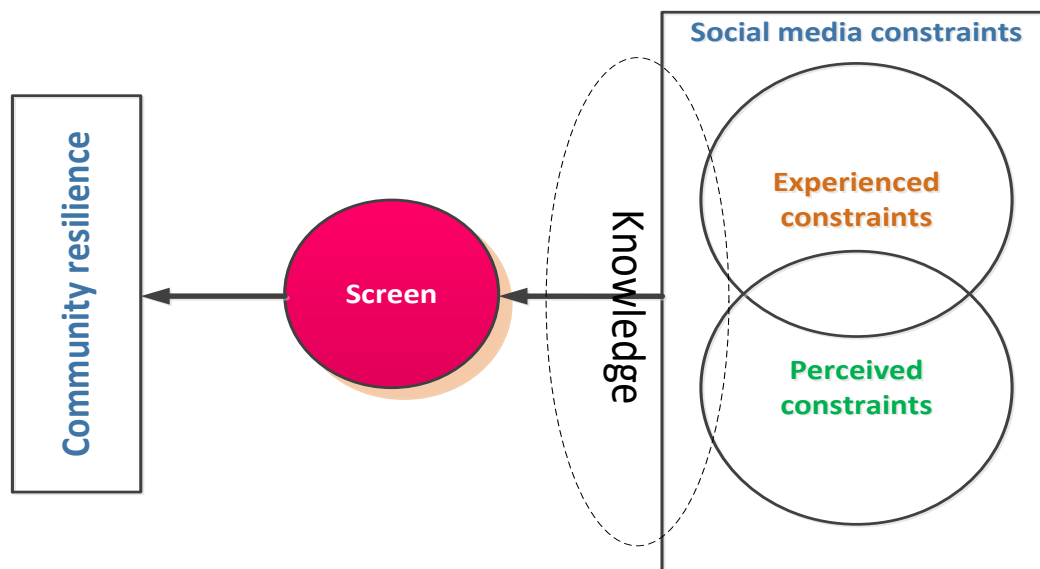


Figure 8.7 The ‘screening’ relationship between affordances of social media and Community Resilience

To be specific, many of the patients and carers described their cross checking of multiple sources of information they obtained from social media. The cross checking was carried out to address their concerns pertaining to the reliability of the information on social media, which in turn could affect their adaptability.

Community Resilience draws on the *constraints of social media*, providing these constraints with a set of boundaries and a social context in which some of the features of social media can be interpreted and understood as potentially harmful or risky to the process of chronic care management. This influence of *Community Resilience* on the features of social media represents a shift, from the understanding of these

technologies by their features, to seeing and recognising them as social phenomena with social agencies. I refer to this relationship as ‘socialification’.

Socialification draws on users’ interpretations of the role of social media for transforming the issues associated with the local features of social media to a set of social phenomenon (constraints) that are linked and bound to different aspects of the social context (for example, policies or culture) within which they occur. Figure 8.8 represents a detailed view of this relationship and shows how the constraints of social media are *socialified* through patients’ and carers’ interpretations of resilience and social media features.

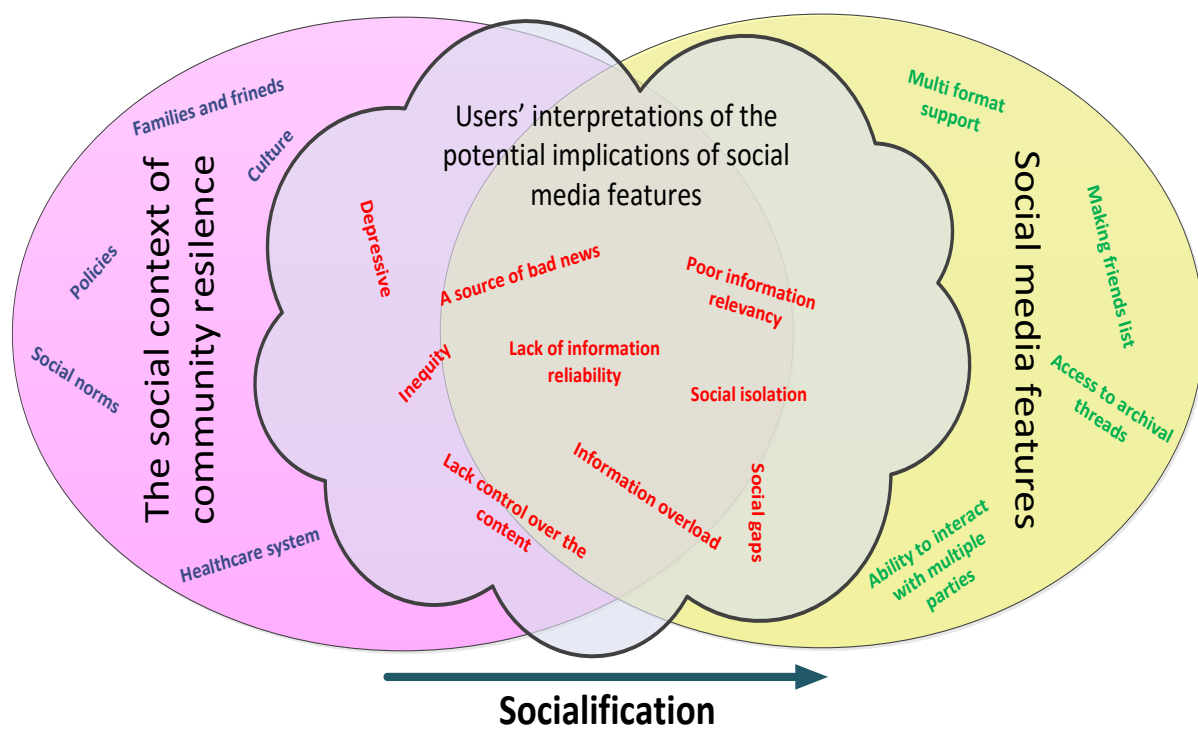


Figure 8.8 The ‘socialification’ relationship between Community Resilience and affordances of social media

For example, the participants commented on some of the features of social media, such as multiple-format support and how reading, listening, and watching other people’s stories and comparing them with their own personal and social circumstances could make them depressed or worried. As another instance, many of the participants commented on how providing feedback or suggestions on other patients’ conditions and health could create some cultural or privacy issues and concerns.

In short, *Social Media Constraints* are not seen as limitations of these technologies or barriers against them. Rather, they are seen as a form of *awareness and knowledge* that protects and *screens Community Resilience* from the potential harm and issues of social media use in chronic care management. On the other hand, *Community Resilience* draws on *Social Media Constraints* by *socialifying* them through patients and carers' interpretations of *Community Resilience* and the potential harms of social media.

8.2.4.3 Relationship between Social Media Constraints and affordances of social media

The relationship between *Affordances of Social Media* and *Social Media Constraints* is seen as a reflexive and dynamic relationship. Based on this view, each theme is constantly regenerated by the other but in a different form and state. Using a more precise term, they are reincarnated by each other.

An affordance of an artifact is known as people's perception of how the artifact (for example, technological artifacts) can assist them to do things or enable them to achieve certain goals (Gibson, 1979). These perceptions are based on an individual's practical and cognitive engagement with social media that can lead to better understanding of the capabilities, limitations, and implications of these technologies.

This new cognition and understanding of social media can lead to the exploration, not only of new potential capabilities, but also of new perceptions of the potential risks and harm of these technologies to the resilience of chronic care management. As a result, the *Affordances of Social Media* can tease out new constraints of these technologies.





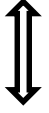
Similar relationships can be seen between *Social Media Constraints* and affordances. The more patients and carers engage with *Social Media Constraints* in practice, the better and clearer they understand how these technologies can support them and the potential capabilities of these technologies. As such, their practical and cognitive engagement with *Social Media Constraints* can create new perceptions about the capabilities of these technologies in supporting the process of chronic care management and its resilience. As a result, the constraints of social media can reveal new affordances of these technologies.

However, the relationships between the affordances and constraints of social media in chronic care management cannot be clearly understood if they are considered independent of the role that the resilience of this process plays in the formation of patients' and carers' perceptions of social media. In other words, while the perceptions' of the perceptions of users are formed through their practical and cognitive engagements with social media, these engagements are tightly bound to the social context within which social media is practised and understood. As a consequence, because user perception is at the centre of the relationships between *Affordances of Social Media* and constraints, these relationships are therefore not only reflexive, they are also formed and influenced by the characteristics of their social context (for example, adaptation or community support).

8.2.4.4 Grounding the relationships within the literature

This section has highlighted and discussed the relationships between the constructs of the emergent theory of social media and has showed how they are grounded in empirical findings. Table 8.4 provides an overview of the significance of the presented relationships and shows how they are grounded in the existing literature.

Table 8.4 Overview of the relationship between the constructs of the theory of social media and the resilience of chronic care management, and their significance

Relationship	Significance	Support from literature
Community Resilience  <i>Socialifies</i> Social Media Constraints	<ul style="list-style-type: none"> Constraints of technology are not only technological phenomena but when people see them as social and technological phenomena that are interpreted within a specific social context 	Bloomfield et al. (2010), Mingers and Willcocks (2014)
Community Resilience  <i>Draws on</i> Affordances of Social Media	<ul style="list-style-type: none"> Social media expands and strengthens social ties by supporting communication, and information sharing. Social media bridges geographical barriers 	Ellison et al. (2014), Hampton et al. (2011)
Social media Constraints  <i>Screen</i> Community Resilience	<ul style="list-style-type: none"> Knowledge of the things that cannot be done or accomplished by technology informs the potential harm and risks 	Hutchby (2001), Majchrzak and Markus (2013)
Affordances of Social Media  <i>Provides means to sustain</i> Community Resilience	<ul style="list-style-type: none"> Multiple factors are important for the longevity and development of Community Resilience including the sense of belonging to community, community knowledge, members' decision capacities (empowered members), and members' support (emotional and resources) 	Chenoweth and Stehlik (2001), Callaghan and Colton (2008), Walker and Salt (2006)
Affordances of Social Media  <i>Create new perception of</i> Social media Constraints	<ul style="list-style-type: none"> People's perception of the affordances and constraints of technology is a recursive process that is influenced by the dynamic social contexts within which the technologies are observed and perceived 	Bloomfield et al. (2010), Vaast and Kaganer (2013)

8.3 Scaling-up the Theory

As Urquhart (2013) advises, it is important to scale up the level of the emergent theory as it enables broadening of its scope and generalisability. The direction of the emergent theory suggests that the role of social media in chronic care management is influenced by both the social context of the management process and the technological features of social media. As such, the perspective of sociomaterial affordances (Majchrzak & Markus, 2013) offers a unique and promising theoretical lens for the understanding and scaling up of the emergent theory.

This perspective provides a comprehensive and synthesised view of technology as complex, dynamic, and a multidimensional concept in the management and IS literature. Further, it provides a more accurate and dynamic theoretical view that lends itself to new pervasive technologies that traditional theories are weak in explaining properly (Orlikowski & Scott, 2008). As Scott and Orlikowski (2014) posit, given the current evidence of unprecedented shifts in social practices linked to pervasive and fluid technologies such as social media, it is more germane to develop ways of thinking that allow us to understand the reality of these technological advancements as dynamic, multiple, and entangled.

The notion of sociomaterial affordances of technology provides a unique and novel way of understanding the role of social media in the resilience of chronic care management. As Scott and Orlikowski (2014) propose, this perspective would neither overplay technology's effects nor underplay its pliability, and it would neither black-box the dynamics and entailments of technology nor diminish its workings and effects in the world. Rather, the banner of sociomateriality allows a fundamental shift of focus from technology as a discrete influence on humans, to thinking of how actions and relationships are materially constituted in practice.

Gibson (1979) – a behavioural psychologist - introduced the concept of affordance for the first time. According to Gibson (1979, p127), the term affordance refers to the possibilities for action that an environment provides:

The affordances of the environment are what it offers the animal, what it provides or furnishes, either for good or ill. The verb to afford is found in the dictionary, but the noun affordance is not. I have made it up. I mean by it something that refers to both the environment and the animal in a way that no existing term does. It implies the complementarity of the animal and the environment.

Gibson (1979) argues that an artifact – either physical or virtual – has multiple affordances; however, the affordances only become relevant when an observer perceives them as possibilities for action. The concept of affordance was later adopted by Hutchby (2001) as the third wave of conceptualising the relationship between humans and technology. According to Bloomfield et al. (2010), this view offered strong

promises in bridging the gap between the undersocialised view of the human-technology relationship (that is, the deterministic view) and its oversocialised understanding (that is, the constructivist view).

Based on Hutchby's (2001) view, the concept of affordance is a relational concept that links its perceived functionalities to its material presence in the world. In other words, Hutchby (2001) believes that affordances of an artifact exist independently of whether or not they are perceived by people; however, an artifact's affordances become manifest when they are used in practice. This means the materiality of an artifact is independent of its social context but the interpretations of its possible actions are socially bounded.

Barad (2003), and later Orlikowski and Scott (2008), shed light on this relational ontology by introducing and discussing the notion of sociomateriality. Barad (2003) argues that neither humans nor technology have any inherent properties as their agencies are entangled and impossible to separate from each other. As Orlikowski (2010) argues, humans and technology are sociomaterial phenomena and their agencies saturate each other; however, the empirical characteristics emerge as these agencies perform and enact in practice. The emergent nature of such characteristics (either human or technology), according to Barad (2003), is a result of human and technology's agencies constant configuration and reconfiguration of each other.

Practice and relationships are at the heart of sociomateriality. According to Scott and Orlikowski (2014), human and technological attributes do not derive from something inherent or inside a substance, but instead they depend on how, when, and where they are related to each other. According to Barad (2003), reality is the entanglement of matter and meaning produced in practice within specific phenomena. Therefore, practice is like a container where the relationships between human and material agencies can enact. As Scott and Orlikowski (2014) propound:

Instead of seeking a priori relationships among self-contained entities, we regard relations as existing in and through enactment. They are located in action and performed in practice. We take practice to mean recurrent, situated activities informed by shared meanings (p.878).

As such, the affordances of a technological artifact are the enactments of its discursivity and materialisation in certain ways that make specific distinctions, boundaries, and properties of phenomena determinate in practice. Barad (2003) refers to such determination of boundaries and specifications as agential cuts that locally resolve the inherent ontological indeterminacy of the world (p. 815). The affordances of social media are therefore sociomaterial phenomena that manifest as they perform in practice. As Hutchby (2001) shows, these affordances are linked to the material agency of technology, which informs the human's interpretations of those affordances and constraints. In other words, based on their goals, social contexts, and their observations, people can have multiple interpretations of the affordances of an artifact; however, the material aspects of the artifact act as a framework that puts limits on the possible interpretations of the possible actions that could – or could not – be made by that artifact.

Bloomfield et al. (2010) recognise the affordances of technological artifacts as processes rather than end-states. As such, they contend that affordances of technological artifacts should not be seen as a set of properties possessed by artifacts, waiting to be activated by human agents. Also, the effectivities or action capabilities of human agents should not be viewed as given. Rather they argue that the affordances emerge as situated, and indeed ongoing, accomplishments. To Bloomfield et al. (2010), the affordances of technological artifacts are interfered with and modulated by the co-presence of other social actors and other artifacts.

As such, they adopt the term 'cascades of affordances' to describe why affordances of an object or artifact should not be attributed to an individual's encountering of an object. Instead, they argue that it is important to see affordances as specific action possibilities that emerge out of the ever-changing relationships between people, between artifacts, and between people and artifacts.

Table 8.5 presents a framework for using the 'sociomaterial affordance' as a theoretical lens for understanding and explaining the emergent theory. The last column provides some instances of each construct from the empirical study.

Table 8.5 A theoretical framework for understanding the emergent theory through the lens of sociomateriality

Construct	Meaning	Empirical instance
Human (social) agency	Human's ability to form and realise goals as they work is not determined by the technologies they employ.	Patients decided whether they wanted to use social media or not
Material (technology) agency	The capacity for material to enact absent sustained human intervention.	Multiple formats supported by social media
Entanglement	Human and material agencies become interlocked. Reality is the entanglement of matter and meaning produced in practice within specific phenomena.	For example, communication is both a technological feature of social media and a social aspect
Relational ontology	Relations are more fundamental than entities and there are no a priori relationships among self-contained entities; rather relations exist in and through enactments. As such, human and material agencies can be understood in relation to each other and not separately.	Constraints of social media such as 'lack of computer literacy' is only understandable in relation to their material features such as their interfaces
Configuration	Materiality configures reality in practice. Human and material agencies constantly configure each other's relationships and perform reality in practice. Each new configuration enacts as a new set of empirical properties and boundaries.	Materiality of social media can create new understanding of their affordances and when they are experienced in practice they can lead to new understandings of the materiality of social media and consequently new perceptions of their affordances
Enactment	The interrelations between human and material agencies produce the empirical phenomena known as 'technological', or 'social' features.	Social media has some social aspects, such as friendship and social support, and some technological aspects such as ability to send public and private messages
Practice	Recurrent, situated activities are informed by shared meanings where relationships are performed. Materiality does not mediate or support pre-existing practices, rather the material enactment of all practices provide them with the capacities to produce outcomes.	Communication practices through social media
Affordance/ Constraints	People's perceptions of what an artifact can or cannot do based on the materiality of the artifact and the social context of the action possibilities.	Social media affords patient empowerment and at the same time places constraints on emotional support
Cascade of Affordances/ Constraints	Action possibilities of an artifact need to be considered as a whole and in relation to the affordances of other related artifacts and related people's goals.	Affordances of social media are linked to each other; for example, emotional support and empowerment draw on each other

8.3.1 The Emerged Theory as a Sociomaterial Phenomenon

The sociomaterial perspective suggests that ‘practice’ is a proper starting point to understand the dynamic reconfiguration of sociomaterial phenomena as they are performed. Therefore, the process of chronic care management can be seen as a series of material-discursive practices (Barad, 2003), such as communication, peer support, information sharing, and evaluation. As the notion of material-discursivity suggests, these practices are constituted by both meanings and materialities, simultaneously and inseparably (Barad, 2007).

These practices make it possible for the social agency of human actors (for example, patients and carers) to become related to the material agency of technology (for example, social media). As Barad (2007) suggests, without these relations, neither human attributes nor technological characteristics exist. Rather, specific discursivity and materialisation enact phenomena in certain ways, making specific distinctions, boundaries, and properties of phenomena determinate in practice. Therefore, what is explored in this study, as the affordances or constraints of social media in chronic care management, are the outcomes of the relationship between the agency of patients (or carers) and social media and the way they enact in practice.

Therefore, using Barad’s (2003) idea of agential realism, the explored themes in the study are not seen as given entities or static states. Instead, they are understood as ongoing accomplishments that are enacted in different ways in specific material-discursive practices over specific periods and locations. The following sections present the explored themes through this theoretical lens.

8.3.1.1 Affordances of social media

The explored affordances are neither properties of social media as technological artifacts, nor the attributes of the quality of patients and carers in using these technologies. Rather they are perceived by the patients and carers as the action possibilities afforded by social media. These perceptions are linked to the material aspects of social media and the social and historical context within which they are perceived. These perceptions are sociomaterial phenomena that enact through the specific practices of chronic care management.

These specific practices are informed by particular management goals and are configured by the materiality of the social media, determining the boundaries, properties, and distinctive aspects of the phenomenon. For example, as patients and carers engage in supporting practices over online forums, the relationships between their social context (for example, language, culture, values, and disease type) and the material features of social media (for example, presentations, format, and accessibilities,) configure each other in a way that the outcome performs as a sociomaterial sense of emotional support.

That said, other configurations of material-discursive practices of chronic care management can perform as different affordances of social media. As such, the affordances of social media do not play the role of mediating or supporting some pre-existing practices, such as communication or peer support. Rather, the materialities of these technologies constitute all the practices of chronic care management and furnish them with the capacities to produce outcomes (Introna, 2013).

The explored affordances of social media do not enact as separate and individual outcomes, otherwise the concept would imply that the enacted affordances become self-contained entities with fixed properties (Barad, 2003). Rather, these affordances are inseparable from each other as the possibilities of action cannot be the result of a single affordance, but they should be seen as a cascade of affordances (Bloomfield et al., 2010) that altogether point to specific outcomes in practice.

8.3.1.2 Social Media Constraints

As Scott and Orlikowski (2014) point out, practices are open and ongoing and they perform in the world in their historical reconfiguration. Therefore, they always have the potential to perform something different. The particular and stable meaning of a phenomenon enacts through a specific material-discursive practice. Such a meaning is a local resolution to the inherent indeterminacy of the world (Barad, 2007). As such, phenomena that perform as affordances of an artifact in specific practices may be reconfigured in a way that enacts as constraints through similar practices.

The identified constraints are sociomaterial phenomena that emerged as the users perceived or engaged with social media through practices. Through these practices the relationships between patients' and carers' goals, intentions, and social context and the material aspects of social media (such as the complexity of interfaces and methods

of encryption) were enacted in a way that they emerged as constraints for achieving a specific goal. For example, the constraint of emotional distress performed as a reality when the patients and carers engaged in practices of interacting with other patients and carers in the online forums.

From the sociomaterial view, feelings of emotional distress enact through a specific configuration of the relationships between the social objectives of the management process (for example, a sense of tranquillity) and the material features of social media (for example, exposure to undesirable contents). Such a configuration is contingent and, within a specific practice, can perform a different reality that produces particular distinctions, boundaries, and properties. Therefore, it can enact as another constraint.

Similar to affordances, constraints of social media do not enact as separate and individual outcomes. Rather, they are inseparable from each other as the barriers of actions cannot be the result of a single constraint. They should be seen as a cascade of constraints (Bloomfield et al., 2010) that altogether point to specific outcomes in practice.

8.3.1.3 Community Resilience

The reality of *Community Resilience* performs through different material-discursive practices. Similar to other components of the emerged theory, the dimensions of *Community Resilience* are not self-contained entities, but they are sociomaterial phenomena that enact as specific boundaries and qualities in particular practices. As such, the attributes of *Community Resilience* (for example, adaptation) are configured by the materiality of the technological artifacts in certain ways that include some things and exclude others in practice (Barad, 2003).

For example, ‘community awareness’ performs as a reality when members of a community engage in practices such as information sharing and community learning. The direction of those practices are informed by people’s goals and levels of engagement and are configured by the materiality of the technologies (for example, social media) that makes the practices possible. As such, the sociomaterial phenomenon of *Community Resilience* enacts and emerges out of constantly changing and developing relationships between people, between objects, and between people and objects (Bloomfield, Latham, & Vurdubakis, 2010).

Therefore, *Community Resilience* is not an independent and determinate reality. Rather, based on the sociomaterial perspective it is a contingent and dynamic reality that performs as a collective accomplishment through practice.

Overall, *Community Resilience* (in chronic care management) enacts in a strong and dynamic network of social and technological actors that are entangled in practice. The dimensions of *Community Resilience* enact in the contextual practice of chronic care management as the actors engage with social media to achieve certain management goals. Also, the properties of social media, either as affordances or constraints, emerge as the situated actors in particular social contexts define meanings of those properties with respect to specific management objectives. Therefore, the properties of both social media and *Community Resilience* enact within a specific social context. However, the boundaries and nature of such enactments are formed and determined by the materiality of social media. The material agency of these technologies informs users' interpretations of the affordances and constraints of social media, and the extent to which the management objectives and goals are achievable by these technologies.

8.4 Chapter Summary

The main purpose of this chapter was to theorise major findings of this study. By adopting the process of theoretical coding (as explained in Chapter 3), I theorised findings of this study at two levels of category and theme.

At the category level, relationships between selective codes in each theme were explored. Also, instances of relationships were presented as evidence to support and ground the explored relationships in empirical data. The main purpose of theorisation at the category level was to gain a theoretical understanding of constituents of each theme and their relationships.

Theorisation of the findings at the theme level provided a high-level theoretical explanation of the role of social media in community resilience and highlighted the relationships between the major constructs of this study. The level of abstraction at this level of theorisation enabled me to gain a theoretical understanding of the research questions as well as an analytical direction toward their answers.

In this chapter, I highlighted that the emerged theories - at both category and theme levels - are contextual as they are grounded in the context of chronic care management.

Therefore, by explaining the emerged theories through the lens of sociomateriality, I also showed how the emerged concepts and their relationships can be scaled up to a higher level of abstraction. This process enabled me to show how the high-level emerged theory can be used to explain a wider range of social phenomena beyond its initial context.

Overall, the presented discussions in this chapter completes the cycle of coding in this grounded theory study. It integrates discussions presented in the last four chapters into a final theory. It shows how the integration of existing constructs (i.e. theme 2) and empirical data (i.e. theme 1 and theme 3) can depict a clear theoretical image of the role of social media in community resilience.

9 CONCLUSION

9.1 Introduction

The aim of this chapter is to bring to the fore the significance of this study and its contributions. By providing an overview of the findings in Section 9.2, this chapter lays the groundwork for discussion of and answers to the research questions. In Section 9.3, I present my answer to the primary research question. This is followed in Section 9.4 and Section 9.5 by a discussion of the theoretical contributions and practical implications of the study. Finally, before the chapter concludes with suggestions for further research in Section 9.7 and some final thoughts in Section 9.8, the study's challenges, limitations, and rigour are outlined in Section 9.6 along with a critical reflection of the research process.

9.2 Summary of the Findings

The purpose of this study was to explore and investigate the role of social media in Community Resilience. In particular, the study aimed at understanding how social media can support the resilience of a community of patients and their caregivers that emerge around the process of . To achieve this goal, the study employed an embedded and holistic case-study design, where an adapted approach to grounded theory informed the collection and data analysis of qualitative data.

Over an extensive period of data collection and analysis, and engagement with multiple participants from three key informant groups – that is, patients, carers, and practitioners - this study explored some major aspects of the research questions. The findings were grouped under three core themes of *Community Resilience*, *Affordances of Social Media*, and *Social Media Constraints* that were evident across different data sets and were corroborated by multiple data sources.

These core themes are highly interrelated and their entangled natures lend themselves to a theory that presents a balanced view on material and social aspects of *Community Resilience* and *social media*, namely, *sociomateriality*. These three themes have been

the basis for answering the research questions that this study sought to address. As such, the following section provides answers to the primary and secondary research questions as they were presented in Chapter 1.

9.3 Answers to the Research Question

In Chapter 1, I explained that the overarching research problem that prompted this study was the lack of scholarly knowledge in understanding the role of social media in Community Resilience. Shaped by this research problem, this study focused on the communities that form around the process of as many aspects of this process (as I explained in Chapter 2) resonate with the concept of Community Resilience. Discussions presented in this section provide the answer to this primary research question, which in turn provides a basis for a reflection on the broader research problem. The primary research question is:

What Is the Role of Social Media in The Resilience of Communities?

The two foremost and core dimensions of resilience in chronic care management communities are adaptation and social inclusion. Adaptation takes place at both individual and community levels. At the individual level, adaptation is mainly concerned with the psychological aspects of the chronic care management process, such as mental abilities of coping with the implications of disease and maintaining a positive outlook and spirit. At the community level, adaptation is at the intersection between the individual's mental and psychological needs and a community's responses to them. Adaptation at this level is mainly concerned with community awareness, and co-learning between community and the patients and carers.

Social inclusion constitutes a wide array of interconnected social activities, from friendship, to fairness, and to social voice. It contributes to the resilience of chronic care management communities by underlining the areas of the social life in which patients and carers aim to participate and interact with other members of their communities. This dimension of Community Resilience is unique in the way it functions as both the prerequisite and the outcome of the other dimensions of resilience.

My investigation revealed that social media plays positive and supporting roles in the resilience of chronic care management communities by supporting the adaptation and

social inclusion of patients and carers. The four major aspects of such support are patients' and carers' empowerment, their access to emotional support, facilitation of learning and knowledge co-creation among patient and carers, and the creation of a sense of community among them.

My investigation also questioned the assumption that technology can always support and help patients with chronic conditions and their carers. Instead, social media can pose considerable challenges to the resilience of chronic care management communities. In this study, I show that social media does not always play a supporting role, but that it may sometimes create obstacles and barriers to the management process, or be perceived as a source of concern because of its potential harm. As a result, social media can adversely influence the ability of patients and carers to adapt to the management process and can play negative roles in their social inclusion.

By focusing on the role of social media in the resilience of chronic care management communities, I was able to observe how these technologies are bound up with human activities in ways that seem to be inseparable in practice. What I learnt is that the ways patients and carers use social media can change their perceptions about their conditions, and also influence how they understand and approach the management process.

Social media has contradictory consequences for the resilience of chronic care management communities. On the one hand, the use of social media facilitates Community Resilience by supporting individuals' adaptation and social inclusion. On the other hand, by posing social and technological challenges and creating uncertainties, the use of social media dampens the effectiveness of the resilience of chronic care management communities.

As such, attempts to use social media to shape patients' and carers' experiences of the resilience of chronic care management communities have paradoxical effects: both supporting and harming the process at the same time. These dynamics highlight how engaging in social media can enable patients and carers to achieve better and desirable outcomes from their communities, while also reducing their willingness to communicate with others by diverting their focus to potential adverse consequences of using these technologies. The answer to the primary research question provides the

basis to reflect on the broader research problem through the adopted theoretical lens, sociomaterial affordance. This is discussed in the following section.

What is the Role of Social Media in Community Resilience?

To expand, analytically, the scope and application of the constructed substantive theory to a broader context, I adopt the high-level theory of sociomaterial affordance (as explained in Section 8.3) as my theoretical lens.

This lens puts emphasis on the inseparability of the technological features of social media and their social aspects. The sociomaterial-affordance perspective also allows me to base my understandings on the participants' perceptions about the potential of social media. The implication is that this perspective emancipates the scope of the emerged substantive theory from being framed and packaged within a set of pre-defined concepts and constructs that attempt to establish superiority of either technology or social aspects over the other. In other words, the sociomaterial-affordance perspective enables an understanding of social media - as an IS artifact - that is not solely based on intended features or emerging characteristics, but instead is based on the artifact's affordances within community.

Looking through this lens, social media enacts in a way so that it is perceived and experienced by members of a community as technologies that afford supporting and useful roles in the resilience of a community. These roles and affordances, however, are not permanent and fixed but can change as members of the community learn more about themselves and the capabilities of social media. As such, a dynamic relationship exists between the roles (sometime contrary) that social media can play in a community, which are not only attributed to the functionalities of these technologies (for example, communication), but are also linked to the social and emergent characteristics of the community (for example, culture).

As such, the constructed theory of social media for Community Resilience suggests that social media involves not only technological artifacts, but is also linked to social aspects of the community and its existence. Together, the material aspect of social media and the social context of a community construct the everyday experiences of living within the community for its members. At the same time, these experiences

identify how social media can support the resilience of the community or prevent Community Resilience from being achieved.

9.4 Theoretical Contribution

I argue that this study makes theoretical contributions in three major ways. First, the study enriches and extends the preliminary conceptual model, grounded in the existing literature, to a theoretical model that is grounded and supported by empirical evidence. Second, it enriches and extends the existing literature in areas such as building a sense of community and Social Media Constraints. Third, the study provides a new theoretical understanding of the role of social media in relation to Community Resilience.

Reflection on the Preliminary Conceptual Model

This study, to a great extent, confirms the preliminary conceptual model. The major constructs of the model that are derived from the literature are largely consistent with the findings of this study. However, as discussed in Chapter 8, the findings of this study extend and modify the preliminary conceptual model in different areas. An overview of the modified conceptual model is presented in Figure 9.1. This modified theoretical model is consistent with the theories discussed in Chapter 8; however, it presents an integrated and a higher-level view of the theories.

This study enriches the conceptual model in the areas of community capital and individual capacity. It underlines that emotional support is an inseparable aspect of Community Resilience. The study also indicates that the capacities and resources associated with emotional support should exist at both the community and individual level. This notion is supported by the compelling evidence related to Theme 2 (Community Resilience) and Theme 3 (Social Media Constraints) as they pay heed to the significance of emotional support in the resilience of chronic care management communities both at the individual and community level.

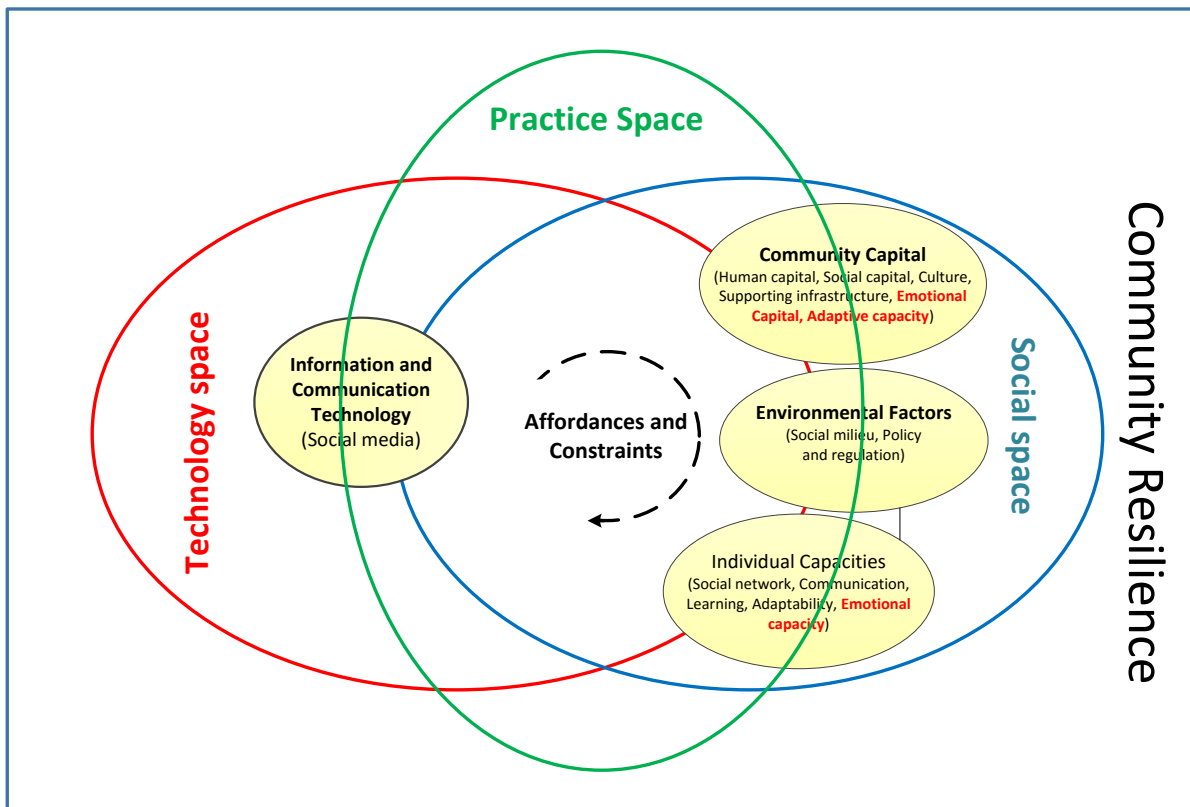


Figure 9.1 Modified and extended conceptual model

This study also extends the conceptual model in the areas of community capital and individual capacity. It strongly suggests that alongside individuals, communities also have to possess adaptive capacities and capabilities. As is evident in Theme 2 (Community Resilience), adaptation of a resilient community occurs at the individual level (for example, endurance) as well as community level (for example, community awareness).

One important implication of the emergence of Theme 1 (Affordances of Social Media) and Theme 3 (Social Media Constraints) for the preliminary conceptual model is a new interpretation of the relationship between the social and technological spaces. The findings reveal that while both social and technological spaces represent different aspects of Community Resilience, the impact of their relationship can be better understood through the lens of *practice*. In other words, a third space that I call the ‘*practice space*’ (term adapted from Orlikowski and Scott, 2008) also exists. In this new space, the social and technological spaces relate to each other in practice and they enact as the affordances and constraints of social media. The enactment of such affordances and constraints are linked to people’s perceptions and their experiences

of both the social environment and technology as they engage with social media in practice.

Enrichment of the Concept of Community Resilience

This study also makes theoretical contributions by enriching the existing understanding and theories in many ways, as highlighted in Chapter 7. Concepts of emotional comfort and building a sense of community extend our understanding of the role of social media in chronic care management communities. The concept of emotional comfort provides a new theoretical insight into the implications of social media for patients' and carers' day-to-day experience of chronic care management activities. It also provides a new and better understanding of the patients' and carers' motivations for using social media and how their motivations play out in the resilience of their management communities.

Further, this study provides a synthesised and holistic view of the concept of adaptation and provides a new theoretical understanding of this process at both the individual and community levels. Also, I show how Social Media Constraints contribute to a new understanding of these technologies that is not based on the technologies' particularities, but instead is based on people's behaviours and perceptions as they form the meanings of those particularities in practice.

This study also enriches our knowledge of community engagement and shows how the use of social media in chronic care management can influence the fit between people's expectations and real community benefits. Further, by unpacking the concepts of community and Community Resilience in chronic care management and exploring their dimensions, this study enriches our knowledge and understanding regarding the concept of community and provides a new insight into the meaning of Community Resilience in chronic care management communities.

Table 9.5 provides a brief overview of the areas of the literature that are enriched or expanded by the findings of this study.

Table 9.1 Overview of the literature areas enriched by the findings of this study

Key findings	Relevant areas of the literature	Major areas of contributions (Expansions/enrichments)
Sense of community	Online community engagement, Social support inclusion	<ul style="list-style-type: none"> • Sense of community and social participation are linked to both social and technological features of the online community • The characteristics of community in chronic care management
Emotional support	Emotional aspects of chronic care management	<ul style="list-style-type: none"> • Emotional comfort is an affordance of social media • Emotional comfort is linked to the affordance of visibility • Mobilisation of emotional resources is driven by community collaboration rather than reaction to crisis
Adaptation levels	Chronic care management adaptation, Environmental community adaptation	<ul style="list-style-type: none"> • Adaptation exists at the individual and community levels and these two are interrelated • Community awareness and community learning are major constituents of adaptation in chronic care management
Nature of the constraints	Technology barriers and adaptation, Nature of technology affordance	<ul style="list-style-type: none"> • Constraints are either perceived or experienced and these two categories are linked through practice • Both categories are influenced by the features of social media in specific social contexts

Theory of Social Media for Community Resilience

The major theoretical contribution of this study is the theorisation of the role of social media in relation to the resilience of chronic care management communities. At the substantive level, I develop a theoretical understanding of the relationship between the features of social media and social aspects of chronic care management communities. At the abstract level, I zoom out from a level with detailed concepts and nuanced relationships to a level where I present a wider view of Community Resilience and provide a holistic understanding of the relationships between social media and the resilience of the management communities. Both levels of theorisation in Chapter 8 present new theoretical understandings of social media for Community Resilience.

For two reasons, this is a significant contribution. First, the theory provides a detailed understanding of the relationship between the features of social media and some of

the core aspects of resilience in chronic care management communities. Theorising the findings of this study at the substantive level presents a detailed and fine-grained understanding of how technological artifacts, such as social media, can influence (by either supporting or hindering) the resilience of people and communities involved with the process of chronic care management. This is important, as no such detailed and substantive theory exists within the literature.

Second, the theory not only delineates different aspects and dimensions of the role of social media in chronic care management communities, it also presents a holistic view that underlines and links both affordances and constraints of these technologies to Community Resilience. The presented theory is important, as it does more than see social media as a 'solution' for some of the problems of Community Resilience, or present these technologies only as barriers to be overcome. Instead, the theory presents a balanced and holistic view that highlights the existence of an ongoing and generative dialogue between the affordances and constraints of these technologies. Such a view provides a means to theorise the role of social media in Community Resilience so that (for example) a real and accurate understanding of the Affordances of Social Media is only possible when the constraints of social media are also seen and taken into consideration. As such, the theory of social media for Community Resilience, either at the substantive level of chronic care management communities, or as a sociomaterial phenomenon with a high level of abstraction, provides a unique means of understanding the relationship between these technologies and community. I argue that this is a significant contribution to the body of knowledge, considering the novelty of these technologies and the lack of scholarly knowledge on the way these technologies influence the dynamics of communities.

Framework for presenting theoretical contributions

To highlight the major theoretical contributions of this study I use Walsham's (1995) framework regarding the types of potential contributions available from an interpretive study. According to Walsham (1995), interpretive researchers potentially can make four types of contributions, including:

- **Development of new concepts:** Exploring concepts or constructing new ideas that did not exist before conducting a specific interpretative study.
- **Generation of a new theory:** Constructing a theory that is supported by evidence that is generated through interpretations of empirical data.
- **Drawing of specific implications:** Drawing specific implications for understanding a social phenomenon, drawing specific implications for research, or drawing specific implications for practice.
- **Contribution of rich insight:** Providing a rich and detailed insight of a social phenomenon.

Using this framework, Table 9.6 provides an overview of the contributions of this study.

Table 9.2 Framework for presenting the theoretical contribution of this study (adopted from Walsham, 1995)

Area of contribution	Description	Examples
Development of concepts	<ul style="list-style-type: none"> • Characteristics of community • Emotional comfort • Perceived constraints • Socialification 	<ul style="list-style-type: none"> • Affordance of building a sense of community points to the characteristics of a community in chronic care management • Social media affords emotional comfort to patients and carers by providing multiple communication capabilities and access to different emotional resources • Without engaging with social media, patients and carers avoid or become reluctant to use these technologies as they are unsure how social media may influence the management process • Recognizing features of social media as social phenomena with social agencies
Generation of theory	<ul style="list-style-type: none"> • Theorising findings at the category level for three themes of Affordances of Social Media, Community Resilience, and Social Media Constraints • Theorising findings of the themes and constructing the theory of social media in the resilience of chronic care management 	<ul style="list-style-type: none"> • The use of social media by the patients and carers in the management of arthritis and diabetes are examples • The relationship between affordances and constraints

Area of contribution	Description	Examples
	<ul style="list-style-type: none"> Scaling up the theory of 'social media in Community Resilience' by interpreting it through the theoretical lens of sociomateriality 	<ul style="list-style-type: none"> Community Resilience enacts in a strong and dynamic network of social and technological actors involved in the practice of chronic care management. Community Resilience determines the social boundaries and framework within which the materiality of social media is perceived and interpreted as meaningful affordances or constraints that support or weaken (that is, configure) its performance
<p>Specific implications</p>	<ul style="list-style-type: none"> In designing or using technology to support patient communities, it is important to know that the properties of technology are not predefined and they emerge as people use and interpret them. However, people's interpretations are bound to the material features of technology 	<ul style="list-style-type: none"> Examples are the patients and carers who regularly use social media for management activities while other patients and carers involved with the management of similar chronic disease types are hesitant and sceptical of using social media
<p>Rich insight</p>	<ul style="list-style-type: none"> This study provides more than just a number of themes and their relationships. It provides insight into a wide range of topics, including the experiences of living with chronic care management in a time of pervasive and more personalised and more open communications. It provides a deeper view of the affordances and constraints of social media in the chronic care management process and highlights the uncertainties of patients and carers around them. It also provides insight into the contrary nature of social media and the need for more thoughtful approaches in using these technologies in practice 	<ul style="list-style-type: none"> Patients and carers who use social media have different experiences of the process of chronic care management compared to the ones who only rely on more traditional sources of information and support

9.5 Implications for Practice

The findings of this study have implications for the practice of the management of chronic disease by providing deeper insights into the role that social media can play to support the management process. As discussed in Chapter 2, the practice of chronic care management is highly influenced by Wagner's Chronic Care Model (Wagner, 1998) and the Kaiser Permanente Model of chronic care management (Silvestre et al., 2009). ICT is at the heart of these models as both recognise the influences of ICT on the outcome of the management process.

Table 9.3 Summary of the implications of this study for practice

Affected area	The findings of this study have implications for:
Healthcare System	<ul style="list-style-type: none"> • Healthcare service providers by providing better insights into patient communities and the possible toolkits to help patients build their own communities • Healthcare researchers, industry regulators, and policy-makers who may need to understand the benefits, challenges, and concerns of using social media in chronic care management and need to know how patients can use these technologies to build their own communities
Patients	<ul style="list-style-type: none"> • Patients who may use social media as part of a self-management process by helping them to better understand the affordances and challenges of these technologies • Patients who may use these technologies to build their own communities
Carers	<ul style="list-style-type: none"> • Caregivers who use social media to support patients, as they need to better understand the capabilities afforded by these technologies and their limitations in supporting patients. • Caregivers who may use these technologies to build their own communities
Practitioners	<ul style="list-style-type: none"> • Health professionals by creating recommendations about how to deal with patients who are sourcing information from the Internet which may or may not be reliable and helpful • Practitioners who use social media to support patients and who need to understand the benefits and potential legal and privacy implications of these new technologies for supporting patients
Community	<ul style="list-style-type: none"> • Policy-makers who aim to support communities to become resilient to social challenges and the ways social media can help diverse members of communities to communicate, share their resources and bridge barriers by finding common ground

As such, this study has implications for these models and therefore, for the ways chronic care management is practised. Based on these models, the major areas of activities that are influenced by ICT are the healthcare system, patients' self-management activities, caregivers' activities, professionals' activities, and the community's relationships with patients. The potential implications of the findings for these areas of the management process are presented in Table 9.7.

9.6 Research limitations and reflections on the research process

Considering the unique characteristics of social media, I found it important to reflect on the quality and legitimacy of the evidence obtained from this study as social media settings were used as major sources of data. That said, the purpose of this section is to bring to the fore the rigour of this study. In so doing, I reflect on the methodological aspects of this study and particularly focus on the implications of using social media as a major source of data for this research. Such a reflection helps me to identify the strengths and limitations of this study. Here, I briefly present a thematic framework (Figure 9.2) derived from a numbers of publications in IS.

Detailed information about the sources and nature of this framework is presented in Appendix 3. I use this framework as a lens to assess and critically reflect on this qualitative study in which social media was one of the major sources of data. For a meaningful reflection, my aim is to answer three major questions:

- 1) Did social media - as a research setting - allow me to stay faithful to the principles of interpretative studies?
- 2) What were the implications of social media for the research design?
- 3) Was the use of social media - as a research setting – compatible with the principles of grounded theory?

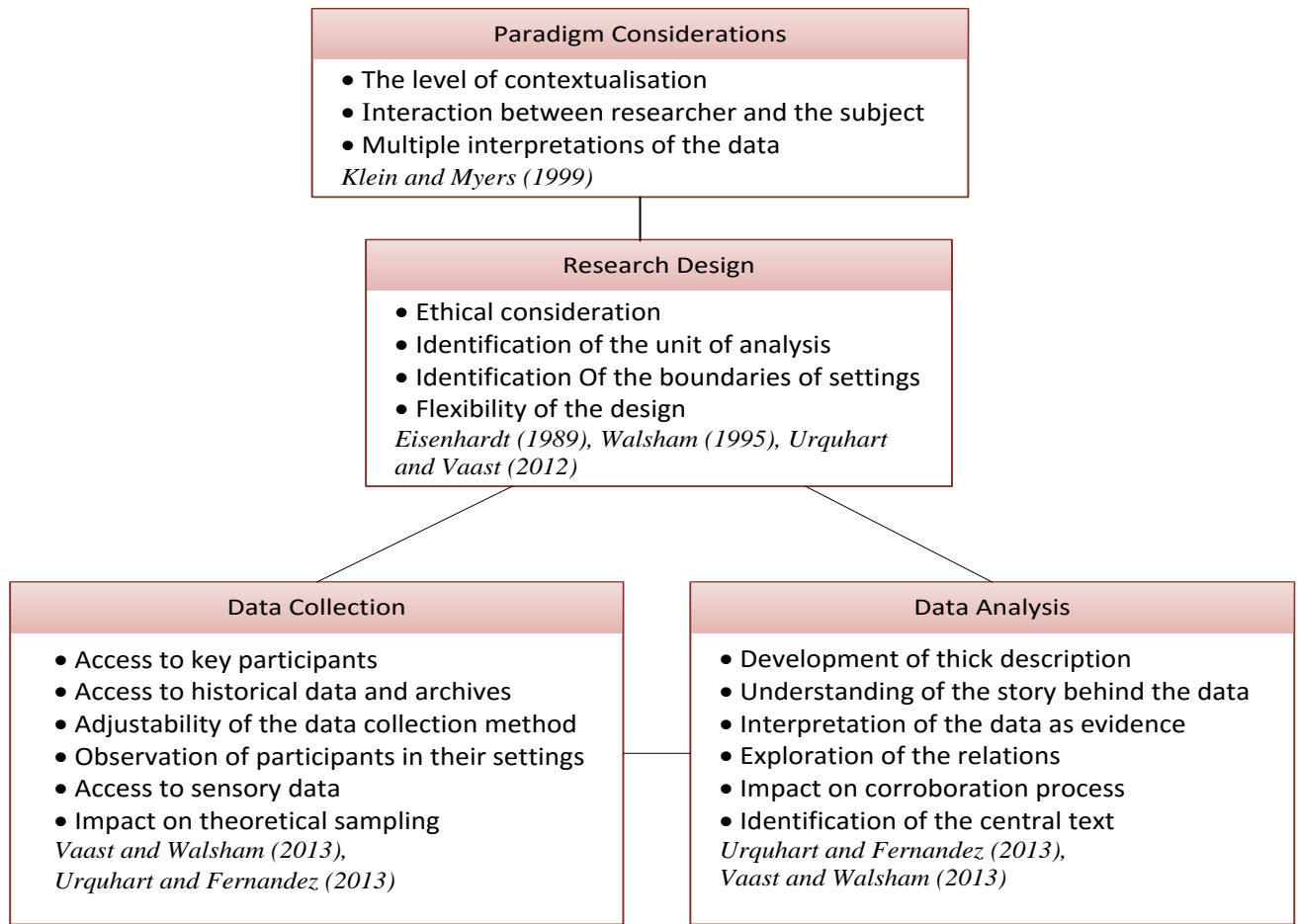


Figure 9.2 An overview of the reflective framework

9.6.1 Key Areas of Reflection

In applying the framework, the focus was not only on participants, but also on the process of gaining evidence and the means by which these processes led to the next step of study. For example, in examining whether social media as a research setting could help to contextualise the empirical study, it was also in the interest of reflection to know to what extent such contextualisation was possible and whether it assisted in producing a ‘thick description’ of the study. A similar process was carried out to examine each question against the relevant criteria within each category of the framework. This helped me both to understand the impact of social media as a research setting in each category, and also to delineate its influence on other aspects of the empirical study. The key areas of the reflections are briefly discussed in the following sections. Table 9.10 provides a summary of the reflections.

Table 9.4 Summary of reflections

Research aspect	Reflection question	Reflection
Paradigm	To what extent can we stay faithful to the principles of qualitative research?	It is difficult to stay faithful to the principles of the interpretative paradigm if I only rely on social media settings.
• Level of contextualisation	How easy is to understand the social and historical background of the research setting?	It is nearly impossible to position the subject of study in its social and historical context due to the virtuality of the settings and high level of intricacy of the data.
• Interaction between researcher and the subject	How easy is it to construct meanings through interaction with the subjects?	It is difficult to establish a trust relationship. Interactions were limited to the features of communication tools. Real-time interactions were not often possible.
• Multiple interpretations of the data	Is it possible to explore and understand alternative interpretations and meanings?	In many instances it was easy to have multiple narratives or stories of the same sequence of events under study and it was easy to compare and contrast them.
Research Design	How can the design be influenced by social media settings?	Social media settings give flexibility to the research design; however, they pose serious challenges to issues related to research ethics and case boundaries.
• Ethical consideration	How can the subjects be protected from potential harm?	Protecting participants' privacy had implications on the thickness of the description of settings. Privacy expectations were not clear. Posts (data) were editable and modifiable by the members.
• Identification of the unit of analysis	What are the characteristics of the unit of analysis?	Digital text was identified as the unit of analysis. More contextual characteristics of digital text were explored.
• Identification of the boundaries of settings	What are the boundaries of the research settings?	Identifying the boundaries was difficult as many of the social interactions in the virtual environment were permeable to real-world settings.
• Flexibility of the design	To what extent can the research design be adjusted or modified?	Social media enabled a more accurate research design as each forum or platform could be treated as a separate case.
Data Collection	What are the implications of social media for the quality of the data?	Any aspect beyond digital text is difficult to incorporate into the data-collection activities
• Access to key participants	Who are the key participants and how can they be identified?	It was extremely difficult to confidently pinpoint experts and key informants in the settings.

Research aspect	Reflection question	Reflection
• Access to historical data and archives	How possible is it to access past events and their history?	In most instances it was easy to access historical data and archives; however, it was not easy to understand their context.
• Adjustability of data collection method	Can the level or type of data collection be shifted or changed?	Flexibility of data collection was extremely useful in providing different types of data as needed.
• Observation of participants in their settings	Can subjects' behaviours be observed and understood?	It was nearly impossible to observe people beyond the way they were represented by their posts or profiles.
• Access to sensory data	To what extent is sensory data accessible?	It was nearly impossible to access sensory data.
• Impact on theoretical sampling	Can data be selected for theoretical saturation?	Characteristics of digital text had positive impacts on theoretical sampling; however, the depth of the sampling was limited due to the limited interactions between researchers and subjects.
Data analysis	What are the implications of social media settings for the quality of the evidence?	Social media settings offer unique opportunities for analysis of data, and especially for theoretical saturation; however, the interpretation of data is not easy due to unclear context of data
• Understanding the story behind data	To what extent is it possible to clearly understand the story that the data tells?	It was not easy to form a clear line of story for the whole data set as there was much irrelevant information or the available information was convoluted.
• Development of thick description	How deeply and detailed can the research process and the context of the settings be described?	Due to high level of virtuality of the environment it was very difficult to understand and describe what was happening in relation to the complex relationships between the social media players.
• Interpretation of data to evidence	How easy is it to interpret data and build evidence linked to the research context?	It was difficult to interpret data only in reference to what was happening in the social media.
• Exploration of the relationships	How easy is it to explore the relationships between the constructs?	Finding instances of relationships within the data was not difficult as theoretical categories were already constructed.
• Impact on corroboration decisions	Is it possible to improve the strengths of the evidence in relation to other sources?	Social media settings provided opportunities to fill in theoretical categories and strengthen the collected data from other sources including other online platforms.
• Identification of the central text	What are the central texts in social media settings?	The central texts were informed by research questions and theoretical orientations. It was easy to use tools such as NVivo to identify the central texts and conduct the analysis around them.

9.6.2 Research Limitations and Challenges

Based on the outcome of the reflections, in the following section, I discuss and highlight some of the major challenges and limitations of this study.

9.6.2.1 Reflection on the Research Paradigm

Contextualisation: As Klein and Myers (1999) point out, contextualisation requires that the subject matter be set in its social and historical context so that the intended audience can see how the current situation under investigation emerged. They argue that contextualisation is the necessary element of an interpretative study as researchers should observe and acknowledge the constantly changing patterns of the relationships between people and technology.

In this empirical study, my experience showed that it is nearly impossible to position the subject of study in its social and historical context based on the data collected from social media. Two aspects of my social media research settings were the major contributors to this challenge. First, the settings exhibited a high level of virtuality. Second, many of the messages and chat threads were highly intricate and the research settings would not afford the ways to unwrap and demystify those digital texts.

Interaction with participants: Klein and Myers (1999) argue that participants are interpreters and as they interact with researchers, they alter their horizons by the appropriation of concepts used by researchers. According to Walsham (1995), when researchers do not interact with participants at a sufficient level and only rely on historical secondary data, the impact of their view on the participants' perspective will be weakened and therefore, it is unlikely that alternative viewpoints will be formed.

My experience showed that a number of challenges exist when it comes to the interaction between researchers and participants in social media research settings. First, due to the virtuality of the environment, it is difficult to establish trust relationships between researchers and participants. I particularly found that in healthcare contexts, patients and carers felt uncomfortable in sharing their feelings and talking about their conditions with people they had never met in real life, and who were not considered part of "the club". Second, social media settings used in the study offered limited tools for interaction, and most interactions were in the form of plain

texts. Third, on most occasions, I only had access to historical data and archives as many of the online interactions were taking place in different time zones.

9.6.2.2 Reflection on the Research Design

Research setting: In the empirical healthcare-IS study, I noticed that the traditional concept of ‘research setting’, in a qualitative study that uses social media as a setting, is a grey area. Identifying the boundaries within which participants could be observed was a difficult task as many of the social interactions in the virtual environment were permeable to real-world settings. In addition, it was difficult to gain a deep understanding of the influence of social, cultural, and political behaviour of participants on the construction of their meanings, as it was nearly impossible to gather sensory data that would have helped me to have a more accurate and clearer interpretation of events and interactions in a social media setting.

Ethical issues: Vaast and Walsham (2013) and Urquhart and Vaast (2012) argue that IS-grounded theorists who use social media as a research setting for their data collection face some ethical dilemmas. The dilemma is that IS researchers enjoy the opportunity of widely accessing online interactions but, at the same time, this opportunity can blur the perception of what information is private, and what is public.

The major ethical challenges in the study were twofold. First, it was necessary for me to make sure that the privacy and anonymity of participants were protected. In doing so, not only the identity of participants had to be protected through conventional methods, it was also necessary to protect their identity through the anonymity of the setting itself. These requirements would make the report on my research less traceable to the readers as it was not possible to create a ‘thick description’ of the research context, and as Walsham (1995) propounds, the report was facing the risk of ending up with reporting ‘soft’ human issues.

The second ethical challenge encountered was the lack of means to determine whether the participants expected privacy from their exchanges and the level of privacy they might expect. For example, on many occasions after data from a participant was collected, the participant decided to withdraw from the research setting and related posts disappeared. Considering the sensitivity of health-related data, the withdrawal raised the issue of whether material already collected from that participant could be used in the study or not.

9.6.2.3 Reflection on Data Collection and Analysis

Theoretical sampling: As Urquhart and Vaast (2012) and Urquhart and Fernandez (2013) show, social media as a research setting offers new and unique opportunities as well as new challenges for theoretical sampling. I can corroborate this contention, and add that the employment of grounded theory as a method of sampling and analysis increases both the opportunities and the challenges.

To clearly understand the nature of the data collected from social media, it is necessary to know the characteristics of such data. Urquhart and Vaast (2012) argue that in social media as a research setting, the unit of analysis used by researchers is actually 'digital text'. According to Urquhart and Vaast (2012), digital text has nine major characteristics: it is contained on a web, co-produced, ephemeral, embeds other discourses, contains images, contains video, lacks context, and is linguistically innovative.

Concurring with Urquhart and Vaast (2012), I argue that in the context of healthcare, digital text exhibits two additional characteristics: 'emotions' and 'high degree of intricacy'. The empirical study of patients' and carers' online forums and social-networking sites showed that most of the posts and interactions could be seen as digital texts loaded with 'emotion'.

The empirical study also showed that most of the messages posted on the online forums were multi-faceted with a high level of detail. This characteristic was more or less identifiable in almost all of the digital texts I collected. In some of those texts, the participants were talking about two, three, or more things that were distinguishable but some of the convoluted posts were hard to understand.

These characteristics of the digital text in healthcare social media settings can be attributed to a number of reasons, including the level of uncertainty related to disease (Wagner et al., 2001), medical jargon that is not easily understood by lay people (Schouten, Meeuwesen, Tromp, & Harmsen, 2007), and the impact of technology on the ways people engage themselves in virtual social environments (Orlikowski, 2010).

I believe that the 'emotional' characteristic of digital texts provided an interesting opportunity for theoretical sampling. It was noticed that the emotional aspect of digital texts represents extreme situations and, as Eisenhardt (1989) contends, makes the

phenomenon “transparently observable”. As such, many of digital texts used in the study provided me with a fruitful way of filling theoretical categories.

However, as Glaser and Strauss (1967) point out, theoretical sampling is about giving depth to the understanding of constructs and investigating the underlying assumptions that led to the creation and interpretation of those constructs. The study shows that the high level of virtuality of the research setting, as well as the lack of the possibility of effective interaction with participants, placed limits on the ability to deepen the investigation of participants’ perspectives.

9.6.3 Reflection on the Study

My reflections were made with three major questions in mind. The first question was ‘Did social media - as a research setting - allow me to stay faithful to the principles of interpretative studies?’ In answering this question, I argue that in studying healthcare-related problems through social media settings I could still conform to the principles of an interpretative study. However, I faced two challenges related to ‘contextualisation’ and ‘interaction with participants’. This is consistent with Urquhart and Vaast (2012) as they highlight the issue of contextualisation in social media research settings by stressing that the lack of context in social media research settings is an important issue that social media researchers have to address. They argue that, without context, social media researchers can still infer patterns but they need to search for ‘central texts’ to set meaningful boundaries around their subject.

The second question to answer was ‘What were the implications of social media for the research design?’ To answer this question, I argue that the most significant issue I noticed was concerned with research ethics. Stewart and Williams (2005) discuss this issue in detail, as they argue that the speed, ease and low cost of social media settings make them appealing options for researchers. However, they believe that the ethical complexity of virtual settings requires that old ethical guidelines and procedures be revisited. They argue that the time has come to reframe our ethical guidelines according to the style of data collection and to also anticipate the integration of those guidelines into the design stage of the research.

The third question was ‘Was the use of social media - as a research setting – compatible with the principles of grounded theory used in this study?’ In answering this question

the focus was turned on theoretical sampling as one of the tenets of qualitative research (Myers, 1997) and on grounded theory (Glaser & Strauss, 1967). I argue that social media as a research setting posed both opportunities and challenges for me in this study. The opportunities were more related to the nature of the data that I could collect from healthcare social media as my research settings were loaded with emotional messages. In using grounded theory, Da Cunha and Orlikowski (2008) study of online forums also showed how emotionally rich messages helped them to explore further dimensions of their qualitative study. They explained how a single message posted on the forum helped them to deepen their understanding of their phenomenon, and provided them with threads for further investigations.

However, I would also contend that solely relying on data from a social media setting could not necessarily help this study to fill its theoretical categories as in most cases an in-depth understanding of a theoretical category could be gained through interviews with participants. This is consistent with O'Mahony's and Ferraro's (2007) study of the governance of socially collective actions in organisations. They initially used online forums as sources of data to develop their theoretical model; however, because the data was not rich enough to provide them with depth about their constructs, they conducted 48 interviews to reach theoretical saturation.

In summary, the reflections presented in this section show that social media as a research setting is a relatively new environment for collecting evidence for IS studies. The presented reflections here also highlight that with the prevalence of social media in people's daily life and the attraction of these electronic social contexts for researchers, qualitative IS researchers need to revisit and refine some of the matters that are at the core of IS qualitative-research activities. Revising and reflecting on areas such as the 'research setting' and 'research ethics' helps to maintain the rigour and reliability of such studies.

9.7 Future Research

This study has built a number of inductive theories that are grounded in empirical data. For future research, these theories and the veracity of the relationships between their constructs need to be empirically tested and validated.

As mentioned in Section 3.6.3, much of the collected data in this study is based on different sources of ‘texts’, either as transcribed interviews or digital texts obtained from social media. While a considerable portion of available data in social media is in audio and visual formats, this kind of data was barely used in this study. Indeed, few studies employ this kind of data in order to obtain a better insight of the role of social media in social contexts. Therefore, future research about chronic care management or Community Resilience could focus on these rich sources of data to gain a deeper and better insight into the role of social media in healthcare contexts.

The focus of this study was on the use of social media in chronic care management. While this focus provided interesting insight into the role of these technologies, future research could focus on the groups of participants who use social media, and compare the outcome of the management process with those who do not use these technologies.

The notion of sociomateriality that is used in this study is highly influenced by the work of Orlikowski and Scott (2008) and Barad (2003). In this view, a complex and entangled relationship exists between the two different worlds of social and material. Recently, Mingers and Willcocks (2014) developed a semiotic framework to argue for the existence of a third world – the personal world – that exists in a complex relationship with both the social and the material worlds. This new philosophical view suggests a new line of research that could provide new insight into the roles and influences of social media in communities, and the process of chronic care management.

9.8 Concluding Thoughts

The purpose of this study has been to provide insights into the issues surrounding the adoption and use of new ICT in healthcare-related activities, and to provide a theory of social media in chronic care management.

The founding argument of this study was that the use of ICT can positively influence healthcare activities and support patients with chronic illness and their families. Nevertheless, this study did not take this argument at face value; rather, by framing it as the problem of Community Resilience, the argument has been investigated through a multifaceted approach.

In doing so, theories of social capital, human capital, social media, and sociomaterial practices were considered in conjunction with Community Resilience. These theories were coupled with views of patients, carers, and other industry and non-industry participants to provide a deeper insight and meaningful explanation of the role of social media in the process of chronic care management.

The implications of a study of this nature for understanding the dynamic and contradictory role of social media must be considered in context. As said before, the community involved in the process of chronic care management consists of a vast number of actors who converge in their goals and diverge in their activities and experiences.

This study was conducted with a broad view of communities across different contexts. The findings and the core messages of this study could be beneficial to those groups and communities who face challenges, adversity, and turbulence. As Vinson, Rawsthorne, and Cooper (2007) tell us, despite the fact that many people within communities live a wealthy and healthy life, many communities around the world still suffer from the challenges of poverty or disease, or are disadvantaged by their geographical borders. In Vinson, Rawsthorne, and Cooper's (2007) language, disadvantage has a postcode in many countries. But some communities still strive to be resilient even as they remain caught in a spiral of low school attainment, high unemployment, and poor health. As such, I would argue that the findings of this study could be beneficial to policy-makers and the members of disadvantaged communities by helping them to take positive steps towards greater resilience.

As a final word, this research has created more new questions than it has answered. My intention since embracing this exploratory research has been to offer an account and a plausible interpretation of the role of social media in the resilience of community. Yet I believe that the findings of this research and its endeavour to help people are meaningless unless the findings can make a positive impact on people's real life. For me, the research journey has obviously not come to an end as this research is just a means to an end and not an end in itself. Nonetheless, this study sheds light on some of our unknowns and paves the way for further research that can improve and ameliorate our understanding of the role of technology in the resilience of community.

BIBLIOGRAPHY

- Abramowitz, S. A. (2005). The poor have become rich, and the rich have become poor: collective trauma in the Guinean Languette. *Social Science & Medicine*, 61(10), 2106-2118.
- Adams, D., Nelson, R., & Todd, P. (1992). Perceived usefulness, ease of use, and usage of information technology: a replication. *MIS Quarterly*, 227-247.
- Adams, S. (2010). Blog-based applications and health information: two case studies that illustrate important questions for Consumer Health Informatics (CHI) research. *International Journal of Medical Informatics*, 79(6), e89-e96.
- Adger, N. (2000). Social and ecological resilience: are they related? *Progress in Human Geography*, 24(3), 347-364.
- Adger, N. (2006). Vulnerability. *Global environmental change*(16), 268-281.
- Adger, N. (2010). Social capital, collective action, and adaptation to climate change *Der klimawandel* (pp. 327-345): Springer.
- Agarwal, R., Gao, G., DesRoches, C., & Jha, A. (2010). Research commentary—The digital transformation of healthcare: Current status and the road ahead. *Information Systems Research*, 21(4), 796-809.
- Akhgar, B., Fortune, D., Hayes, R. E., Guerra, B., & Manso, M. (2013). *Social media in crisis events: Open networks and collaboration supporting disaster response and recovery*. Paper presented at the Technologies for Homeland Security (HST), 2013 IEEE International Conference on.
- Al-Gahtani, S. S., Hubona, G. S., & Wang, J. (2007). Information technology (IT) in Saudi Arabia: Culture and the acceptance and use of IT. *Information & Management*, 44(8), 681-691.
- Alavi, M., Kayworth, T., & Leidner, D. (2006). An empirical examination of the influence of organizational culture on knowledge management practices. *Journal of Management Information Systems*, 22(3), 191-224.
- Aldrich, D. P. (2012). *Building resilience: Social capital in post-disaster recovery*: University of Chicago Press.
- Ali, S. R., & Fahmy, S. (2013). Gatekeeping and citizen journalism: The use of social media during the recent uprisings in Iran, Egypt, and Libya. *Media, War & Conflict*, 6(1), 55-69. doi:10.1177/1750635212469906
- Anderies, J., Walker, B. H., & Kinzig, A. (2006). Fifteen weddings and a funeral: case studies and resilience-based management. *Ecology and Society*, 11(1), 21.
- Angood, P., Dingman, J., Foley, M. E., Ford, D., Martins, B., O'Regan, P., . . . Denham, C. R. (2010). Patient and Family Involvement in Contemporary Health Care. *Journal of Patient Safety*, 6(1), 38-42. Retrieved from [http://journals.lww.com/journalpatientsafety/Fulltext/2010/03000/Patient and Family Involvement in Contemporary.6.aspx](http://journals.lww.com/journalpatientsafety/Fulltext/2010/03000/Patient_and_Family_Involvement_in_Contemporary.6.aspx)
- Arazy, O., Nov, O., Patterson, R., & Yeo, L. (2011). Information quality in Wikipedia: The effects of group composition and task conflict. *Journal of Management Information Systems*, 27(4), 71-98.
- Argyris, C. (1977). Double loop learning in organizations. *Harvard Business Review*, September/October, 115-125.
- Arora, P. (2012). Typology of Web 2.0 spheres: Understanding the cultural dimensions of social media spaces. *Current Sociology*, 60(5), 599-618.
- Arthritis Victoria. (2010). Arthritis Victoria Constitution. Retrieved from <http://www.arthritisvic.org.au/pages.asp?d=5A4C5A717251477C7008060B0E0908>
- Arthritis Victoria. (2011). Stepping out – A guide for young adults with arthritis. Retrieved from <http://www.arthritisvic.org.au/pages.asp?d=5A4C5A717251477C7008060A070905>

- Arthritis Victoria. (2013). 2012 Arthritis Victoria Annual Report. Retrieved from <http://www.arthritisvic.org.au/downloads/AR%202012.pdf>
- Aujoulat, I., Marcolongo, R., Bonadiman, L., & Deccache, A. (2008). Reconsidering patient empowerment in chronic illness: a critique of models of self-efficacy and bodily control. *Social Science & Medicine*, 66(5), 1228-1239.
- Australian Institute of Health and Welfare. (2013). *Australian's Health 2012: The thirteenth biennial health report of the Australian Institute of Health and Welfare*. Retrieved from Canberra: <http://www.aihw.gov.au/WorkArea/DownloadAsset.aspx?id=10737422169>
- Baker, J. R., & Moore, S. M. (2008). Distress, coping, and blogging: comparing new myspace users by their intention to blog. *Cyberpsychol Behav*, 11(1), 81-85. doi:10.1089/cpb.2007.9930
- Bandura, A. (1977). *Social Learning Theory*. Oxford, England: Prentice-Hall.
- Bandura, A. (1978a). The self system in reciprocal determinism. *American Psychologist*, 33(4), 344.
- Bandura, A. (1978b). Social Learning Theory of Aggression. *Journal of Communication*, 28(3), 12-29. doi:10.1111/j.1460-2466.1978.tb01621.x
- Banks, S. C., Knight, E. J., McBurney, L., Blair, D., & Lindenmayer, D. B. (2011). The effects of wildfire on mortality and resources for an arboreal marsupial: resilience to fire events but susceptibility to fire regime change. *PLoS one*, 6(8), e22952.
- Barad, K. (2003). Posthumanist performativity: Toward an understanding of how matter comes to matter. *Signs*, 28(3), 801-831.
- Barad, K. (2007). *Meeting the University Halfway: Quantum Physics and the Entanglement of Matter and Meaning*. Durham, NC: Duke University Press.
- Barak, A., Boniel-Nissim, M., & Suler, J. (2008). Fostering empowerment in online support groups. *Computers in Human Behavior*, 24(5), 1867-1883.
- Barley, S. (1998). What can we learn from the history of technology? *Journal of Engineering and Technology Management*, 15(4), 237-255.
- Barrett, M., Oborn, E., Orlikowski, W., & Yates, J. (2012). Reconfiguring boundary relations: robotic innovations in pharmacy work. *Organization Science*, 23(5), 1448-1466.
- Barro, R. J. (2001). Human capital and growth. *American Economic Review*, 12-17.
- Bartholomé, Y., & Maarse, H. (2007). Empowering the chronically ill? Patient collectives in the new Dutch health insurance system. *Health Policy*, 84(2-3), 162-169. Retrieved from <http://www.sciencedirect.com/science/article/B6V8X-4NNPH2S-3/2/dc7659e81ab32b3231409ec8b3f2b225>
- Bateman, P., Gray, P., & Butler, B. (2011). Research Note-The Impact of Community Commitment on Participation in Online Communities. *Information Systems Research*, 22(4), 841-854.
- Baym, N. (2009). A Call for Grounding in the Face of Blurred Boundaries. *Journal of Computer-Mediated Communication*, 14, 720-723.
- Beer, D. (2008). Researching a confessional society. *International Journal of Market Research*, 50(5), 619-629.
- Begun, J., & Kaissi, A. (2004). Uncertainty in health care environments: myth or reality? *Health Care Management Review*, 29(1), 31-39.
- Ben-Hur, E., Fragman-Sapir, O., Hadas, R., Singer, A., & Kadmon, R. (2012). Functional trade-offs increase species diversity in experimental plant communities. *Ecology letters*, 15(11), 1276-1282.
- Ben-Yakov, M., & Snider, C. (2011). How Facebook saved our day! *Academic Emergency Medicine*, 18(11), 1217-1219.
- Bender, J. L., Jimenez-Marroquin, M.-C., & Jadad, A. R. (2011). Seeking support on facebook: a content analysis of breast cancer groups. *Journal of Medical Internet Research*, 13(1).
- Benhabib, J., & Spiegel, M. M. (1994). The role of human capital in economic development evidence from aggregate cross-country data. *Journal of Monetary economics*, 34(2), 143-173.

- Benoiel, J. (1996). Grounded Theory and Nursing Knowledge. *Qualitative Health Research*, 6(3), 406-428.
- Bercovici, J. (2010). Who Coined 'Social Media'? Web Pioneers Compete for Credit. Retrieved from <http://www.forbes.com/sites/jeffbercovici/2010/12/09/who-coined-social-media-web-pioneers-compete-for-credit/>
- Berger, P., & Luckmann, T. (1967). *The Social Construction of Reality: A Treatise in the Sociology of Knowledge*. New York: Doubleday.
- Berkes, F., & Ross, H. (2013). Community resilience: Toward an integrated approach. *Society & Natural Resources*, 26(1), 5-20.
- Berkhout, F., Hertin, J., & Gann, D. M. (2006). Learning to adapt: organisational adaptation to climate change impacts. *Climatic Change*, 78(1), 135-156.
- Berkman, L. F. (2000). Social support, social networks, social cohesion and health. *Social work in health care*, 31(2), 3-14.
- Berkman, L. F., Leo-Summers, L., & Horwitz, R. I. (1992). Emotional support and survival after myocardial infarction: a prospective, population-based study of the elderly. *Annals of Internal Medicine*, 117(12), 1003-1009.
- Bernard, W., & David, C. B. (2006). Social Ecology of Children's Vulnerability to Environmental Pollutants. *Environmental Health Perspectives*, 114(10), 1479. Retrieved from <http://ezproxy.lib.monash.edu.au/login?url=http://proquest.umi.com/pqdweb?did=1145653291&Fmt=7&clientId=16397&RQT=309&VName=PQD>
- Bertot, J. C., Jaeger, P. T., & Grimes, J. M. (2012). Promoting transparency and accountability through ICTs, social media, and collaborative e-government. *Transforming Government: People, Process and Policy*, 6(1), 78-91.
- Bertot, J. C., Jaeger, P. T., & Hansen, D. (2012). The impact of polices on government social media usage: Issues, challenges, and recommendations. *Government Information Quarterly*, 29(1), 30-40.
- Bessenoff, G. R. (2006). Can the media affect us? Social comparison, self-discrepancy, and the thin ideal. *Psychology of Women Quarterly*, 30(3), 239-251.
- Bhutta, C. B. (2012). Not by the Book Facebook as a Sampling Frame. *Sociological Methods & Research*, 41(1), 57-88.
- Biesecker, B., & Erby, L. (2008). Adaptation to living with a genetic condition or risk: a mini-review. *Clinical genetics*, 74(5), 401-407.
- Birks, D. F., Fernandez, W., Levina, N., & Nasirin, S. (2013). Grounded theory method in information systems research: its nature, diversity and opportunities. *European Journal of Information Systems*, 22(1), 1-8.
- Blanchard, A., & Horan, T. (1998). Virtual communities and social capital. *Social Science Computer Review*, 16(3), 293-307.
- Bloomfield, B. P., Latham, Y., & Vurdubakis, T. (2010). Bodies, Technologies and Action Possibilities: When is an Affordance? *Sociology*, 44(3), 415-433.
- Bodenheimer, T., Wagner, E. H., & Grumbach, K. (2002). Improving primary care for patients with chronic illness: the chronic care model, Part 2. *JAMA*, 288(15), 1909-1914.
- Bolger, N., & Amarel, D. (2007). Effects of social support visibility on adjustment to stress: experimental evidence. *Journal of personality and social psychology*, 92(3), 458.
- Bollman, R. D. (1999). *Human capital and rural development: what are the linkages?* : Agriculture Division, Statistics Canada.
- Bourdieu, P. (1986). The forms of capital. In J. G. Richardson (Ed.), *Handbook of Theory and Research for the Sociology of Education* (pp. 241-258). New York: Greenwood.
- Bourdieu, P. (1998). *Practical Reason: On the Theory of Action*. Stanford, CA: Stanford University Press.
- Bouwman, H., Hooff, B., Wijngaert, L., & Dijk, J. (2005). *Information and Communication Technology in Organizations*. London.
- Boxer, H., & Snyder, S. (2009). Communication Strategies to Promote Self-Management of Chronic Illness: How you communicate with your patients can enhance – or inhibit

- their ability to manage their chronic illnesses. *Family Practice Management*(September/October), 12-16.
- boyd, D. (2010). Social Network Sites as Networked Publics: Affordances, Dynamics, and Implications. In Z. Papacharissi (Ed.), *Networked Self: Identity, Community, and Culture on Social Network Sites* (pp. 39-58).
- boyd, D., & Ellison, N. (2007). Social Network Sites: Definition, History, and Scholarship. *Journal of Computer-Mediated Communication*, 13(1), 210-230. doi:10.1111/j.1083-6101.2007.00393.x
- Breckon, D. J., & Lancaster, R. B. (1998). *Community health education: settings, roles, and skills for the 21st century*: Jones & Bartlett Learning.
- Brock, W. A. (2004). Tipping points, abrupt opinion changes, and punctuated policy change. *UW Madison, Department of Economics*.
- Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. *American Psychologist*(32), 513-531.
- Bronfenbrenner, U., & Evans, G. W. (2000). Developmental science in the 21st century: Emerging questions, theoretical models, research designs and empirical findings. *Social Development*, 9(1), 115-125.
- Brown , J. S., & Duguid, P. (1991). Organizational learning and communities-of-practice: Toward a unified view of working, learning, and innovation. *Organization Science*, 2(1), 40-57.
- Brown, K., & Westaway, E. (2011). Agency, capacity, and resilience to environmental change: lessons from human development, well-being, and disasters. *Annual review of Environment and Resources*, 36, 321-342.
- Brownson, R. C., Eyster, A. A., King, A. C., Shyu, Y.-L., Brown, D. R., & Homan, S. M. (1999). Reliability of information on physical activity and other chronic disease risk factors among US women aged 40 years or older. *American Journal of Epidemiology*, 149(4), 379-391.
- Brunton, S. (2011). Improving medication adherence in chronic disease management. *The Journal of Family Practice*, 60(4 Suppl Improving), S1-8.
- Buikstra, E., Ross, H., King, C. A., Baker, P. G., Hegney, D., McLachlan, K., & Rogers-Clark, C. (2010). The components of resilience—Perceptions of an Australian rural community. *Journal of Community Psychology*, 38(8), 975-991. doi:10.1002/jcop.20409
- Burke, M., Marlow, C., & Lento, T. (2010). *Social network activity and social well-being*. Paper presented at the Proceedings of the SIGCHI Conference on Human Factors in Computing Systems.
- Burleson, B., & Goldsmith, D. (1998). How the Comforting Process Works: Alleviating Emotional Distress through Conversationally Induced Reappraisals. In P. A. Anderson & L. K. Guerrero (Eds.), *Handbook of communication and emotion: Research, theory, applications, and contexts* (pp. 245–280). San Diego, CA: Academic Press.
- Burton, S. H., Tanner, K. W., Giraud-Carrier, C. G., West, J. H., & Barnes, M. D. (2012). " Right Time, Right Place" Health Communication on Twitter: Value and Accuracy of Location Information. *Journal of Medical Internet Research*, 14(6).
- Bury, M. (1991). The sociology of chronic illness: a review of research and prospects. *Sociology of Health & Illness*, 13(4), 451-468.
- Butler, B., Bateman, P., Gray, P., & Diamant, E. (2014). An Attractor-Selection-Attention Theory of Online Community Size and Resilience. *MIS Quarterly*, 38(3), 699-728.
- Calhoun, C. (2007). Community without propinquity revisited: Communications technology and the transformation of the urban public sphere. *Sociological Inquiry*, 68(3), 373-397.
- Callaghan, E. G., & Colton, J. (2008). Building sustainable & resilient communities: a balancing of community capital. *Environment, Development and Sustainability*, 10(6), 931-942.
- Camerini, L., Diviani, N., & Tardini, S. (2010). Health virtual communities: is the Self lost in the Net? *Social Semiotics*, 20(1), 87-102.

- Campbell-Sills, L., Forde, D. R., & Stein, M. B. (2009). Demographic and childhood environmental predictors of resilience in a community sample. *Journal of Psychiatric Research, 43*(12), 1007-1012.
- Campbell, S. W., & Kwak, N. (2010). Mobile communication and social capital: An analysis of geographically differentiated usage patterns. *New Media & Society, 12*(3), 435-451.
- Caplan, S. E., & Turner, J. S. (2007). Bringing theory to research on computer-mediated comforting communication. *Computers in Human Behavior, 23*(2), 985-998.
- Carers Victoria. (2013). 2012 Carers Victoria Annual Report. Retrieved from http://www.carersvictoria.org.au/Assets/Files/CarersVic_AnnualReport-lowres.pdf
- Carpenter, S., & Gunderson, L. (2001). Coping with collapse: ecological and social dynamics in ecosystem management. *BioScience, 51*(6), 451-457.
- Carthey, J., De Leval, M., & Reason, J. (2001). Institutional resilience in healthcare systems. *Quality in Health Care, 10*(1), 29-32.
- Caruso, G. D. (2012). The Problem of Free Will: A Brief Introduction and Outline of Position. In G. D. Caruso (Ed.), *Free Will and Consciousness: A Determinist Account of the Illusion of Free Will* (pp. 1-12). UK: Lexington Books.
- Case, A. D., & Hunter, C. D. (2012). Counterspaces: A unit of analysis for understanding the role of settings in marginalized individuals' adaptive responses to oppression. *American Journal of Community Psychology, 50*(1-2), 257-270.
- Castells, M. (1996). *The information age: economy, society and culture. Vol. 1, The rise of the network society* (Vol. 1): Blackwell Oxford.
- Castells, M. (2004). The network society: A cross-cultural perspective.
- Castleden, M., McKee, M., Murray, V., & Leonardi, G. (2011). Resilience thinking in health protection. *Journal of Public Health, 33*(3), 369-377.
- Castro, F., & Murray, K. (2010). Cultural adaptation and resilience: Controversies, issues, and emerging models. In J. W. Reich, A. J. Zautra, J. Hall, J. W. Reich, A. J. Zautra, & J. Hall (Eds.), *Handbook of Adult Resilience* (pp. 375-403). New York, NY: Guilford Press.
- Cavallo, D. N., Tate, D. F., Ries, A. V., Brown, J. D., DeVellis, R. F., & Ammerman, A. S. (2012). A social media-based physical activity intervention: a randomized controlled trial. *American Journal of Preventive Medicine, 43*(5), 527-532.
- Cavaye, A. (1996). Case study research: a multi-faceted research approach for IS. *Information Systems Journal, 6*(3), 227-242.
- Chandra, S., Srivastava, S. C., & Theng, Y.-L. (2012). Cognitive Absorption and Trust for Workplace Collaboration in Virtual Worlds: An Information Processing Decision Making Perspective. *Journal of the Association for Information Systems, 13*(10).
- Chari, V. V., & Hopenhayn, H. (1991). Vintage human capital, growth, and the diffusion of new technology. *Journal of Political Economy, 114*(2), 1142-1165.
- Charmaz, K. (1990). Discovering chronic illness: using grounded theory. *Social Science & Medicine, 30*(11), 1161-1172.
- Charmaz, K. (1999). Stories of suffering: Subjective tales and research narratives. *Qualitative Health Research, 9*(3), 362-382.
- Charmaz, K. (2002). Stories and silences: Disclosures and self in chronic illness. *Qualitative Inquiry, 8*(3), 302-328.
- Charmaz, K. (2006). *Constructing Grounded Theory: A practical Guide Through Qualitative Analysis*. London: SAGE.
- Charmaz, K. (2011). Grounded Theory Methods in Social Justice Research. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage Handbook of Qualitative Research* (4th ed., pp. 359-380). Thousand Oaks, CA: Sage.
- Chen, C., Garrido, T., Chock, D., Okawa, G., & Liang, L. (2009). The Kaiser Permanente Electronic Health Record: Transforming And Streamlining Modalities Of Care. *Health Affairs, 28*(2), 323-323. Retrieved from <http://ezproxy.lib.monash.edu.au/login?url=http://proquest.umi.com/pqdweb?did=1672025141&Fmt=7&clientId=16397&RQT=309&VName=PQD>

- Chenoweth, L., & Stehlik, D. (2001). Building resilient communities: Social work practice and rural Queensland. *Australian Social Work, 54*(2), 47-54.
- Chiasson, M., Reddy, M., Kaplan, B., & Davidson, E. (2007). Expanding multi-disciplinary approaches to healthcare information technologies: What does information systems offer medical informatics? *International Journal of Medical Informatics, 76*, S89-S97.
- Chiu, C.-M., Hsu, M.-H., & Wang, E. T. (2006). Understanding knowledge sharing in virtual communities: An integration of social capital and social cognitive theories. *Decision Support Systems, 42*(3), 1872-1888.
- Chou, W.-Y. S., Hunt, Y. M., Beckjord, E. B., Moser, R. P., & Hesse, B. W. (2009). Social media use in the United States: implications for health communication. *Journal of Medical Internet Research, 11*(4).
- Chretien, K. C., & Kind, T. (2013). Social Media and Clinical Care Ethical, Professional, and Social Implications. *Circulation, 127*(13), 1413-1421.
- Christodoulou, M. (2011). Networking: the new social revolution in health care. *The lancet oncology, 12*(2), 125.
- Chuang, K. Y., & Yang, C. C. (2014). Informational support exchanges using different computer-mediated communication formats in a social media alcoholism community. *Journal of the Association for Information Science and Technology, 65*(1), 37-52.
- Chung, D. S., & Kim, S. (2008). Blogging activity among cancer patients and their companions: Uses, gratifications, and predictors of outcomes. *Journal of the American Society for Information Science and Technology, 59*(2), 297-306.
- Churchland, P. M. (1981). Eliminative materialism and the propositional attitudes. *The Journal of Philosophy, 78*(2), 67-90.
- Ciccone, A., & Papaioannou, E. (2009). Human capital, the structure of production, and growth. *The Review of Economics and Statistics, 91*(1), 66-82.
- Cocciolo, A., Mineo, C., & Meier, E. (2010). *Using Online Social Networks to Build Healthy Communities: A Design-based Research Investigation*. Paper presented at the World Conference on Educational Multimedia, Hypermedia and Telecommunications.
- Cohen, D., & Soto, M. (2007). Growth and human capital: good data, good results. *Journal of economic growth, 12*(1), 51-76.
- Cohen, P. (1985). *The Symbolic Construction of Community*. Tavistock: Ellis Horwood.
- Coleman, J. (1988). Social capital in the creation of human capital. *American journal of sociology, S95-S120*.
- Coleman, K., Austin, B., Brach, C., & Wagner, E. (2009). Evidence on the Chronic Care Model in the new millennium. *Health Affairs, 28*(1), 75-85.
- Colland, V. T. (1993). Learning to cope with asthma: a behavioural self-management program for children. *Patient Education and Counseling, 22*(3), 141-152.
- Collins, R. L. (1996). For better or worse: The impact of upward social comparison on self-evaluations. *Psychological bulletin, 119*(1), 51.
- Colombo, M. G., & Grilli, L. (2005). Founders' human capital and the growth of new technology-based firms: A competence-based view. *Research policy, 34*(6), 795-816.
- Comfort, L. (2005). Risk, security, and disaster management. *Annual Review of Political Science*(8), 335-356.
- Compas, B. E., Jaser, S. S., Dunn, M. J., & Rodriguez, E. M. (2012). Coping with chronic illness in childhood and adolescence. *Annual review of clinical psychology, 8*, 455.
- Conole, G., De Laat, M., Dillon, T., & Darby, J. (2008). 'Disruptive technologies', 'pedagogical innovation': What's new? Findings from an in-depth study of students' use and perception of technology. *Computers & Education, 50*(2), 511-524.
- Cooper, A., & Kar, P. (2014). A new dawn: The role of social media in diabetes education. *Journal of Diabetes Nursing, 18*(2).
- Corbin, J., & Strauss, A. (1991). A nursing model for chronic illness management based upon the trajectory framework. *Research and Theory for Nursing Practice, 5*(3), 155-174.
- Corbin, J., & Strauss, A. (2008). *Basics of Qualitative Research: Techniques and procedures for developing grounded theory*. Thousand Oaks, CA: Sage.

- Couto, R. A. (1989). *Catastrophe and community empowerment: The group formulations of Aberfan's survivors*: National Emergency Training Center.
- Coutu, D. L. (2002). How resilience works. *Harvard Business Review*, 80(5), 46-56.
- Cox, A. (2005). What are communities of practice? A comparative review of four seminal works. *Journal of Information Science*, 31(6), 527-540.
- Cox, M., Arnold, G., & Tomás, S. V. (2010). A review of design principles for community-based natural resource management. *Ecology and Society*, 15(4), 38.
- Cox, M., & Marshall, G. (2007). Effects of ICT: do we know what we should know? *Education and information technologies*, 12(2), 59-70.
- Creed, W. D., DeJordy, R., & Lok, J. (2010). Being the change: Resolving institutional contradiction through identity work. *Academy of Management Journal*, 53(6), 1336-1364.
- Currell, R., Urquhart, C., Wainwright, P., & Lewis, R. (2000). Telemedicine versus face to face patient care: effects on professional practice and health care outcomes. *Cochrane Database Syst Rev*, 2(2).
- Cutcliffe, J. R., Stevenson, C., Jackson, S., & Smith, P. (2006). A modified grounded theory study of how psychiatric nurses work with suicidal people. *International journal of nursing studies*, 43(7), 791-802.
- Cutter, S. L., Barnes, L., Berry, M., Burton, C., Evans, E., Tate, E., & Webb, J. (2008). A place-based model for understanding community resilience to natural disasters. *Global environmental change*, 18(4), 598-606.
- Da Cunha, J., & Orlikowski, W. (2008). Performing catharsis: The use of online discussion forums in organizational change. *Information and Organization*, 18(2), 132-156.
- Dabbagh, N., & Kitsantas, A. (2012). Personal Learning Environments, social media, and self-regulated learning: A natural formula for connecting formal and informal learning. *The Internet and Higher Education*, 15(1), 3-8.
- Dale, A., & Newman, L. (2010). Social capital: a necessary and sufficient condition for sustainable community development? *Community development journal*, 45(1), 5-21.
- Darke, P., Shanks, G., & Broadbent, M. (1998). Successfully completing case study research: combining rigour, relevance and pragmatism. *Information Systems Journal*, 8(4), 273-289.
- Davenport, T. O. (1999). *Human capital*. San Francisco, CA: Jossey-Bass Inc.
- Davidson-Hunter, I., & Berker, F. (2003). Nature and society through the lens of resilience: toward a human-in-ecosystem perspective. In Fikret Berker, John Colding, & Carl Folke (Eds.), *Navigating Social-Ecological Systems*. UK: Cambridge University Press.
- Davis, K., Schoenbaum, S. C., & Audet, A. (2005). A 2020 Vision of Patient-Centered Primary Care. *Journal of General Internal Medicine*, 20(10), 953-957. Retrieved from <http://dx.doi.org/10.1111/j.1525-1497.2005.0178.x>
- Day, P. (2005). *Sustainable Community Technology: The symbiosis between community technology and community research* (Vol. 1).
- De Raadt, J. D., & De Raadt, V. D. (2005). Where there is no vision the people perish: ethical vision and community sustainability. *Systems Research and Behavioral Science*, 22, 233-247.
- de Ridder, D., Geenen, R., Kuijer, R., & van Middendorp, H. (2008). Psychological adjustment to chronic disease. *The Lancet*, 372(9634), 246-255.
- Deetz, S. (1973). An Understanding of Science and a Hermeneutic Science of Understanding. *Journal of Communication*(23), 139-159.
- Demiroz, F., & Sana Khosa, M. (2011). *Designing Policy and Management Tools for Building Resilient Communities*. Paper presented at the Public Management Research Conference, The Maxwell School of Citizenship and Public Affairs, Syracuse University, NY.
- Dennis, S., Zwar, N., Griffiths, R., Roland, M., Hasan, I., Davies, G., & Harris, M. (2008). Chronic disease management in primary care: from evidence to policy. *Medical Journal of Australia*, 188(8), S53. Retrieved from

- <http://ezproxy.lib.monash.edu.au/login?url=http://proquest.umi.com/pqdweb?did=1468497141&Fmt=7&clientId=16397&RQT=309&VName=PQD>
- Denzin, N. K., & Lincoln, Y. S. (2005). Introduction; The Discipline and Practice of Qualitative Research. In N. K. Denize & Y. S. Lincoln (Eds.), *The SAGE Handbook of Qualitative Research* (2nd ed., pp. 1-32). Thousand Oaks, CA: Sage.
- Denzin, N. K., & Lincoln, Y. S. (2011). Introduction; The Discipline and Practice of Qualitative Research. In Norman K. Denize & Yvonna S. Lincoln (Eds.), *The SAGE Handbook of Qualitative Research* (2nd ed., pp. 1-20). Thousand Oaks, CA: Sage.
- Detsky, A. S. (2011). What patients really want from health care. *JAMA*, 306(22), 2500-2501.
- Dey, I. (1993). Finding a focus. In I. Dey (Ed.), *Qualitative data analysis: A user-friendly guide for social scientists* (pp. 65-77). London: Routledge.
- Doménech, R. (2006). Human capital in growth regressions: how much difference does data quality make? *Journal of the European Economic Association*, 4(1), 1-36.
- Doull, M., O'Connor, A. M., Welch, V., Tugwell, P., & Wells, G. A. (2005). Peer support strategies for improving the health and well-being of individuals with chronic diseases. *The Cochrane Library*.
- Dowsett, S. M., Saul, J. L., Butow, P. N., Dunn, S. M., Boyer, M. J., Findlow, R., & Dunsmore, J. (2000). Communication styles in the cancer consultation: preferences for a patient-centred approach. *Psycho-Oncology*, 9(2), 147-156. doi:10.1002/(sici)1099-1611(200003/04)9:2<147::aid-pon443>3.0.co;2-x
- Dufty, N. (2012). Using social media to build community disaster resilience. *The Australian Journal of Emergency Management*, 27(1), 40-45.
- Dwyer, C., Hiltz, S., & Passerini, K. (2007). Trust and privacy concern within social networking sites: A comparison of Facebook and MySpace. *AMCIS 2007 Proceedings*, 339.
- Dyer, W. G., & Wilkins, A. L. (1991). Better stories, not better constructs, to generate better theory: a rejoinder to Eisenhardt. *Academy of Management Review*, 16(3), 613-619.
- Earls, F., & Carlson, M. (2001). The social ecology of child health and well-being. *Annual Review of Public Health*, 22(1), 143-166.
- Ebi, K. L., & Semenza, J. C. (2008). Community-Based Adaptation to the Health Impacts of Climate Change. *American Journal of Preventive Medicine*, 35(5), 501-507. Retrieved from <http://www.sciencedirect.com/science/article/B6VHT-4TMSJS2-H/2/152eeeece9102ff8e7642e5b2e8115fb>
- Eisenhardt, K. M. (1989). Building Theories From Case Study Research. *Academy of Management. The Academy of Management Review*, 14(4), 532-550. Retrieved from <http://ezproxy.lib.monash.edu.au/login?url=http://proquest.umi.com/pqdweb?did=1414446&Fmt=7&clientId=16397&RQT=309&VName=PQD>
- Eisenhardt, K. M., & Graebner, M. E. (2007). Theory Building From Cases: Opportunities and Challenges. *Academy of Management Journal*, 50(1), 25-32. Retrieved from <http://ezproxy.lib.monash.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=buh&AN=24160888&site=ehost-live&scope=site>
- Ellis, D., Oldridge, R., & Vasconcelos, A. (2004). Community and virtual community. *Annual review of information science and technology*, 38(1), 145-186.
- Ellison, N., Steinfield, C., & Lampe, C. (2006). Spatially bounded online social networks and social capital. *International Communication Association*, 36(1-37).
- Ellison, N., Steinfield, C., & Lampe, C. (2007). The benefits of Facebook "friends:" Social capital and college students' use of online social network sites. *Journal of Computer-Mediated Communication*, 12(4), 1143-1168.
- Ellison, N., Vitak, J., Gray, R., & Lampe, C. (2014). Cultivating social resources on social network sites: Facebook relationship maintenance behaviors and their role in social capital processes. *Journal of Computer-Mediated Communication*, 19(4), 855-870
- Eltantawy, N., & Wiest, J. B. (2011). The Arab Spring| Social Media in the Egyptian Revolution: Reconsidering Resource Mobilization Theory. *International Journal of Communication*, 5, 18.

- Engel, G. L. (1980). The clinical application of the biopsychosocial model. *Am J Psychiatry*, 137(5), 535-544. Retrieved from <http://ajp.psychiatryonline.org/cgi/content/abstract/137/5/535>
- Engeström, Y., Reijo, M., & Raija-Leena, P. (1999). *Perspectives on Activity Theory*: Cambridge University Press.
- Enjolras, B., Steen-Johnsen, K., & Wollebæk, D. (2013). Social media and mobilization to offline demonstrations: Transcending participatory divides? *New Media & Society*, 15(6), 890-908.
- Epstein, R. M., Franks, P., Fiscella, K., Shields, C. G., Meldrum, S. C., Kravitz, R. L., & Duberstein, P. R. (2005). Measuring patient-centered communication in Patient-Physician consultations: Theoretical and practical issues. *Social Science & Medicine*, 61(7), 1516-1528. Retrieved from <http://www.sciencedirect.com/science/article/B6VBF-4FY9MFG-1/2/e7305d95a02de633344df74b40df1b8e>
- Erickson, I. (2010). Geography and community: New forms of interaction among people and places. *American behavioral scientist*.
- Evans, R., Joseph-Williams, N., Edwards, A., Newcombe, R. G., Wright, P., Kinnersley, P., . . . Grol, R. (2010). Supporting informed decision making for prostate specific antigen (PSA) testing on the web: an online randomized controlled trial. *Journal of Medical Internet Research*, 12(3).
- Eysenbach, G. (2008). Medicine 2.0: social networking, collaboration, participation, apomediation, and openness. *Journal of Medical Internet Research*, 10(3).
- Eysenbach, G., Powell, J., Kuss, O., & Sa, E. (2002). Empirical studies assessing the quality of health information for consumers on the World Wide Web. *The Journal of the American Medical Association*, 287(20), 2691-2700.
- Faraj, S., Jarvenpaa, S. L., & Majchrzak, A. (2011). Knowledge collaboration in online communities. *Organization Science*, 22(5), 1224-1239.
- Faugier, J., & Sargeant, M. (1997). Sampling hard to reach populations. *Journal of Advanced Nursing*, 26(4), 790-797. doi:10.1046/j.1365-2648.1997.00371.x
- Feachem, R., Sekhri, N., & White, K. (2002). Getting more for their dollar: a comparison of the NHS with California's Kaiser Permanente. *BMJ*, 324(January), 135-143.
- Fernández, W. D., & Lehmann, H. (2011). Case Studies and Grounded Theory Method in Information Systems Research: Issues and Use. *Journal of Information Technology Case and Application Research*, 13(1), 4-15. Retrieved from <http://search.proquest.com/docview/862388458?accountid=12528>
- http://sfx.monash.edu.au:9003/monash2?url_ver=Z39.88-2004&rft_val_fmt=info:ofi/fmt:kev:mtx:journal&genre=article&sid=ProQ:ProQ%3Aabiglobal&atitle=CASE+STUDIES+AND+GROUNDED+THEORY+METHOD+IN+INFORMATION+SYSTEMS+RESEARCH%3A+ISSUES+AND+USE%3A+JITCAR+JITCAR+JITCA&title=Journal+of+Information+Technology+Case+and+Application+Research&issn=&date=2011-01-01&volume=13&issue=1&spage=4&au=Fern%C3%A1ndez%2C+Walter+D%3BLehmann%2C+Hans&isbn=&jtitle=Journal+of+Information+Technology+Case+and+Application+Research&bttitle=&rft_id=info:eric/
- Fichman, R. G., Kohli, R., & Krishnan, R. (2011). The role of information systems in healthcare: current research and future trends. *Information Systems Research*, 22(3), 419-428.
- Fischer, C. S. (2005). Bowling Alone: What's the score? *Social networks*, 27(2), 155-167.
- Fleming, J., & Ledogar, R. J. (2008). Resilience, an evolving concept: A review of literature relevant to Aboriginal research. *Pimatisiwin*, 6(2), 7.
- Flicker, S., Haans, D., & Skinner, H. (2004). Ethical dilemmas in research on Internet communities. *Qualitative Health Research*, 14(1), 124-134.
- Flyvbjerg, B. (2011). Case Study. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage Handbook of Qualitative Research* (4th ed., pp. 301-316). Thousand Oaks, CA: Sage.

- Folke, C. (2006). Resilience: The emergence of a perspective for social–ecological systems analyses. *Global environmental change*, 16(3), 253-267.
- Folke, C., Carpenter, S., Elmqvist, T., Gunderson, L., Holling, C., & Walker, B. H. (2002). Resilience and sustainable development: building adaptive capacity in a world of transformations. *AMBIO: A Journal of the Human Environment*, 31(5), 437-440.
- Folke, C., Carpenter, S., Walker, B. H., Scheffer, M., Chapin, T., & Rockström, J. (2010). Resilience thinking: integrating resilience, adaptability and transformability. *Ecology and Society*, 15(4), 20.
- Folke, C., Hahn, T., Olsson, P., & Norberg, J. (2005). Adaptive governance of social-ecological systems. *Annu. Rev. Environ. Resour.*, 30, 441-473.
- Forsyth, D. R., Nye, J. L., & Kelley, K. (1988). Idealism, Relativism, and the Ethic of Caring. *The Journal of Psychology*, 122(3), 243-248. doi:10.1080/00223980.1988.9915511
- Forte, A., Larco, V., & Bruckman, A. (2009). Decentralization in Wikipedia governance. *Journal of Management Information Systems*, 26(1), 49-72.
- Foster, C. B. (2013). Mental Health on YouTube: Exploring the potential of interactive media to change knowledge, attitudes and behaviors about mental health.
- Fox, N., Ward, K., & O'Rourke, A. (2005). The 'expert patient': empowerment or medical dominance? The case of weight loss, pharmaceutical drugs and the Internet. *Social Science & Medicine*, 60(6), 1299-1309. Retrieved from <http://www.sciencedirect.com/science/article/B6VBF-4D99PXC-2/2/071ca0cc5448d066354213e226762529>
- Franceschi, K., Lee, R., Zanakis, S., & Hinds, D. (2009). Engaging group e-learning in virtual worlds. *Journal of Management Information Systems*, 26(1), 73-100.
- Frazier, J. (2011). How Social Media Tools Can Disrupt Community Violence. Retrieved from <http://www.astd.org/Publications/Newsletters/Learning-Circuits/Learning-Circuits-Archives/2011/02/How-Social-Media-Tools-Can-Disrupt-Community-Violence>
- Friedmann, E., Thomas, S. A., Liu, F., Morton, P. G., Chapa, D., & Gottlieb, S. S. (2006). Relationship of depression, anxiety, and social isolation to chronic heart failure outpatient mortality. *American heart journal*, 152(5), 940. e941-940. e948.
- Frost, J. H., & Massagli, M. P. (2008). Social uses of personal health information within PatientsLikeMe, an online patient community: what can happen when patients have access to one another's data. *Journal of Medical Internet Research*, 10(3).
- Furler, J., Walker, C., Blackberry, I., Dunning, T., Sulaiman, N., Dunbar, J., . . . Young, D. (2008). The emotional context of self-management in chronic illness: a qualitative study of the role of health professional support in the self-management of type 2 diabetes. *BMC Health Services Research*, 8(1), 214.
- Gadamer, H.-G. (2008). *Philosophical hermeneutics*: Univ of California Press.
- Gallivan, M., & Srite, M. (2005). Information technology and culture: Identifying fragmentary and holistic perspectives of culture. *Information and Organization*, 15(4), 295-338.
- Gannoni, A. F., & Shute, R. H. (2009). Parental and child perspectives on adaptation to childhood chronic illness: a qualitative study. *Clinical Child Psychology and Psychiatry*.
- Garcia-Romero, M. T., Prado, F., Dominguez-Cherit, J., Hojyo-Tomomka, M. T., & Arenas, R. (2011). Teledermatology via a social networking web site: a pilot study between a general hospital and a rural clinic. *Telemedicine and e-Health*, 17(8), 652-655.
- Garcia, E. F., Duberstein, P., Paterniti, D. A., Cipri, C. S., Kravitz, R. L., & Epstein, R. M. (2012). Feeling labeled, judged, lectured, and rejected by family and friends over depression: Cautionary results for primary care clinicians from a multi-centered, qualitative study. *BMC family practice*, 13(1), 64.
- Garmestani, A. S., Allen, C. R., & Cabezas, H. (2008). Panarchy, adaptive management and governance: policy options for building resilience. *Neb. L. Rev.*, 87, 1036.
- Garmezy, N. (1991). Resilience in children's adaptation to negative life events and stressed environments. *Pediatric Annals*, 20(9), 459.
- Gibbs, G. (2008). The nature of qualitative analysis. In U. Flick (Ed.), *Analyzing Qualitative Data*. London: SAGE Publications Ltd.

- Gibson, J. J. (1979). *The ecological approach to visual perception*. Boston, MA: Houghton Mifflin.
- Gignac, M. A., Cott, C., & Badley, E. M. (2000). Adaptation to chronic illness and disability and its relationship to perceptions of independence and dependence. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 55(6), P362-P372.
- Given, L. (2008). *Natural Setting*. *The Sage Encyclopedia of Qualitative Research Methods*. Thousand Oaks, CA: SAGE Publications, Inc.
- Glaser, B. (1978). *Theoretical Sensitivity: Advances in the methodology of grounded theory*. Mill Valley, CA: The Sociology Press.
- Glaser, B. (1992). *Basics of grounded theory analysis*. Mill Valley, CA: Sociology Press.
- Glaser, B. (2005). *The Grounded Theory Perspective III: Theoretical coding*. Mill Valley, CA: The Sociology Press.
- Glaser, B., & Strauss, A. (1967). *The discovery of grounded theory; strategies for qualitative research*. London: Wiedenfeld and Nicholson.
- Glasgow, R., Orleans, T., Wagner, E., Curry, S., & Solberg, L. (2001). Does the Chronic Care Model Serve Also as a Template for Improving Prevention? *The Milbank Quarterly*, 79(4), 579-612.
- Goldberg, H. I., Ralston, J. D., Hirsch, I. B., Hoath, J. I., & Ahmed, K. I. (2003). Using an Internet comanagement module to improve the quality of chronic disease care. *Joint Commission Journal on Quality and Patient Safety*, 29(9), 443-451.
- Grace, D., & Sen, B. (2013). Community resilience and the role of the public library. *library trends*, 61(3), 513-541.
- Grajales III, F. J., Sheps, S., Ho, K., Novak-Lauscher, H., & Eysenbach, G. (2014). Social Media: A Review and Tutorial of Applications in Medicine and Health Care. *Journal of Medical Internet Research*, 16(2).
- Gray, P. H., Parise, S., & Iyer, B. (2011). Innovation Impacts of Using Social Bookmarking Systems. *MIS Quarterly*, 35(3).
- Greene, J., Choudhry, N., Kilabuk, E., & Shrank, W. (2011). Online social networking by patients with diabetes: a qualitative evaluation of communication with Facebook. *Journal of General Internal Medicine*, 26(3), 287-292.
- Greenhalgh, T. (2009). Patient and public involvement in chronic illness: beyond the expert patient. *BMJ*, 338. doi:10.1136/bmj.b49
- Greenwood, J. (1998). The role of reflection in single and double loop learning. *Journal of Advanced Nursing*, 27(5), 1048-1053. doi:10.1046/j.1365-2648.1998.00579.x
- Grieve, R., Indian, M., Witteveen, K., Anne Tolan, G., & Marrington, J. (2013). Face-to-face or Facebook: Can social connectedness be derived online? *Computers in Human Behavior*, 29(3), 604-609.
- Griffiths, C., Foster, G., Ramsay, J., Eldridge, S., & Taylor, S. (2007). How effective are expert patient (lay led) education programmes for chronic disease? *BMJ*, 334(7606), 1254-1256.
- Gruzd, A., & Haythornthwaite, C. (2013). Enabling Community Through Social Media. *Journal of Medical Internet Research*, 15(10).
- Gunderson, L. (2003). Adaptive dancing: interactions between social resilience and ecological crises. In Fikret Berker, John Colding, & Carl Folke (Eds.), *Navigating Social-Ecological Systems*. UK: Cambridge University Press.
- Gunderson, L. (2010). Ecological and human community resilience in response to natural disasters. *Ecology and Society*, 15(2), 18.
- Gunderson, L., & Light, S. (2006). Adaptive management and adaptive governance in the everglades ecosystem. *Policy Sciences*, 39(4), 323-334.
- Hackworth, B., & Kunz, M. (2010). Health care and social media: building relationships via social networks. *Academy of Health Care Management Journal*, 6(1), 55-68.
- Haddad, B. M. (2005). Ranking the adaptive capacity of nations to climate change when socio-political goals are explicit. *Global environmental change*, 15(2), 165-176.

- Hampton, K., Lee, C., & Her, E. (2011). How new media affords network diversity: Direct and mediated access to social capital through participation in local social settings. *New Media & Society*, 1461444810390342.
- Hara, N., & Hew, K. (2007). Knowledge-sharing in an online community of health-care professionals. *Information Technology & People*, 20(3), 235-261.
- Hardy, C., & Leiba-O'Sullivan, S. (1998). The power behind empowerment: implications for research and practice. *Human Relations*, 51(4), 451-483.
- Harlow, S. (2012). Social media and social movements: Facebook and an online Guatemalan justice movement that moved offline. *New Media & Society*, 14(2), 225-243.
- Harrington, M. (2009). Community Involvement in HIV and Tuberculosis Research. *JAIDS Journal of Acquired Immune Deficiency Syndromes*, 52, S63-S66
10.1097/QAI.1090b1013e3181bbcc1056. Retrieved from
http://journals.lww.com/jaids/Fulltext/2009/11011/Community_Involvement_in_HIV_and_Tuberculosis.18.aspx
- Harris, M. (1976). History and significance of the emic/etic distinction. *Annual review of anthropology*, 329-350.
- Hawn, C. (2009). Take Two Aspirin And Tweet Me In The Morning: How Twitter, Facebook, And Other Social Media Are Reshaping Health Care. *Health Affairs*, 28(2), 361-368.
doi:10.1377/hlthaff.28.2.361
- Haythornthwaite, C., & Kendall, L. (2010). Internet and community. *American behavioral scientist*.
- Heaney, C. A., & Israel, B. A. (2002). Social networks and social support. *Health behavior and health education: Theory, research, and practice*, 3, 185-209.
- Hekkala, R., & Urquhart, C. (2013). Everyday power struggles: living in an IOIS project. *European Journal of Information Systems*, 22, 76-94.
- Hew, K. F., & Hara, N. (2007). Knowledge sharing in online environments: A qualitative case study. *Journal of the American Society for Information Science and Technology*, 58(14), 2310-2324.
- Hill-Briggs, F. (2003). Problem solving in diabetes self-management: a model of chronic illness self-management behavior. *Annals of Behavioral Medicine*, 25(3), 182-193.
- Hill, W., Weinert, C., & Cudney, S. (2006). Influence of a computer intervention on the psychological status of chronically ill rural women: Preliminary results. *Nursing Research*, 55(1), 34.
- Hirschheim, R. (1992). Information systems epistemology: an historical perspective. In R. Galliers (Ed.), *Information Systems Research: Issue, Methods, and Practical Guidelines* (pp. 28-60). Oxford: Blackwell Scientific.
- Hobza, C. L., Walker, K. E., Yakushko, O., & Peugh, J. L. (2007). What about men? Social comparison and the effects of media images on body and self-esteem. *Psychology of men & masculinity*, 8(3), 161.
- Hoffman, C., Rice, D., & Sung, H.-Y. (1996). Persons with chronic conditions: their prevalence and costs. *JAMA*, 276(18), 1473-1479.
- Hofstede, G. (1984). *Culture's consequences: International differences in work-related values* (Vol. 5): sage.
- Holling, C. (1973). Resilience and Stability of Ecological Systems *Annual Review of Ecology and Systematics*, 4, 1-23.
- Hubbard, A. (2009). Perspective Taking, Adaptation, and Coordination. In W. Eadie (Ed.), *21st century communication: A reference handbook*. Thousand Oaks: SAGE Publications Inc.
- Huber, G. P. (1990). A theory of the effects of advanced information technologies on organizational design, intelligence, and decision making. *Academy of Management Review*, 47-71.
- Hughes, T. P., Graham, N. A., Jackson, J. B., Mumby, P. J., & Steneck, R. S. (2010). Rising to the challenge of sustaining coral reef resilience. *Trends in Ecology & Evolution*, 25(11), 633-642.

- Hugo, G. (2005). The state of rural population. In C. Cocklin & J. Dibden (Eds.), *Sustainability and Change in Rural Australia* (pp. 56-79). Sydney: University of New South Wales Press.
- Hutchby, I. (2001). Technologies, Texts and Affordances. *Sociology*, 35(2), 441-456.
- Huvila, I., Holmberg, K., Ek, S., & Widén-Wulff, G. (2010). Social capital in second life. *Online Information Review*, 34(2), 295-316.
- Huysman, M., & Wulf, V. (2006). IT to support knowledge sharing in communities, towards a social capital analysis. *Journal of Information Technology*, 21(1), 40-51.
- Introna, L. D. (2013). Otherness and the Letting-be of Becoming: Or, Ethics Beyond Bifurcation *How Matter Matters*. Oxford: Oxford University Press.
- Jaeger, P. T., Lin, J., & Grimes, J. M. (2008). Cloud computing and information policy: Computing in a policy cloud? *Journal of Information Technology & Politics*, 5(3), 269-283.
- Jain, S. H. (2009). Practicing medicine in the age of Facebook. *New England Journal of Medicine*, 361(7), 649-651.
- Janoski, T., & Wilson, J. (1995). Pathways to voluntarism: Family socialization and status transmission models. *Social Forces*, 74(1), 271-292.
- Janssen, M. A., Anderies, J. M., & Ostrom, E. (2007). Robustness of social-ecological systems to spatial and temporal variability. *Society and Natural Resources*, 20(4), 307-322.
- Jaser, S. S., Whittemore, R., Chao, A., Jeon, S., Faulkner, M. S., & Grey, M. (2013). Mediators of 12-Month Outcomes of Two Internet Interventions for Youth With Type 1 Diabetes. *Journal of Pediatric Psychology*, jst081.
- Jennings, A., Powell, J., Armstrong, N., Sturt, J., & Dale, J. (2009). A virtual clinic for diabetes self-management: pilot study. *Journal of Medical Internet Research*, 11(1).
- Jent, J. F., Eaton, C. K., Merrick, M. T., Englebert, N. E., Dandes, S. K., Chapman, A. V., & Hershorin, E. R. (2011). The decision to access patient information from a social media site: What would you do? *Journal of Adolescent Health*, 49(4), 414-420.
- Jha, A. K., Doolan, D., Grandt, D., Scott, T., & Bates, D. W. (2008). The use of health information technology in seven nations. *International Journal of Medical Informatics*, 77(12), 848-854.
- Jiang, Z., Heng, C. S., & Choi, B. C. (2013). Research Note—Privacy Concerns and Privacy-Protective Behavior in Synchronous Online Social Interactions. *Information Systems Research*, 24(3), 579-595.
- Jin, B., Park, J. Y., & Kim, H.-S. (2010). What makes online community members commit? A social exchange perspective. *Behaviour & Information Technology*, 29(6), 587-599.
- Jones, A. J. H., Rowson, J., & Broome, S. (2010). Connected Communities: How social networks power and sustain the Big Society.
- Jones, L., & Boyd, E. (2011). Exploring social barriers to adaptation: Insights from Western Nepal. *Global environmental change*, 21(4), 1262-1274.
- Kamberelis, G., & Dimitriadis, G. (2011). Focus Groups, Strategic Articulations of Pedagogy, Politics, and Inquiry. In N. K. Denize & Y. S. Lincoln (Eds.), *The SAGE Handbook of Qualitative Research* (4th ed., pp. 545-561). Thousand Oaks, CA: Sage.
- Kane, G. C., & Fichman, R. G. (2009). The Shoemaker's Children: Using Wikis for Information Systems Teaching, Research, and Publication. *MIS Quarterly*, 33(1).
- Kane, G. C., Fichman, R. G., Gallagher, J., & Glaser, J. (2009). Community relations 2.0. *Harvard Business Review*, 87(11), 45-50, 132.
- Kaplan, A., & Haenlein, M. (2010). Users of the world, unite! The challenges and opportunities of Social Media. *Business horizons*, 53(1), 59-68.
- Kaplan, B., & Maxwell, A. (1994). Qualitative Research Methods for Evaluating Computer Information Systems. In J. G. Anderson, C. E. Aydin, & S. J. Jay (Eds.), *Evaluating Health Care Information Systems: Methods and Applications* (pp. 45-68). Thousand Oaks, CA: Sage.
- Kavanaugh, A., Carroll, J. M., Rosson, M. B., Zin, T. T., & Reese, D. D. (2005). Community networks: Where offline communities meet online. *Journal of Computer-Mediated Communication*, 10(4), 00-00.

- Keckley, P. H., & Hoffmann, M. (2010). Social networks in health care: Communication, collaboration and insights. *New York: Deloitte Center for Health Solutions.*
- Keeling, D., Khan, A., & Newholm, T. (2013). Internet forums and negotiation of healthcare knowledge cultures. *Journal of Services Marketing, 27*(1), 59-75.
- Keim, M., & Noji, E. (2011). Emergent use of social media: a new age of opportunity for disaster resilience. *American journal of disaster medicine, 6*(1), 47.
- Kennan, W. R., Hazleton, V., Janoske, M., & Short, M. (2008). The influence of new communication technologies on undergraduate preferences for social capital formation, maintenance, and expenditure. *Public Relations Journal, 2*(2), 1-21.
- Ketteni, E., Mamuneas, T., & Stengos, T. (2011). The effect of information technology and human capital on economic growth. *Macroeconomic Dynamics, 15*(05), 595-615.
- Kietzmann, J. H., Hermkens, K., McCarthy, I. P., & Silvestre, B. S. (2011). Social media? Get serious! Understanding the functional building blocks of social media. *Business horizons, 54*(3), 241-251.
- Kilmer, R. P., Gil-Rivas, V. E., Tedeschi, R. G., & Calhoun, L. G. (2010). *Helping families and communities recover from disaster: Lessons learned from hurricane Katrina and its aftermath*: American Psychological Association.
- Kim, H. S., Sherman, D. K., & Taylor, S. E. (2008). Culture and social support. *American Psychologist, 63*(6), 518.
- Kim, Y. (2001). *Becoming intercultural: An integrative theory of communication and cross-cultural adaptation*: Sage.
- King, A. (2008). *The SAGE Encyclopedia of Qualitative Research Methods*. Thousand Oaks, CA: SAGE Publications, Inc.
- Kirmayer, L. J. (2009). Community resilience: Models, metaphors and measures.
- Klein, H., & Myers, M. (1999). A Set of Principles for Conducting and Evaluating Interpretive Field Studies in Information Systems. *MIS Quarterly, 23*(1), 67-93. Retrieved from <http://www.jstor.org/stable/249410>
- Klein, H., & Myers, M. (2001). A classification scheme for interpretive research in information systems. *Qualitative Research in IS: Issues and Trends, 218-239.*
- Kleinman, A. (1981). *Patients and Healers in the Context of Culture: An Exploration of the Borderland between Anthropology, Medicine, and Psychiatry*. Berkeley: University of California Press.
- Knapp, M., Bauer, A., Perkins, M., & Snell, T. (2013). Building community capital in social care: is there an economic case? *Community development journal, 48*(2), 313-331.
- Kobayashi, T., Ikeda, K. i., & Miyata, K. (2006). Social capital online: Collective use of the Internet and reciprocity as lubricants of democracy. *Information, Community & Society, 9*(5), 582-611.
- Koch, H., Leidner, D. E., & Gonzalez, E. S. (2013). Digitally enabling social networks: resolving IT-culture conflict. *Information Systems Journal, 23*(6), 501-523.
- Korda, H., & Itani, Z. (2013). Harnessing social media for health promotion and behavior change. *Health Promotion Practice, 14*(1), 15-23.
- Kotlarsky, J., & Oshri, I. (2005). Social ties, knowledge sharing and successful collaboration in globally distributed system development projects. *European Journal of Information Systems, 14*(1), 37-48.
- Kralik, D., Van Loon, A., & Visentin, K. (2006). Resilience in the chronic illness experience. *Educational Action Research, 14*(2), 187-201.
- Kulig, J. (2000). Community resiliency: The potential for community health nursing theory development. *Public Health Nursing, 17*(5), 374-385.
- Kulig, J., Edge, D., & Joyce, B. (2008). Understanding community resiliency in rural communities through multimethod research.
- Lampe, C., Wash, R., Velasquez, A., & Ozkaya, E. (2010). *Motivations to participate in online communities*. Paper presented at the Proceedings of the SIGCHI Conference on Human Factors in Computing Systems.
- Lancet, T. (2012). Social media: how doctors can contribute. *The Lancet, 379*(9826), 1562.

- Laroche, M., Habibi, M. R., Richard, M.-O., & Sankaranarayanan, R. (2012). The effects of social media based brand communities on brand community markers, value creation practices, brand trust and brand loyalty. *Computers in Human Behavior*, 28(5), 1755-1767.
- Lau, A., Gabarron, E., Fernandez-Luque, L., & Armayones, M. (2012). Social media in health- what are the safety concerns for health consumers? *Health Information Management Journal*, 41(2), 30.
- Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*: Cambridge university press.
- Laverty, S. M. (2003). Hermeneutic phenomenology and phenomenology: A comparison of historical and methodological considerations. *International journal of qualitative methods*, 2(3).
- Lee, A. (1994). Electronic mail as a medium for rich communication: an empirical investigation using hermeneutic interpretation. *MIS Quarterly*, 18(2), 143-157.
- Lee, S. (2009). Online Communication and Adolescent Social Ties: Who benefits more from Internet use? *Journal of Computer-Mediated Communication*, 14, 509-531.
- Leidner, D., & Kayworth, T. (2006). Review: a review of culture in information systems research: toward a theory of information technology culture conflict. *MIS Quarterly*, 30(2), 357-399.
- Leidner, D., Pan, G., & Pan, S. (2009). The role of IT in crisis response: Lessons from the SARS and Asian Tsunami disasters. *The Journal of Strategic Information Systems*, 18(2), 80-99. Retrieved from <http://www.sciencedirect.com/science/article/pii/S0963866870900016X>
- Leiserowitz, A. A., Kates, R. W., & Parris, T. M. (2006). Sustainability values, attitudes, and behaviors: A review of multinational and global trends. *Annu. Rev. Environ. Resour.*, 31, 413-444.
- Leonard, M. (2004). Bonding and bridging social capital: Reflections from Belfast. *Sociology*, 38(5), 927-944.
- Leonardi, P. (2009). Why do people reject new technologies and stymie organizational changes of which they are in favor? Exploring misalignments between social interactions and materiality. *Human Communication Research*, 35(3), 407-441.
- Leonardi, P. (2011). When flexible routines meet flexible technologies: Affordance, constraint, and the imbrication of human and material agencies. *MIS Quarterly*, 35(1), 147-167.
- Leonardi, P. (2012). Materiality, Sociomateriality, and Socio-Technical Systems: What Do These Terms Mean? How Are They Related? Do We Need Them? In P. M. Leonardi, B. A. Nardi, & J. Kallinikos (Eds.), *Materiality and Organizing: Social Interaction in a Technological World* (pp. 25-48). Oxford: Oxford University Press.
- Lev-On, A. (2010). Engaging the disengaged: Collective action, media uses, and sense of (virtual) community by evacuees from Gush Katif. *American behavioral scientist*, 53(8), 1208-1227.
- Levin, B. (2008). *Thinking about knowledge mobilization*. Paper presented at the an invitational symposium sponsored by the Canadian Council on Learning and the Social Sciences and Humanities Research Council, Ontario Institute for Studies in Education, Toronto.
- Levin, D., & Cross, R. (2004). The strength of weak ties you can trust: The mediating role of trust in effective knowledge transfer. *Management science*, 50(11), 1477-1490.
- Levina, N., & Vaast, E. (2008). Innovating or doing as told? Status differences and overlapping boundaries in offshore collaboration. *MIS Quarterly*, 32(2), 307-332.
- Li, J. (2013a). Improving Chronic Disease Self-Management through Social Networks. *Population health management*, 16(5), 285-287.
- Li, J. (2013b). Privacy policies for health social networking sites. *Journal of the American Medical Informatics Association*, 20(4), 704-707.
- Li, J. S., Barnett, T. A., Goodman, E., Wasserman, R. C., & Kemper, A. R. (2013). Approaches to the Prevention and Management of Childhood Obesity: The Role of Social Networks and the Use of Social Media and Related Electronic Technologies: A Scientific

- Statement From the American Heart Association. *Circulation*, 127(2), 260-267. doi:10.1161/CIR.obo13e3182756d8e
- Li, L., Townsend, A., & Badley, E. (2012). Self-management interventions in the digital age: New approaches to support people with rheumatologic conditions. *Best Practice & Research Clinical Rheumatology*, 26(3), 321-333.
- Lieberman, M. A., & Goldstein, B. A. (2006). Not all negative emotions are equal: The role of emotional expression in online support groups for women with breast cancer. *Psycho-Oncology*, 15(2), 160-168.
- Lin, L.-Y., Orsmond, G. I., Coster, W. J., & Cohn, E. S. (2011). Families of adolescents and adults with autism spectrum disorders in Taiwan: The role of social support and coping in family adaptation and maternal well-being. *Research in Autism Spectrum Disorders*, 5(1), 144-156.
- Lin, N. (2002). Social capital: a theory of social structure and action (structural analysis in the social sciences).
- Lincoln, Y. S., Lynham, S. A., & Guba, E. G. (2011). Paradigmatic Controversies, Contradictions, and Emerging Confluences. In Norman K. Denzin & Yvonnas S. Lincoln (Eds.), *The SAGE Handbook of Qualitative Research* (pp. 97). Thousand Oaks: SAGE.
- Lindholm, C., Burstro, M., & Diderichsen, F. (2001). Does chronic illness cause adverse social and economic consequences among Swedes? *Scand J Public Health*, 29, 63-70.
- Lindsay, S., Bellaby, P., Smith, S., & Baker, R. (2008). Enabling healthy choices: is ICT the highway to health improvement? *Health*, 12(3), 313-331.
- Lings, B., & Lundell, B. (2005). On the adaptation of Grounded Theory procedures: insights from the evolution of the < IT> 2G</IT>. *Information Technology & People*, 18(3), 196-211.
- Livneh, H. (2001). Psychosocial Adaptation to Chronic Illness and Disability A Conceptual Framework. *Rehabilitation Counseling Bulletin*, 44(3), 151-160.
- Livneh, H., & Antonak, R. F. (2005). Psychosocial adaptation to chronic illness and disability: A primer for counselors. *Journal of Counseling & Development*, 83(1), 12-20.
- Longstaff, P. H., Armstrong, N. J., Perrin, K., Parker, W. M., & Hidek, M. (2010). Building Resilient Communities A Preliminary Framework for Assessment.
- Lorig, K., Ritter, P., Stewart, A., Sobel, D., Brown, B., Bandura, A., . . . Holman, H. (2001). Chronic disease self-management program: 2-year health status and health care utilization outcomes. *Medical Care*, 39(11), 1217-1223.
- Lorig, K., Ritter, P. L., Plant, K., Laurent, D. D., Kelly, P., & Rowe, S. (2013). The South australia health chronic disease self-management internet trial. *Health Education & Behavior*, 40(1), 67-77.
- Lorig, K. R., Ritter, P. L., Dost, A., Plant, K., Laurent, D. D., & Mcneil, I. (2008). The expert patients programme online, a 1-year study of an Internet-based self-management programme for people with long-term conditions. *Chronic Illness*, 4(4), 247-256. doi:10.1177/1742395308098886
- Lovejoy, K., & Saxton, G. D. (2012). Information, Community, and Action: How Nonprofit Organizations Use Social Media*. *Journal of Computer-Mediated Communication*, 17(3), 337-353. doi:10.1111/j.1083-6101.2012.01576.x
- Luban-Plozza, B. (1995). Empowerment techniques: from doctor-centered (Balint approach) to patient-centred discussion groups. *Patient Education and Counseling*, 26(1-3), 257-263. Retrieved from <http://www.sciencedirect.com/science/article/pii/073839919500756P>
- Lund Vinding, A. (2006). Absorptive capacity and innovative performance: A human capital approach. *Economics of Innovation and New Technology*, 15(4-5), 507-517.
- Luo, X., Zhang, J., & Duan, W. (2013). Social media and firm equity value. *Information Systems Research*, 24(1), 146-163.
- Luthar, S. (2003). *Resilience and vulnerability: Adaptation in the context of childhood adversities*: Cambridge University Press.

- Luthar, S. (2006). Resilience in development: A synthesis of research across five decades. In D. Cicchetti & D. Cohen (Eds.), *Developmental Psychopathology: Risk, Disorder, and Adaptation* (pp. 740-795). New York: Wiley.
- Ma, M., & Agarwal, R. (2007). Through a glass darkly: Information technology design, identity verification, and knowledge contribution in online communities. *Information Systems Research*, 18(1), 42-67.
- MacKinnon, D., & Derickson, K. D. (2013). From resilience to resourcefulness A critique of resilience policy and activism. *Progress in Human Geography*, 37(2), 253-270.
- MacQueen, K. M., McLellan, E., Metzger, D. S., Kegeles, S., Scotti, R., Blanchard, L., & Trotter, R. T. (2001). What Is Community? An Evidence-Based Definition for Participatory Public Health. *American Journal of Public Health*, 91(12), 1929-1938. doi:10.2105/ajph.91.12.1929
- Magis, K. (2010). Community resilience: An indicator of social sustainability. *Society and Natural Resources*, 23(5), 401-416.
- Majchrzak, A. (2009). Comment: Where is the theory in wikis? *MIS Quarterly*, 33(1), 18-20.
- Majchrzak, A., Faraj, S., Kane, G. C., & Azad, B. (2013). The Contradictory Influence of Social Media Affordances on Online Communal Knowledge Sharing. *Journal of Computer-Mediated Communication*, 19(1), 38-55.
- Majchrzak, A., & Markus, M. (2013). Technology Affordances and Constraints Theory of Management Information Systems. In E. Kessler (Ed.), *Encyclopedia of management theory* (pp. 832-836). Thousand Oaks, CA: SAGE Publications, Inc.
- Mancini, J. A., & Bowen, G. L. (2009). Community resilience: A social organization theory of action and change. *Pathways of human development: Explorations of change*, 245-265.
- Mansour, O., Askenäs, L., & Ghazawneh, A. (2013). *Social Media and Organizing - An Empirical Analysis of the Role of Wiki Affordances in Organizing Practice*. Paper presented at the Thirty Fourth International Conference on Information Systems, Milan.
- Manyena, S. B. (2006). The concept of resilience revisited. *Disasters*, 30(4), 434-450.
- Marmot, M. (2005). Social determinants of health inequalities. *The Lancet*, 365(9464), 1099-1104. Retrieved from <http://www.sciencedirect.com/science/article/B6T1B-4FRBTM6-17/2/d44556bbb7ca1c4343596e8a1f62eddb>
- Marsh, V., Kamuya, D., Rowa, Y., Gikonyo, C., & Molyneux, S. (2008). Beginning community engagement at a busy biomedical research programme: Experiences from the KEMRI CGMRC-Wellcome Trust Research Programme, Kilifi, Kenya. *Social Science & Medicine*, 67(5), 721-733.
- Marshall, & Rossman, G. (2011). *Designing Qualitative Research* (Fifth ed.). Thousand Oaks: SAGE.
- Marshall, L. A., & Williams, D. (2006). Health information: does quality count for the consumer? How consumers evaluate the quality of health information materials across a variety of media. *Journal of Librarianship and Information Science*, 38(3), 141-156.
- Martín, E., Haya, P. A., & Carro, R. M. (2013). Adaptation Technologies to Support Daily Living for All *User Modeling and Adaptation for Daily Routines* (pp. 1-21): Springer.
- Marziali, E. (2009). E-health program for patients with chronic disease. *Telemedicine and e-Health*, 15(2), 176-181.
- Matzat, U. (2010). Reducing problems of sociability in online communities: Integrating online communication with offline interaction. *American behavioral scientist*.
- Maxwell, J. A. (2005). Conceptual Framework: What Do You Think Is Going On? In J. A. Maxwell (Ed.), *Qualitative research design: An interactive approach* (2nd ed.). Thousand Oaks, CA: SAGE Publications.
- May, C. R., Finch, T. L., Cornford, J., Exley, C., Gately, C., Kirk, S., . . . Rogers, A. (2011). Integrating telecare for chronic disease management in the community: what needs to be done? *BMC Health Services Research*, 11(1), 131.

- McCullough, M., Kimeldorf, M., & Cohen, A. (2008). An Adaptation for Altruism The Social Causes, Social Effects, and Social Evolution of Gratitude. *Current directions in psychological science*, 17(4), 281-285.
- McEwan, B., & Zanolta, D. (2013). When online meets offline: A field investigation of modality switching. *Computers in Human Behavior*, 29(4), 1565-1571.
- McGowan, B. S., Wasko, M., Vartabedian, B. S., Miller, R. S., Freiherr, D. D., & Abdolrasulnia, M. (2012). Understanding the factors that influence the adoption and meaningful use of social media by physicians to share medical information. *Journal of Medical Internet Research*, 14(5).
- McMillan, D. W., & Chavis, D. M. (1986). Sense of community: A definition and theory. *Journal of Community Psychology*, 14(1), 6-23. Retrieved from [http://dx.doi.org/10.1002/1520-6629\(198601\)14:1<6::AID-JCOP2290140103>3.O.CO;2-I](http://dx.doi.org/10.1002/1520-6629(198601)14:1<6::AID-JCOP2290140103>3.O.CO;2-I)
- Merolli, M., Gray, K., & Martin-Sanchez, F. (2013). Health outcomes and related effects of using social media in chronic disease management: A literature review and analysis of affordances. *Journal of Biomedical Informatics*, 46(6), 957-969.
- Meyer, J. P., & Allen, N. J. (1991). A three-component conceptualization of organizational commitment. *Human resource management review*, 1(1), 61-89.
- Mignone, J., & Henley, H. (2009). Impact of information and communication technology on social capital in aboriginal communities in Canada. *Journal of Information, Information Technology, and Organizations*, 4, 127-145.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative Data Analysis* (2nd ed.). Thousand Oaks, USA: Sage.
- Miller, G., Chen, E., & Cole, S. W. (2009). Health psychology: Developing biologically plausible models linking the social world and physical health. *Annual review of psychology*, 60, 501-524.
- Mingers, J. (1984). Subjectivism and soft systems methodology - a critique. *Journal of Applied Systems Analysis*, 11, 85-10.
- Mingers, J., & Willcocks, L. (2014). An integrative semiotic framework for information systems: The social, personal and material worlds. *Information and Organization*, 24, 48-70.
- Mitchell, K. J., & Ybarra, M. (2009). Social networking sites: finding a balance between their risks and benefits. *Arch Pediatr Adolesc Med*, 163(1), 87-89. doi:10.1001/archpediatrics.2008.534
- Mo, P. K., & Coulson, N. S. (2010). Empowering processes in online support groups among people living with HIV/AIDS: A comparative analysis of 'lurkers' and 'posters'. *Computers in Human Behavior*, 26(5), 1183-1193.
- Moore, C. M. (1996). What is community? *Chronicle of community*, 1(1), 28-32.
- Moore, G. C., & Benbasat, I. (1991). Development of an instrument to measure the perceptions of adopting an information technology innovation. *Information Systems Research*, 2(3), 192-222.
- Moorhead, S. A., Hazlett, D. E., Harrison, L., Carroll, J. K., Irwin, A., & Hoving, C. (2013). A new dimension of health care: systematic review of the uses, benefits, and limitations of social media for health communication. *Journal of Medical Internet Research*, 15(4).
- Moors, A., Ellsworth, P. C., Scherer, K. R., & Frijda, N. H. (2013). Appraisal theories of emotion: State of the art and future development. *Emotion Review*, 5(2), 119-124.
- Moreno, M. A., Fost, N. C., & Christakis, D. A. (2008). Research ethics in the MySpace era. *Pediatrics*, 121(1), 157-161. doi:10.1542/peds.2007-3015
- Morgan, D. L., & Spanish, M. T. (1984). Focus groups: A new tool for qualitative research. *Qualitative Sociology*, 7(3), 253-270. doi:10.1007/bf00987314
- Morreale, S., Spitzberg, B., & Barge, J. (2007). *Human Communication: Motivation, Knowledge, and Skills* (Second ed.). Belmont: Thomson Wadsworth.
- Morse, J. M. (2006). The politics of evidence. *Qualitative Health Research*, 16(3), 395-404.

- Murphy, B. L. (2007). Locating social capital in resilient community-level emergency management. *Natural Hazards*, 41(2), 297-315.
- Murray, E., Burns, J., See, T. S., Lai, R., & Nazareth, I. (2005). Interactive Health Communication Applications for people with chronic disease. *Cochrane Database Syst Rev*, 4.
- Murthy, D. (2008). Digital Ethnography An Examination of the Use of New Technologies for Social Research. *Sociology*, 42(5), 837-855.
- Myers, M. (1997). Qualitative research in information systems. *MIS Quarterly*, 21(2), 241-241. Retrieved from <http://ezproxy.lib.monash.edu.au/login?url=http://proquest.umi.com/pqdweb?did=13377371&Fmt=7&clientId=16397&RQT=309&VName=PQD>
- Myers, M. (2013). *Qualitative Research in Business & Management* (Second ed.). London: Sage Publications.
- Myers, M., & Newman, M. (2007). The qualitative interview in IS research: Examining the craft. *Information and Organization*, 17(1), 2-26. Retrieved from <http://www.sciencedirect.com/science/article/B6W7M-4MV19XR-1/2/f47406d4b7da86b62cf822145970c14b>
- Nach, H., & Lejeune, A. (2010). Coping with information technology challenges to identity: A theoretical framework. *Computers in Human Behavior*, 26(4), 618-629.
- Nakayama, T., Takahashi, Y., Shimbo, T., Uchida, C., Miyaki, K., & Sakai, M. (2009). Potential benefits and harms of a peer support social network service on the internet for people with depressive tendencies: qualitative content analysis and social network analysis. *Journal of Medical Internet Research*, 11(3).
- National Health Services. (2007). The NHS and Social Care long term conditions model. Retrieved from http://webarchive.nationalarchives.gov.uk/+www.dh.gov.uk/en/Healthcare/Longtermconditions/DH_4130652
- Nelson, D. R., Adger, N., & Brown, K. (2007). Adaptation to environmental change: contributions of a resilience framework. *Annual review of Environment and Resources*, 32(1), 395.
- Newman, M. A. (1990). Newman's theory of health as praxis. *Nursing Science Quarterly*, 3(1), 37-41.
- Nicholls, S. (2012). The resilient community and communication practice. *Australian Journal of Emergency Management, The*, 27(1), 46.
- Nie, N. H., & Hillygus, D. S. (2002). The impact of Internet use on sociability: Time-diary findings. *It & Society*, 1(1), 1-20.
- Nie, N. H., Hillygus, D. S., & Erbring, L. (2002). Internet use, interpersonal relations and sociability: A time diary study. In B. Wellman & C. Haythornthwaite (Eds.), *Internet and everyday life* (pp. 215-243). Oxford: Blackwell.
- Noone, P. (2009). Social determinants of health. *Occupational Medicine*, 59(3), 209. doi:10.1093/occmed/kqp007
- Nordfeldt, S., Hanberger, L., & Berterö, C. (2010). Patient and parent views on a Web 2.0 Diabetes Portal-the management tool, the generator, and the gatekeeper. *Journal of Medical Internet Research*, 12(2).
- Norris, F., Stevens, S., Pfefferbaum, B., Wyche, K., & Pfefferbaum, R. (2008). Community resilience as a metaphor, theory, set of capacities, and strategy for disaster readiness. *American Journal of Community Psychology*, 41(1-2), 127-150.
- Norris, S., Glasgow, R., Engelgau, M., O'Connor, P., & McCulloch, D. (2003). Chronic Disease Management: A Definition And Systematic Approach To Component Interventions. *Disease Management and Health Outcomes*, 11(8), 477-488. Retrieved from http://adisonline.com/diseasemanagement/Fulltext/2003/11080/Chronic_Disease_Management_A_Definition_And.1.aspx
- O'Connor, D. (2009). Apomediation and the significance of online social networking. *The American Journal of Bioethics*, 9(6-7), 25-27.

- O'Keeffe, G. S., & Clarke-Pearson, K. (2011). The impact of social media on children, adolescents, and families. *Pediatrics*, *127*(4), 800-804.
- O'reilly, T. (2007). What is Web 2.0: Design patterns and business models for the next generation of software. *Communications & strategies*(65).
- O'Sullivan, T. L., Kuziemy, C. E., Toal-Sullivan, D., & Corneil, W. (2013). Unraveling the complexities of disaster management: A framework for critical social infrastructure to promote population health and resilience. *Social Science & Medicine*, *93*, 238-246.
- O'Connor, D. (2010). Apomediation and ancillary care: researchers' responsibilities in health-related online communities. *International Journal of Internet Research Ethics*, *3*, 87-103.
- Oestreicher-Singer, G., & Zalmanson, L. (2013). CONTENT OR COMMUNITY? A DIGITAL BUSINESS STRATEGY FOR CONTENT PROVIDERS IN THE SOCIAL AGE. *MIS Quarterly*, *37*(2).
- Oh, O., Agrawal, M., & Rao, R. (2013). Community intelligence and social media services: a rumor theoretic analysis of tweets during social crises. *MIS Quarterly*, *37*(2), 407-426.
- Ohno-Machado, L., Silveira, P. S. P., & Vinterbo, S. (2004). Protecting patient privacy by quantifiable control of disclosures in disseminated databases. *International Journal of Medical Informatics*, *73*(7), 599-606.
- Olesen, K. (2014). Implications of dominant technological frames over a longitudinal period. *Information Systems Journal*, *24*(3), 207-228. doi:10.1111/isj.12006
- Olesen, K., & Myers, M. (1999). Trying to improve communication and collaboration with information technology. *Information Technology & People*, *12*(4), 317-332. doi:doi:10.1108/09593849910301621
- Oreg, S., & Nov, O. (2008). Exploring motivations for contributing to open source initiatives: The roles of contribution context and personal values. *Computers in Human Behavior*, *24*(5), 2055-2073.
- Orlikowski, W. (1992). The duality of technology: Rethinking the concept of technology in organizations. *Organization Science*, *3*(3), 398-427.
- Orlikowski, W. (1993). CASE tools as organizational changes: Investigating incremental and radical changes in system development. *MIS Quarterly*, *17*(3), 309-340. Retrieved from <http://www.sciencedirect.com/science/article/B6VFY-45P07RN-3/2/6fe958840a30689d65ba31e5ce6bca27>
- Orlikowski, W. (1996). Improving organizational transformation over time: a situated change perspective. *MIS Quarterly*, *7*(1), 63-92.
- Orlikowski, W. (2007). Sociomaterial practices: exploring technology at work. *Organization Studies*, *28*(9), 1435-1448.
- Orlikowski, W. (2010). The sociomateriality of organisational life: considering technology in management research. *Cambridge Journal of Economics*, *34*(1), 125-141.
- Orlikowski, W., & Barley, S. (2001). Technology and institutions: what can research on information technology and research on organizations learn from each other? *MIS Quarterly*, *25*(2), 145-165.
- Orlikowski, W., & Baroudi, J. (1991). Studying Information Technology in Organizations: Research Approaches and Assumptions. *Information Systems Research*, *2*(1), 1-28. Retrieved from <http://ezproxy.lib.monash.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=buh&AN=4431364&site=ehost-live&scope=site>
- Orlikowski, W., & Scott, S. (2008). Sociomateriality: Challenging the Separation of Technology, Work and Organization. *The Academy of Management Annals*, *2*(1), 433-474.
- Orlikowski, W., & Scott, S. (2013). Knowledge Eclipse: Producing Sociomaterial Reconfigurations in the Hospitality Sector *How Matter Matters*. Oxford: Oxford University Press.
- Orlikowski, W., & Yates, J. (1994). Genre repertoire: The structuring of communicative practices in organizations. *Administrative Science Quarterly*, 541-574.

- Osborne, R. H., Jordan, J. E., & Rogers, A. (2008). A critical look at the role of self-management for people with arthritis and other chronic diseases. *Nat Clin Pract Rheum*, 4(5), 224-225. Retrieved from <http://dx.doi.org/10.1038/ncprheum0765>
- Ostrom, E. (2007). *A General Framework for Analyzing Sustainability of*. Paper presented at the Proc. R. Soc. London Ser. B.
- Otto, A. (2011). Social Media Facilitate Medical Communication Experts debate risks and benefits of engaging in Twitter, Facebook, texting, and blogs. *Internal Medicine News*, 44(2), 55-55.
- Pachucki, M. A., & Breiger, R. L. (2010). Cultural holes: Beyond relationality in social networks and culture. *Annual review of sociology*, 36, 205-224.
- Pakenham, K. I., & Cox, S. (2009). The dimensional structure of benefit finding in multiple sclerosis and relations with positive and negative adjustment: A longitudinal study. *Psychology and Health*, 24(4), 373-393.
- Panagiotopoulos, P., Bigdeli, A. Z., & Sams, S. (2014). Citizen–government collaboration on social media: The case of Twitter in the 2011 riots in England. *Government Information Quarterly*, 31(3), 349-357.
- Panter-Brick, C., & Eggerman, M. (2012). Understanding culture, resilience, and mental health: The production of hope *The social ecology of resilience* (pp. 369-386): Springer.
- Park, C. L., Chmielewski, J., & Blank, T. O. (2010). Post-traumatic growth: finding positive meaning in cancer survivorship moderates the impact of intrusive thoughts on adjustment in younger adults. *Psycho-Oncology*, 19(11), 1139-1147.
- Paton, D., & Johnston, D. (2001). Disasters and communities: vulnerability, resilience and preparedness. *Disaster Prevention and Management*, 10(4), 270-277.
- Paul, E. L., & Brier, S. (2001). Friendsickness in the transition to college: Precollege predictors and college adjustment correlates. *Journal of Counseling & Development*, 79(1), 77-89.
- Pelling, M., & High, C. (2005). Understanding adaptation: what can social capital offer assessments of adaptive capacity? *Global environmental change*, 15(4), 308-319.
- Pelling, M., & Manuel-Navarrete, D. (2011). From resilience to transformation: the adaptive cycle in two Mexican urban centers. *Ecology and Society*, 16(2), 11.
- Pfefferbaum, B., Reissman, D., Pfefferbaum, R., Klomp, R., & Gurwitch, R. (2005). Building resilience to mass trauma events. In L. Doll, S. Bonzo, J. Mercy, & D. Sleet (Eds.), *Handbook on injury and violence prevention interventions*. New York: Kluwer Academic Publishers.
- Phillips, N., Lawrence, T. B., & Hardy, C. (2004). Discourse and institutions. *Academy of Management Review*, 29(4), 635-652.
- Pink, B. (2011). *2009–10 Year Book Australia*. Retrieved from Canberra:
- Plickert, G., Cote, R. R., & Wellman, B. (2007). It's not who you know, it's how you know them: Who exchanges what with whom? *Social networks*, 29(3), 405-429.
- Plummer, R., Armitage, D. R., & De Loë, R. C. (2013). Adaptive comanagement and its relationship to environmental governance. *Ecology and Society*, 18(1), 21.
- Pollock, S. E. (1986). Human responses to chronic illness: Physiologic and psychosocial adaptation. *Nursing Research*, 35(2), 90-97.
- Pooley, J., Cohen, L., & O'Connor, M. (2006). Community resilience and its link to individual resilience in the disaster experience of cyclone communities in northwest Australia. In D. Paton & D. Johnston (Eds.), *Disaster resilience: An integrated approach* (pp. 161-170). Springfield, IL: Charles C Thomas Publishers.
- Poortinga, W. (2012). Community resilience and health: The role of bonding, bridging, and linking aspects of social capital. *Health & Place*, 18(2), 286-295.
- Pousti, H., Burstein, F., Urquhart, C., & Linger, H. (2013). *Methodological implications of Social Media as a research setting for IS healthcare studies: Reflections from a grounded theory study*. Paper presented at the 24th Australasian Conference on Information Systems, ACIS2013, Melbourne, Australia.

- Preece, J., & Shneiderman, B. (2009). The reader-to-leader framework: Motivating technology-mediated social participation. *AIS Transactions on Human-Computer Interaction*, 1(1), 13-32.
- Prensky, M. (2001). Digital natives, digital immigrants part 1. *On the horizon*, 9(5), 1-6.
- Prensky, M. (2004). The emerging online life of the digital native. *Consultado em*.
- Primomo, J., Yates, B. C., & Woods, N. F. (1990). Social support for women during chronic illness: The relationship among sources and types to adjustment. *Research in Nursing & Health*, 13(3), 153-161.
- Proudfoot, J., Parker, G., Pavlovic, D. H., Manicavasagar, V., Adler, E., & Whitton, A. (2010). Community attitudes to the appropriation of mobile phones for monitoring and managing depression, anxiety, and stress. *Journal of Medical Internet Research*, 12(5).
- Punie, Y. (2007). Learning Spaces: an ICT-enabled model of future learning in the Knowledge-based Society. *European Journal of Education*, 42(2), 185-199.
- Putnam, R. (2000). *Bowling Alone: The Collapse and Revival of American Community*. New York: Simon & Schuster.
- Quan-Haase, A., Wellman, B., Witte, J., & Hampton, K. (2002). Capitalizing on the Internet: Social contact, civic engagement, and sense of community. In B. Wellman & C. Haythornthwaite (Eds.), *Internet and everyday life* (pp. 291-324). Oxford: Blackwell.
- Quiros, L. (2010). Trauma, recovery, and growth: Positive psychological perspectives on posttraumatic stress.
- Ranmuthugala, G., Plumb, J. J., Cunningham, F. C., Georgiou, A., Westbrook, J. I., & Braithwaite, J. (2011). How and why are communities of practice established in the healthcare sector? A systematic review of the literature. *BMC Health Services Research*, 11(1), 273.
- Ransbotham, S., & Kane, G. C. (2011). Membership turnover and collaboration success in online communities: Explaining rises and falls from grace in Wikipedia. *MIS Quarterly-Management Information Systems*, 35(3), 613.
- Räsänen, P., & Kouvo, A. (2007). Linked or divided by the web?: Internet use and sociability in four European countries. *Information, Community and Society*, 10(2), 219-241.
- Rawlani, A. K., & Sovacool, B. K. (2011). Building responsiveness to climate change through community based adaptation in Bangladesh. *Mitigation and Adaptation Strategies for Global Change*, 16(8), 845-863.
- Ray, S., Kim, S. S., & Morris, J. G. (2014). The central role of engagement in online communities. *Information Systems Research*, 25(3), 528-546.
- Reich, S. M., Subrahmanyam, K., & Espinoza, G. (2012). Friending, IMing, and hanging out face-to-face: overlap in adolescents' online and offline social networks. *Developmental Psychology*, 48(2), 356.
- Reinhardt, J. P., Boerner, K., & Horowitz, A. (2009). Personal and social resources and adaptation to chronic vision impairment over time. *Aging and Mental Health*, 13(3), 367-375.
- Reissman, D., Spencer, S., Tanielian, T., & Stein, B. (2005). Integrating behavioral aspects into community preparedness and response systems. In Y. Danieli, D. Brom, & J. Sills (Eds.), *The trauma of terror: Sharing knowledge and shared care* (pp. 707-720). Binghamton, NY: Haworth Press.
- Ren, Y., Kraut, R., & Kiesler, S. (2007). Applying common identity and bond theory to design of online communities. *Organization Studies*, 28(3), 377-408.
- Resnick, M. D. (2000). Protective factors, resiliency, and healthy youth development. *Adolescent Medicine: State of the Art Reviews*, 11(1), 157-164.
- Ressler, P. K., Bradshaw, Y. S., Gualtieri, L., & Chui, K. K. H. (2012). Communicating the experience of chronic pain and illness through blogging. *Journal of Medical Internet Research*, 14(5).
- Rice, S. M., Goodall, J., Hetrick, S. E., Parker, A. G., Gilbertson, T., Amminger, G. P., . . . Alvarez-Jimenez, M. (2014). Online and Social Networking Interventions for the

- Treatment of Depression in Young People: A Systematic Review. *Journal of Medical Internet Research*, 16(9).
- Richardson, C., Buis, L., Janney, A., Goodrich, D., Sen, A., Hess, M., . . . Zikmund-Fisher, B. (2010). An online community improves adherence in an internet-mediated walking program. Part 1: results of a randomized controlled trial. *Journal of Medical Internet Research*, 12(4).
- Richardson, L. (2000). New writing practices in qualitative research. *Sociology of sport journal*, 17(1), 5-20.
- Ridings, C., & Gefen, D. (2004). Virtual community attraction: Why people hang out online. *Journal of Computer-Mediated Communication*, 10(1), 00-00.
- Ridings, C., & Wasko, M. (2010). Online discussion group sustainability: Investigating the interplay between structural dynamics and social dynamics over time. *Journal of the Association for Information Systems*, 11(2).
- Robison, J., Fortinsky, R., Kleppinger, A., Shugrue, N., & Porter, M. (2009). A broader view of family caregiving: effects of caregiving and caregiver conditions on depressive symptoms, health, work, and social isolation. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 64(6), 788-798.
- Rolfe, R. E. (2006). Social cohesion and community resilience: A multidisciplinary review of literature for rural health research. *Department of International Development Studies Faculty of Graduate Studies and Research Saint Mary's University, Halifax*.
- Rosenstock, I. M., Strecher, V. J., & Becker, M. H. (1988). Social learning theory and the health belief model. *Health Education & Behavior*, 15(2), 175-183.
- Rutter, M. (1987). Psychosocial resilience and protective mechanisms. *American Journal of Orthopsychiatry*, 57(3), 316.
- Ryan, H., Schofield, P., Cockburn, J., Butow, P., Tattersall, M., Turner, J., . . . Bowman, D. (2005). How to recognize and manage psychological distress in cancer patients. *European Journal of Cancer Care*, 14(1), 7-15.
- Saadé, R., & Bahli, B. (2005). The impact of cognitive absorption on perceived usefulness and perceived ease of use in on-line learning: an extension of the technology acceptance model. *Information & Management*, 42(2), 317-327.
- Sallis, J. F., Owen, N., & Fisher, E. B. (2008). Ecological Model of Health Behavior. In K. Glanz, B. K. Rimer, & K. Viswanath (Eds.), *Health behavior and health education: Theory, research, and practice*. San Francisco: Jossey-Bass.
- Samoocha, D., Bruinvels, D. J., Elbers, N. A., Anema, J. R., & van der Beek, A. J. (2010). Effectiveness of web-based interventions on patient empowerment: a systematic review and meta-analysis. *Journal of Medical Internet Research*, 12(2).
- Sarker, S., Lau, F., & Sahay, S. (2001). Using an Adapted Grounded Theory Approach for Inductive Theory Building About Virtual Team Development *The DATA BASE for Advances in Information Systems*, 32(1).
- Savolainen, R. (2014). Emotions as motivators for information seeking: A conceptual analysis. *Library & Information Science Research*, 36(1), 59-65.
- Scheffer, M., Westley, F., & Brock, W. (2003). Slow responses of societies to new problems: causes and costs. *Ecosystems*(6), 493-502.
- Schetter, C. D., & Dolbier, C. (2011). Resilience in the context of chronic stress and health in adults. *Social and Personality Psychology Compass*, 5(9), 634-652.
- Schouten, B. C., Meeuwesen, L., Tromp, F., & Harmsen, H. (2007). Cultural diversity in patient participation: the influence of patients' characteristics and doctors' communicative behaviour. *Patient Education and Counseling*, 67(1), 214-223.
- Scott, S., & Orlikowski, W. (2014). Entanglements in practice: Performing anonymity through social media.
- Seale, C. (1999). Quality in qualitative research. *Qualitative Inquiry*, 5(4), 465-478.
- Seegerberg, A., & Bennett, W. L. (2011). Social media and the organization of collective action: Using Twitter to explore the ecologies of two climate change protests. *The Communication Review*, 14(3), 197-215.

- Selwyn, N. (2006). Digital division or digital decision? A study of non-users and low-users of computers. *Poetics*, 34(4), 273-292.
- Seto, E., Leonard, K. J., Masino, C., Cafazzo, J. A., Barnsley, J., & Ross, H. J. (2010). Attitudes of heart failure patients and health care providers towards mobile phone-based remote monitoring. *Journal of Medical Internet Research*, 12(4).
- Setoyama, Y., Yamazaki, Y., & Namayama, K. (2011). Benefits of peer support in online Japanese breast cancer communities: differences between lurkers and posters. *Journal of Medical Internet Research*, 13(4).
- Shah, P., & Mountain, D. (2007). The medical model is dead-long live the medical model. *British journal of psychiatry*, 191, 375-377.
- Shklovski, I., Palen, L., & Sutton, J. (2008). *Finding community through information and communication technology in disaster response*. Paper presented at the Proceedings of the 2008 ACM conference on Computer supported cooperative work.
- Silvestre, A.-L., Sue, V. M., & Allen, J. Y. (2009). If You Build It, Will They Come? The Kaiser Permanente Model Of Online Health Care. *Health Affairs*, 28(2), 334-344. doi:10.1377/hlthaff.28.2.334
- Simpson, L. (2005). Community Informatics and Sustainability: Why Social Capital Matters. *The Journal of Community Informatics*, 1(2), 102-119.
- Smit, B., & Wandel, J. (2006). Adaptation, adaptive capacity and vulnerability. *Global environmental change*, 16, 282-292.
- Smith, A., & Stirling, A. (2010). The politics of social-ecological resilience and sustainable socio-technical transitions. *Ecology and Society*, 15(1), 11.
- Stadtler, M., Scharrer, L., Brummernhenrich, B., & Bromme, R. (2013). Dealing with uncertainty: Readers' memory for and use of conflicting information from science texts as function of presentation format and source expertise. *Cognition and Instruction*, 31(2), 130-150.
- Stake, R. (1978). The Case Study Method in Social Inquiry. *Educational Researcher*, 7(2), 5-8.
- Steinfeld, C., DiMicco, J., Ellison, N., & Lampe, C. (2009). *Bowling online: social networking and social capital within the organization*. Paper presented at the Proceedings of the fourth international conference on Communities and technologies.
- Steinfeld, C., Ellison, N., & Lampe, C. (2008). Social capital, self-esteem, and use of online social network sites: A longitudinal analysis. *Journal of Applied Developmental Psychology*, 29(6), 434-445.
- Stellefson, M., Chaney, B., Barry, A. E., Chavarria, E., Tennant, B., Walsh-Childers, K., . . . Zagora, J. (2013). Web 2.0 chronic disease self-management for older adults: a systematic review. *Journal of Medical Internet Research*, 15(2).
- Sterbenz, J. P., Cetinkaya, E. K., Hameed, M. A., Jabbar, A., Qian, S., & Rohrer, J. P. (2013). Evaluation of network resilience, survivability, and disruption tolerance: analysis, topology generation, simulation, and experimentation. *Telecommunication systems*, 52(2), 705-736.
- Stevenson, F. A., Barry, C. A., Britten, N., Barber, N., & Bradley, C. P. (2000). Doctor-patient communication about drugs: the evidence for shared decision making. *Social Science & Medicine*, 50(6), 829-840. Retrieved from <http://www.sciencedirect.com/science/article/B6VBF-46FPT4T-7/2/9dc2af2f2a48b37ccd8070865ca80461>
- Stewart, D., & Yuen, T. (2011). A systematic review of resilience in the physically ill. *Psychosomatics*, 52(3), 199-209.
- Stewart, G., Kolluru, R., & Smith, M. (2009). Leveraging public-private partnerships to improve community resilience in times of disaster. *International Journal of Physical Distribution & Logistics Management*, 39(5), 343-364.
- Stewart, K., & Williams, M. (2005). Researching online populations: the use of online focus groups for social research. *Qualitative Research*, 5(4), 395-416.

- Stinson, J., Wilson, R., Gill, N., Yamada, J., & Holt, J. (2009). A Systematic Review of Internet-based Self-Management Interventions for Youth with Health Conditions. *Journal of Pediatric Psychology, 34*(5), 495-510. doi:10.1093/jpepsy/jsn115
- Stokols, D., Lejano, R. P., & Hipp, J. (2013). Enhancing the resilience of human–environment systems: a social–ecological perspective. *Ecology and Society, 18*(1), 7.
- Storper, M., & Scott, A. J. (2009). Rethinking human capital, creativity and urban growth. *Journal of Economic Geography, 1*(1), 52.
- Strauss, A. (1987). *Qualitative Analysis for Social Scientists*. Cambridge: Cambridge University Press.
- Strauss, A., & Corbin, J. (1990). *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*: Sage.
- Street Jr, R. L., Makoul, G., Arora, N. K., & Epstein, R. M. (2009). How does communication heal? Pathways linking clinician–patient communication to health outcomes. *Patient Education and Counseling, 74*(3), 295-301.
- Streeton, R., Cooke, M., & Campbell, J. (2004). Researching the researchers: Using a snowballing technique. *Nurse Researcher, 12*(1), 35-46.
- Sturgeon, J. A., & Zautra, A. J. (2010). Resilience: a new paradigm for adaptation to chronic pain. *Current pain and headache reports, 14*(2), 105-112.
- Subrahmanyam, K., Reich, S. M., Waechter, N., & Espinoza, G. (2008). Online and offline social networks: Use of social networking sites by emerging adults. *Journal of Applied Developmental Psychology, 29*(6), 420-433.
- Takahashi, Y., Uchida, C., Miyaki, K., Sakai, M., Shimbo, T., & Nakayama, T. (2009). Potential Benefits and Harms of a Peer Support Social Network Service on the Internet for People With Depressive Tendencies: Qualitative Content Analysis and Social Network Analysis. *Journal of Medical Internet Research, 11*(3), e29. doi:10.2196/jmir.1142
- Tambe, P., & Hitt, L. M. (2012). The productivity of information technology investments: New evidence from IT labor data. *Information Systems Research, 23*(3-part-1), 599-617.
- Taylor, M., Wells, G., Howell, G., & Raphael, B. (2012). The role of social media as psychological first aid as a support to community resilience building. *Australian Journal of Emergency Management, The, 27*(1), 20-26.
- Teachman, J. D., Paasch, K., & Carver, K. (1997). Social capital and the generation of human capital. *Social Forces, 75*(4), 1343-1359.
- Thackeray, R., Neiger, B. L., Smith, A. K., & Van Wagenen, S. B. (2012). Adoption and use of social media among public health departments. *BMC public health, 12*(1), 242.
- The World Health Organisation. (2011). Global Status Report on NCDs. WHO. Retrieved from http://www.who.int/chp/ncd_global_status_report/en
- Thoits, P. A. (2011). Mechanisms linking social ties and support to physical and mental health. *Journal of Health and Social Behavior, 52*(2), 145-161.
- Thompson, L., Black, E., Duff, W., Black, N., Saliba, H., & Dawson, K. (2011). Protected health information on social networking sites: ethical and legal considerations. *Journal of Medical Internet Research, 13*(1).
- Thoren, E. M., Metze, B., Bühner, C., & Garten, L. (2013). Online support for parents of preterm infants: a qualitative and content analysis of Facebook ‘preemie’ groups. *Archives of Disease in Childhood-Fetal and Neonatal Edition, 98*(6), F534-F538.
- Tierney, K., Bevc, C., & Kuligowski, E. (2006). Metaphors matter: Disaster myths, media frames, and their consequences in Hurricane Katrina. *The Annals of the American Academy of Political and Social Science, 604*(1), 57-81.
- Tiggemann, M., & Polivy, J. (2010). Upward and downward: Social comparison processing of thin idealized media images. *Psychology of Women Quarterly, 34*(3), 356-364.
- Tomai, M., Rosa, V., Mebane, M. E., D’Acunti, A., Benedetti, M., & Francescato, D. (2010). Virtual communities in schools as tools to promote social capital with high schools students. *Computers & Education, 54*(1), 265-274.
- Toussaint, P., & Coiera, E. (2005). Supporting communication in health care. *International Journal of Medical Informatics, 74*, 779-781.

- Tracey, P., Phillips, N., & Jarvis, O. (2011). Bridging institutional entrepreneurship and the creation of new organizational forms: A multilevel model. *Organization Science*, 22(1), 60-80.
- Tracy, S. J. (2010). Qualitative quality: Eight “big-tent” criteria for excellent qualitative research. *Qualitative Inquiry*, 16(10), 837-851.
- Traud, A. L., Kelsic, E. D., Mucha, P. J., & Porter, M. A. (2011). Comparing community structure to characteristics in online collegiate social networks. *SIAM review*, 53(3), 526-543.
- Treem, J., & Leonardi, P. (2012). Social media use in organizations: Exploring the affordances of visibility, editability, persistence, and association. *Communication Yearbook*, 36, 143-189.
- Tsai, H.-T., & Bagozzi, R. P. (2014). Contribution behavior in virtual communities: cognitive, emotional and social influences. *MIS Quarterly*, 38(1), 143-163.
- Ungar, M. (2011). The social ecology of resilience: Addressing contextual and cultural ambiguity of a nascent construct. *American Journal of Orthopsychiatry*, 81(1), 1-17.
- Urquhart, C. (2013). *Grounded Theory for Qualitative Research: A Practical Guide*. Thousand Oaks: California Sage.
- Urquhart, C., & Fernández, W. (2013). Using grounded theory method in information systems: the researcher as blank slate and other myths. *Journal of Information Technology*.
- Urquhart, C., Lehmann, H., & Myers, M. (2010). Putting the ‘theory’back into grounded theory: guidelines for grounded theory studies in information systems. *Information Systems Journal*, 20(4), 357-381.
- Urquhart, C., Liyanage, S., & Kah, M. (2008). ICTs and poverty reduction: a social capital and knowledge perspective. *Journal of Information Technology*, 23(3), 203-213.
- Urquhart, C., & Vaast, E. (2012). *Building Social Media Theory from Case Studies: A new Frontier for IS Research* Paper presented at the International Conference of Information Systems 2012, Orlando.
- Vaast, E. (2007). What goes online comes offline: Knowledge management system use in a soft bureaucracy. *Organization Studies*, 28(3), 283-306.
- Vaast, E., Davidson, E., & Mattson, T. (2013). Talking about technology: the emergence of a new actor category through new media. *MIS Quarterly*, 37(4), 1069-1092.
- Vaast, E., & Kaganer, E. (2013). Social media affordances and governance in the workplace: An examination of organizational policies. *Journal of Computer-Mediated Communication*, 19(1), 78-101.
- Vaast, E., & Walsham, G. (2013). Grounded theorizing for electronically mediated social contexts. *European Journal of Information Systems*, 22, 9-25.
- Valenzuela, S., Park, N., & Kee, K. F. (2009). Is There Social Capital in a Social Network Site?: Facebook Use and College Students' Life Satisfaction, Trust, and Participation. *Journal of Computer-Mediated Communication*, 14(4), 875-901. doi:10.1111/j.1083-6101.2009.01474.x
- Valkenburg, P. M., Peter, J., & Schouten, A. P. (2006). Friend networking sites and their relationship to adolescents' well-being and social self-esteem. *CyberPsychology & Behavior*, 9(5), 584-590.
- Van Cleemput, K. (2010). “I’ll See You on IM, Text, or Call You”: A Social Network Approach of Adolescents’ Use of Communication Media. *Bulletin of Science, Technology & Society*, 30(2), 75-85.
- Van Der Velden, M., & El Emam, K. (2013). “Not all my friends need to know”: a qualitative study of teenage patients, privacy, and social media. *Journal of the American Medical Informatics Association*, 20(1), 16-24.
- Van Dijck, J. (2009). Users like you? Theorizing agency in user-generated content. *Media, culture, and society*, 31(1), 41.
- van Dijck, J. (2013). Facebook and the engineering of connectivity A multi-layered approach to social media platforms. *Convergence: The International Journal of Research into New Media Technologies*, 19(2), 141-155.

- Van Uden-Kraan, C. F., Drossaert, C. H., Taal, E., Seydel, E. R., & van de Laar, M. A. (2008). Self-reported differences in empowerment between lurkers and posters in online patient support groups. *Journal of Medical Internet Research, 10*(2).
- Van Uden-Kraan, C. F., Drossaert, C. H., Taal, E., Seydel, E. R., & van de Laar, M. A. (2009). Participation in online patient support groups endorses patients' empowerment. *Patient Education and Counseling, 74*(1), 61-69.
- Van Uden-Kraan, C. F., Drossaert, C. H., Taal, E., Shaw, B. R., Seydel, E. R., & van de Laar, M. A. (2008). Empowering processes and outcomes of participation in online support groups for patients with breast cancer, arthritis, or fibromyalgia. *Qualitative Health Research, 18*(3), 405-417.
- Vance, A., Elie-Dit-Cosaque, C., & Straub, D. W. (2008). Examining trust in information technology artifacts: the effects of system quality and culture. *Journal of Management Information Systems, 24*(4), 73-100.
- Vásquez-León, M. (2009). Hispanic farmers and farmworkers: social networks, institutional exclusion, and climate vulnerability in southeastern Arizona. *American Anthropologist, 111*(3), 289-301.
- Vilhauer, R. P. (2009). Perceived benefits of online support groups for women with metastatic breast cancer. *Women & health, 49*(5), 381-404.
- Vinson, T., Rawsthorne, M., & Cooper, B. (2007). Dropping off the edge: the distribution of disadvantage in Australia.
- Vodanovich, S., Sundaram, D., & Myers, M. (2010). Research Commentary-Digital Natives and Ubiquitous Information Systems. *Information Systems Research, 21*(4), 711-723.
- Von Krogh, G. (2012). How does social software change knowledge management? Toward a strategic research agenda. *The Journal of Strategic Information Systems, 21*(2), 154-164.
- Von Muhlen, M., & Ohno-Machado, L. (2012). Reviewing social media use by clinicians. *Journal of the American Medical Informatics Association, 19*(5), 777-781.
- Wagner, E. (1998). Chronic Disease Management: What Will It Take To Improve Care for Chronic Illness? *Effective Clinical Practice, August/September*(1), 2-4.
- Wagner, E., Austin, B., Davis, C., Hindmarsh, M., Schaefer, J., & Bonomi, A. (2001). Improving chronic illness care: translating evidence into action. *Health Affairs, 20*(6), 64-78.
- Wagnild, G., & Young, H. M. (1990). Resilience among older women. *Journal of Nursing Scholarship, 22*(4), 252-255.
- Wakefield, R., Leidner, D., & Garrison, G. (2008). Research Note-A Model of Conflict, Leadership, and Performance in Virtual Teams. *Information Systems Research, 19*(4), 434-455.
- Walker, B. H., Gunderson, L., Kinzig, A., Folke, C., Carpenter, S., & Schultz, L. (2006). A handful of heuristics and some propositions for understanding resilience in social-ecological systems. *Ecology and Society, 11*(1), 13.
- Walker, B. H., Holling, C., Carpenter, S., & Kinzig, A. (2004). Resilience, adaptability and transformability in social-ecological systems. *Ecology and Society, 9*(2), 5.
- Walker, B. H., & Salt, D. (2006). *Resilience thinking: Sustaining Ecosystems and People in a Changing World*. London: Island Press.
- Walks, R. A. (2001). The Social Ecology of the Post-Fordist/Global City? Economic Restructuring and Socio-spatial Polarisation in the Toronto Urban Region. *Urban Studies, 38*(3), 407-447. doi:10.1080/00420980120027438
- Walsham, G. (1995). Interpretive case studies in IS research: nature and method. *European Journal of Information Systems, 4*(2), 74-81. Retrieved from <http://dx.doi.org/10.1057/ejis.1995.9>
- Wang, H., & Wellman, B. (2010). Social connectivity in America: Changes in adult friendship network size from 2002 to 2007. *American behavioral scientist, 53*(8), 1148-1169.
- Wang, P., & Ramiller, N. (2009). Community Learning in Information Technology Innovation. *MIS Quarterly, 33*(4), 709-734.

- Wankel, C. (2009). Management education using social media. *Organization Management Journal*, 6(4), 251-262.
- Wasko, M. M., & Faraj, S. (2005). Why should I share? Examining social capital and knowledge contribution in electronic networks of practice. *MIS Quarterly*, 35-57.
- Weber, R. (2003). Editor's comment: the reflexive researcher. *MIS Quarterly*, 27(4), v-xiv.
- Webster, J., & Watson, R. (2002). Analyzing the past to prepare for the future: Writing a literature review. *MIS Quarterly*, 26(2).
- Weinert, C., Cudney, S., Comstock, B., & Bansal, A. (2011). Computer intervention impact on psychosocial adaptation of rural women with chronic conditions. *Nursing Research*, 60(2), 82-91.
- Welbourne, J. L., Blanchard, A. L., & Boughton, M. D. (2009). *Supportive communication, sense of virtual community and health outcomes in online infertility groups*. Paper presented at the Proceedings of the fourth international conference on Communities and technologies.
- Welch, E. W., Hinnant, C. C., & Moon, M. J. (2005). Linking citizen satisfaction with e-government and trust in government. *Journal of Public Administration Research and Theory*, 15(3), 371-391.
- Wellman, B. (2005). Community: from neighborhood to network. *Communications of the ACM*, 48(10), 53-55.
- Wellman, B., Boase, J., & Chen, W. (2002). The networked nature of community: Online and offline. *It & Society*, 1(1), 151-165.
- Wellman, B., Hasse, A., Witte, J., & Hampton, K. (2001). Does the Internet Increase, Decrease, or Supplement Social Capital?: Social Networks, Participation, and Community Commitment. *American behavioral scientist*, 45(3), 436-455. doi:10.1177/00027640121957286
- Wells, M. (2009). Resilience in rural community-dwelling older adults. *The Journal of Rural Health*, 25(4), 415-419.
- Wells, M. (2012). Resilience in older adults living in rural, suburban, and urban areas. *Online Journal of Rural Nursing and Health Care*, 10(2), 45-54.
- Wenger, E. (2000). Communities of Practice and Social Learning Systems. *Organization*, 7(2), 225 doi:10.1177/135050840072002
- Werner, E. (1995). Resilience in development. , 81-85. *Current directions in psychological science*, 4(3), 81-85.
- Western, J., Stimson, R., Baum, S., & Van Gellecum, Y. (2005). Measuring community strength and social capital. *Regional studies*, 39(8), 1095-1109.
- Whetten, D. A. (1989). What Constitutes A Theoretical Contribution? *Academy of Management. The Academy of Management Review*, 14(4), 490-491. Retrieved from <http://ezproxy.lib.monash.edu.au/login?url=http://proquest.umi.com/pqdweb?did=141443&Fmt=7&clientId=16397&RQT=309&VName=PQD>
- Whittemore, R., Jaser, S., Guo, J., & Grey, M. (2010). A conceptual model of childhood adaptation to type 1 diabetes. *Nursing outlook*, 58(5), 242-251.
- Whittemore, R., Jaser, S. S., Jeon, S., Liberti, L., Delamater, A., Murphy, K., . . . Grey, M. (2012). An internet coping skills training program for youth with type 1 diabetes: six-month outcomes. *Nursing Research*, 61(6), 395.
- Wicks, P., Massagli, M., Frost, J., Brownstein, C., Okun, S., Vaughan, T., . . . Heywood, J. (2010). Sharing health data for better outcomes on PatientsLikeMe. *Journal of Medical Internet Research*, 12(2).
- Wilkinson, R. G., & Pickett, R. (2009). *The Spirit Level: Why More Equal Societies Almost Always Do Better*. London:: Penguin.
- Williams, D. (2006). On and off the 'net: Scales for social capital in an online era. *Journal of Computer-Mediated Communication*, 11(2), 593-628.
- Williams, K., & Bond, M. (2002). The roles of self-efficacy, outcome expectancies and social support in the self-care behaviours of diabetics. *Psychology, Health & Medicine*, 7(2), 127-141.

- Winkelman, W. J., Leonard, K. J., & Rossos, P. G. (2005). Patient-perceived usefulness of online electronic medical records: employing grounded theory in the development of information and communication technologies for use by patients living with chronic illness. *Journal of the American Medical Informatics Association*, 12(3), 306-314.
- Winkworth, G., Healy, C., Woodward, M., & Camilleri, P. (2009). Community capacity building: Learning from the 2003 Canberra bushfires. *Australian Journal of Emergency Management, The*, 24(2), 5.
- Winter, D. D. N., & Koger, S. M. (2011). *The Psychology of Environmental Problems: Psychology for Sustainability*: Psychology Press.
- Wright, K. B. (2012). Emotional support and perceived stress among college students using Facebook. com: an exploration of the relationship between source perceptions and emotional support. *Communication Research Reports*, 29(3), 175-184.
- Yar, M. (2004). 'Community': Past, Present, and Future. *Journal of social issues*, 2(1).
- Yates, D., Wagner, C., & Majchrzak, A. (2010). Factors affecting shapers of organizational wikis. *Journal of the American Society for Information Science and Technology*, 61(3), 543-554.
- Yeung, E. W., Arewasikporn, A., & Zautra, A. J. (2012). Resilience and chronic pain. *Journal of Social and Clinical Psychology*, 31(6), 593-617.
- Yin, R. K. (1981). The case study crisis: some answers. *Administrative Science Quarterly*, 26(1), 58-65.
- Yin, R. K. (2003). *Case Study Research: Design and Methods* (3rd ed.). Newbury Park, CA: Sage.
- Yin, R. K. (2014). *Case Study Research: Design and Methods*. Thousand Oaks, California: SAGE.
- Young, A., Miranda, S., & Summers, J. (2013). *Emotional Labor in the Moderation of Online Communities*. Paper presented at the Twelfth Annual Workshop on HCI Research in MIS (SIGHCI 2013), Milan, Italy.
- Zammuto, R., Griffith, T., Majchrzak, A., Dougherty, D., & Faraj, S. (2007). Information technology and the changing fabric of organization. *Organization Science*, 18(5), 749-762.
- Zautra, A., Arewasikporn, A., & Davis, M. (2010). Resilience: Promoting well-being through recovery, sustainability, and growth. *Research in Human Development*, 7(3), 221-238.
- Zautra, A., Hall, J., & Murray, K. (2008). Community development and community resilience: An integrative approach. *Community Development*, 39(3), 130-147.
- Zeng, X., & Wei, L. (2013). Social ties and user content generation: Evidence from Flickr. *Information Systems Research*, 24(1), 71-87.
- Zhang, W., & Watts, S. (2008). Online communities as communities of practice: a case study. *Journal of Knowledge Management*, 12(4), 55-71.
- Zhao, S., Grasmuck, S., & Martin, J. (2008). Identity construction on Facebook: Digital empowerment in anchored relationships. *Computers in Human Behavior*, 24(5), 1816-1836.
- Zhou, T. (2011). Understanding online community user participation: a social influence perspective. *Internet Research*, 21(1), 67-81.
- Zolnierok, K. B., & DiMatteo, M. R. (2009). Physician Communication and Patient Adherence to Treatment: A Meta-Analysis. *Medical Care*, 47(8), 826-834. Retrieved from http://journals.lww.com/lww-medicalcare/Fulltext/2009/08000/Physician_Communication_and_Patient_Adherence_to.2.aspx

APPENDIX 1- ETHICS: EXAMPLE OF EXPLANATORY STATEMENT AND CONSENT FORM

Explanatory Statement

20 April 2012

Title: Understanding the role of social media in community resilience

This information sheet is for you to keep.

My name is Hamid Pousti and I am conducting a research project with Professor Frada Burstein and Associate Professor Henry Linger, researchers at the Caulfield School of Information Technology, towards a PhD at Monash University. A PhD involves writing a thesis that is equivalent to a short book.

You are invited to take part in this study. This Explanatory Statement tells you about the research project. It explains what the research is about and what involvement means for you. Please read this Explanatory Statement carefully before deciding whether to participate. You may like to talk about it with a family member or friend. You can also contact the research team to ask about anything that you don't understand or if you want to know more about the project. You can find contact details of the research team at the end of this statement.

Why participate in this research?

Communication is an essential component in human life. We are able to socialise and discover new ideas through communication with different groups of people such as our family members, friends and community. Communicating via social media can however be a complex process resulting in various outcomes.

The management of chronic conditions requires ongoing and effective interactions between patients, carers and health professionals. It is therefore important to understand the difficulties people with chronic conditions may face in communicating their health needs and identifying ways to improve communication between those involved in managing chronic conditions.

The reason I invite you to participate in this research is because you are involved in the management of a chronic condition and your experiences in this area can provide valuable insights into the complexity of managing a chronic condition(s).

The aim/purpose of the research

The aim of this study is to understand how people with chronic conditions and their carers use various forms of communication tools including social media to manage their conditions. It also aims to gain an understanding of the role these types of technologies can play in supporting in the management process.

Possible benefits

There will be no direct benefits for people who take part in this study. However, from a broader perspective, findings from this research could provide a better understanding of how people with chronic conditions interact with technology to manage their condition. This study will assist the design and development of better communication tools to support patients, their families, and health professionals manage chronic conditions.

Who can participate?

To participate in this study you will need to:

- Have a chronic condition for more than one year OR
- Being involved in the management or supporting a patient with chronic condition for more than one year

What does participation in the research involve?

You will be asked to participate in a focus group session. These focus groups will be conducted in May and June 2012. Each focus group will involve up to 10 participants and will take about one and half hours. The purpose of the focus group is to collect information about issues concerned with communication in the management of chronic conditions. A facilitator will moderate the discussions. With your permission, the focus group will be audio recorded and supplemented with written notes, taken by another researcher present in the room.

Alternatively, you may be asked to participate in a face to face interview with the researcher. The purpose of the interview is also to collect information about issues concerned with communication in the management of chronic conditions and it takes about one hour.

Reimbursement

Each participant who takes part in the focus group session will receive a gift card valued at \$30.

Inconvenience/discomfort

Some participants may incur some level of discomfort during this research. Potentially participants may experience some level of emotional discomforts by talking about their unpleasant experiences, or they may feel distressed by being exposed to unpleasant experiences of other participants.

If you are distressed by your participation, you are encouraged to seek support from the services listed at the end of this Statement.

You can withdraw from the research

Participation in this research project is voluntary. If you do not wish to take part, you don't have to. Even if you consent to participate and later change your mind, you are free to withdraw from the project at any stage of this study. Information that you have contributed to the project can be withdrawn. However, withdrawal can only occur before your approval of the focus group transcripts.

Confidentiality

Information that is collected during the focus group discussions will only be used for the purpose of this study and great care will be taken to ensure that individuals' identities are protected. To ensure the collected data is treated confidential, the transcript of discussions will be presented to you for approval before it can be used in this research.

Moreover, the collected information will be aggregated to ensure participants' identity remain anonymous when the data is published.

Storage of data

Data collected will be stored in accordance with Monash University regulations, kept on University premises, in a locked filing cabinet for 5 years.

Results

If you would like to be informed of the aggregate research finding, please contact Hamid Pousti [REDACTED]. The findings are accessible no later than 6 months after data collection.

Consent Form

Title: *Understanding the role of social media in community resilience*

NOTE: This consent form will remain with the Monash University researcher for their records

I agree to take part in the Monash University research project specified above. I have had the project explained to me, and I have read the Explanatory Statement, which I keep for my records. I understand that agreeing to take part means that:

I agree to be interviewed in a focus group by the researcher Yes No

I agree to allow the focus group be audio-taped Yes No

I agree to make myself available for a further interview if required Yes No

I understand that my participation is voluntary, that I can choose not to participate in part or all of the project, and that I can withdraw at any stage of the project without being penalised or disadvantaged in any way.

I understand that any data that the researcher extracts from the focus group / questionnaire / survey for use in reports or published findings will not, under any circumstances, contain names or identifying characteristics.

I understand that I will be given a transcript of data concerning me for my approval before it is included in the write up of the research.

I understand that any information I provide is confidential, and that no information that could lead to the identification of any individual will be disclosed in any reports on the project, or to any other party.

I understand that data from the focus group will be kept in a secure storage and accessible to the research team. I also understand that the data will be destroyed after a 5 year period unless I consent to it being used in future research.

Participant's name

Signature

Date

APPENDIX 2- SAMPLE QUESTIONS OF SEMI-STRUCTURED INTERVIEWS

Topics covered in focus groups/interview discussions:

1. Purposes of communication in the management of arthritis
2. The influence of social media on social interaction?
3. When communication is necessary in the management process
4. How could social media support communications?
5. Forms of interactions between actors in the management process
6. Challenges of interactions between actors
7. Tools and technologies used by actors for communication
8. Why those social media are used by actors for communication
9. How social media are used by actors for interactions
10. How the use of social media can facilitate the management process
11. What are the challenges of social media

APPENDIX 3– REFLECTIVE FRAMEWORK

Methodological Implications of Social Media As a Research Setting For Is Healthcare Studies: Reflections from a Grounded Theory Study

Abstract

Over the last decade, social media environments have increasingly become an attractive research setting for Information Systems researchers. However, the methodological implications of this research setting for IS studies, are still not fully understood. In this paper we develop and present a framework to reflect on a recent qualitative healthcare IS study that uses social media as a research setting. We argue that using social media as a research setting in qualitative IS studies can have implications for the contextualisation of the study (implications for the research paradigm), defining research setting (implications for research design), theoretical sampling (implications for data collection and data analysis), and research ethics (implications for research design). With the popularity and growth of social media as a research setting in healthcare IS studies, we conclude by calling for an extensive re-examination of methodological practices to meet the challenge of researching of social media settings in healthcare.

Keywords

Social media, Research setting, Grounded theory Method, Healthcare IS, Interpretative paradigm

INTRODUCTION

Over the last decade or so, social media has been increasingly recognised as a phenomenon that has rapidly found its way into different aspects of people’s daily lives (Kaplan & Haenlein, 2010). Healthcare systems around the world are also influenced by the unique application of these technologies (Hawn, 2009). The use of social media in healthcare is clearly on the rise, and it is likely to become an increasing fact of life for millions of patients and practitioners around the world (Fichman et al., 2011) . As such, social media in healthcare has become an increasingly attractive research setting to both professionals and academics, including Information Systems (IS) researchers (Urquhart & Vaast, 2012).

In traditional qualitative research, the phenomena under study are observed and investigated in their natural settings. This means that the ordinary events and behaviours of participants are studied in their everyday social, cultural, and political contexts (Marshall & Rossman, 2011). This process generally involves identifying the boundaries where researchers can

interact with participants and observe them, allowing for the gathering of sensory data such as what is seen, felt, heard, and even tasted or smelled (Given, 2008). However, social media represents unique characteristics that make it different from traditional research settings. These characteristics are mainly attributed to the new ways that social media afford participants to interact and communicate with each other (Kietzmann et al., 2011), enable them to generate contents that are rapidly and easily accessible (Van Dijck, 2009), and support the ways they can create and immerse themselves in virtual social contexts (Franceschi, Lee, Zanakis, & Hinds, 2009).

These characteristics are particularly attractive to the process of the management of chronic disease in healthcare. In fact, managing chronic illness requires ongoing interactions between many parties including individuals (e.g. patients, carers), health professions, and wider community, and social media allows these interaction to be more autonomous and take place beyond clinical settings, into a wider community (Greenhalgh, 2009) . This makes social media a unique and attractive research setting in healthcare for researchers who seek evidence that is more community based and not confined to the interaction of people in clinical settings. Given the interest of the discipline in social media as a research setting (Vaast & Walsham, 2013) and the need to conduct more IS research in healthcare (Fichman et al., 2011) , we argue that social media settings do not conform with the traditional notion of qualitative research contexts. It is therefore important for IS researchers to reflect on the type of evidence they obtain when they use social media as their research settings, and to what extent their methodological practices are altered by such settings.

The focus of this paper is on the methodological implications of using social media as a research setting for healthcare IS studies. The purpose here is to understand how such a research setting can be used as legitimate source of qualitative data in such IS studies. In doing so, a reflective framework is used to critically assess and reflect on a recent empirical interpretative study in healthcare, namely in the management of chronic disease, where social media is used as major sources of data. Three research questions were formulated for the paper: *1) Does social media as a research setting support interpretative IS researchers to stay faithful to the principles of interpretative studies? 2) What are the implications of social media as a research setting for research design? 3) Does social media as a research setting support grounded theory in healthcare IS studies?*

REVIEW OF THE RELEVANT LITERATURE

Recent studies show that social media are increasingly used by patients and practitioners for a variety of healthcare activities, from seeking and sharing health related information to education and getting support from peers (e.g. Hackworth & Kunz, 2010). The potential role of social media in the management of chronic disease is also highlighted in some recent

studies. As Nordfeldt et al. (2010) point out, the modern management of chronic illness requires that patients and carers to have access to continuous support and learning opportunities and social media has great potential in this area. A recent study by Stellefson et al. (2013) shows that social media can facilitate novel approaches for empowering, engaging, and educating patients with chronic disease through better communication and providing opportunities for making better clinical decisions

However, from the IS perspective, most of these studies lack theoretical foundations that could explain the complexity of interaction between technology and people (Urquhart et al., 2010; Whetten, 1989). In fact, despite the growing body of research that shows the potential contribution of social media in healthcare activities, as Chiasson et al. (2007) explain, most of these studies are based on the principles of Medical Informatics (MI) where the focus is on assisting clinical users (e.g., physicians, nurses, pharmacists) to be more efficient in delivering healthcare services. This approach not only downplays the role of patients as the major consumers of healthcare services (Davis et al., 2005) and dismisses their perspectives, as Chiasson et al. (2007) argue, it also lacks the theoretical foundation that could heighten our understanding of the social and organizational facets of IT in healthcare.

Agarwal et al. (2010) contend that the importance of ICT in healthcare is expanding globally, as it increasingly plays a significant role in making healthcare more affordable and broadening its reach. They argue that the significant role of IT in modern healthcare warrants more attention from IS researchers, especially in three areas: health IT design, measurement of health IT, and extending the traditional realm of health IT (Agarwal et al., 2010). They explain that the idiosyncratic roles of online health communities and social networks in extending the traditional realm of health IT calls for further attention from IS researchers, so they can take advantage of the opportunities that social media as a research setting for developing methods and theories in healthcare from an IS perspective. This notion is echoed by Fichman et al. (2011) as they argue for more attention from the IS community to seek the opportunities and challenges that social media can offer IS researchers to understand health IT issues.

REFLECTIVE FRAMEWORK

The purpose of the reflective framework presented below was to provide a set of criteria to help us understand the implications of using social media as major sources of evidence for a recent healthcare IS empirical study. As such, the framework had to provide a set of criteria relevant to the methodology used in the empirical study. So, in order to construct the framework, there was a need to identify those studies that were principally and methodologically similar or close to the healthcare IS empirical study. By focusing on reputable IS publications, it was ensured that the framework is grounded in high quality literature and also it provides a relevant set of criteria for reflection. In other words, a

purposeful sampling approach was taken to choose the relevant IS publications for developing the framework.

An overview of the empirical healthcare IS study

The purpose of the empirical study under reflection was *to gain a deeper understanding of how people involved in complex process of the management of chronic disease could use social media to build healthcare communities that are resilient*. Our research was an interpretative qualitative study. In our view it was essential to take an interpretive approach, since in the management of chronic disease, the emergence of community and its attributes (e.g. resilience) are deeply embedded in actors' subjective understanding of the management process and its dynamics.

The study, was designed as an interpretative case study to take advantage of the flexibility and the strong exploratory nature of the case study method (Flyvbjerg, 2011) . The data collection process, and data analysis of the study, was informed by grounded theory method (GTM). The coding process mainly followed the three level of Glaserian method of coding of open coding, selective coding, and theoretical coding (Glaser 1978). Informed by the goal of the research, data was collected mainly from social media sources, however, they were complemented with other sources of data from focus groups and interviews which provided valuable insight into social media practices in these patient communities. Table 1 shows the major sources of data used in the study

Table 1. Data sources used in empirical healthcare IS study

Data source	Numbers of items/participants	Types
Arthritis forum	48 stories	19 patient, 21 carer, 5 nurse, 1 physiotherapist, 1 rheumatologist
Diabetics forum	64 stories	36 patient, 13 carer, 9 nurse, 1 GP, 4 social worker, 1 allied health
Depression forum	29 stories	21 patient, 8 carer
Asthma forum	20 stories	16 patient, 3 carer, 1 nurse
Breast cancer forum	31 stories	23 patient, 4 family, 4 nurse,
Focus group	10 participants	10 Arthritis patient

Our data collection and analysis was informed by GTM as the method allowed the study to take advantage of the flexibility of coding while still maintaining the rigour (Glaser, 1978). The

choice of grounded theory approach was entirely appropriate because no theoretical studies existed in this area, so as Glaser (1978) points out, grounded theory is an appropriate choice for exploring and theorising unknown phenomenon. – This is also the core concern of the IS discipline, and is a major issue in social media studies (Urquhart and Vaast 2012). The GTM approach also helped the study to incorporate the complexities of the management process (i.e. the complex interaction of multiple parties involved in the management of chronic diseases, influenced by social their relations, cultural background, and technology advancements) into our understanding of the concept of resilience. Table 2 provides an overview of the characteristics of our empirical healthcare IS study. We used these characteristics as concepts to guide our theoretical sampling and to help us identify the most relevant IS publications that could be used to develop or framework.

Table 2. The methodological structure of the target healthcare IS study

Research feature	Approach taken in the study
Epistemology	Hermeneutical, interpretative
Research approach	Qualitative
Methodology and design	Case study design
Data collection approach	Constant comparison - informed by Grounded Theory Method
Data analysis approach	Three levels of Glaserian coding - informed by Grounded Theory Method

Foundation of the reflective framework

Because a qualitative interpretive approach was taken, it was essential to make sure that the framework used for reflection provided an holistic means of assessing the empirical study. In other words, the framework should not provide only a small window for the assessment of the empirical study, but cover its entirety. In a qualitative interpretative study, all elements and phases of the study are interdependent and therefore, partial assessment does not provide a useful insight of its quality (Denzin & Lincoln, 2011). In order for us to understand the implications of using social media as source of data, it was essential to investigate how the decision of using social media as a research setting might also affect other aspects of the study and, for example, not just the data collection process. Therefore, in developing our reflective framework, literature that could provide assessment criteria for each aspect of the empirical study was sought. This perspective led to the development of a framework by which a holistic approach could be taken to understand the implications of social media for our healthcare IS

study. Table 3 presents the methodological breakdown of the empirical healthcare IS and the publications adopted to develop the reflective framework.

Table 3. Foundation of the reflective framework

Research feature	Research approach	Source of assessment criteria
Epistemology	Hermeneutics interpretative	Klein and Myers (1999)
Research approach	Qualitative	Eisenhardt (1989)
Methodology and design	Case study	Walsham (1995) Urquhart and Vaast (2012)
Data collection approach	Constant comparison - informed by GMT	Vaast and Walsham (2013)
Data analysis approach	Three level of GMT coding (Glaserian)	Urquhart and Fernandez (2013)

Mingers (1984) and Laverly (2003) classify interpretive studies into four categories of phenomenology, ethnography, philosophy of language, and hermeneutics. Among these four, hermeneutics is the closest interpretative philosophy to the way the empirical healthcare IS was conducted. Therefore, the seminal article by Klein and Myers (1999) was used as the overarching set of criteria for the reflecting on the research paradigm.

In their article, Klein and Myers (1999) present seven principles for conducting hermeneutics interpretative research in IS, in that, they provide a valuable set of criteria for assessing the quality of interpretivist studies in IS. While Klein and Myers (1999) seven principles are interdependent, they argue that researchers need to work out themselves how and which of the principles apply in any particular situation. As such, only those principles were considered for the framework that we believed are the most useful criteria for assessing the empirical study. In other words, it was in our particular interest to only use those principles by which we could gain a better understanding of how social media as a research setting may affect our interpretative study.

The assessment of the research methodology and design was influenced by two seminal IS articles, : Walsham (1995) and Eisenhardt (1989). We were also influenced by Urquhart and Vaast (2012)'s observations on researching social media settings. Walsham (1995) is one of the seminal papers in IS for those who intend to conduct an interpretative case study. In his article, Walsham specifically focuses on the challenges and requirements of an interpretive

case study and provides a set of criteria for conducting and evaluating case studies conducted within the interpretative paradigm. Some of the concepts discussed by Walsham in his article such as ‘thick description’ and some of the challenges he mentions like the ‘role of researcher’ in interpretative case studies, found to be useful for understanding of the methodological implications of social media as a research setting for the empirical study.

Eisenhardt (1989) is perhaps one of the most cited articles by those who design their studies as a case study. Ironically, Eisenhardt (1989) is widely used as a guide in many interpretative IS studies although she explicitly states her epistemological position as positivism. Therefore, many of her instructions on how to conduct a case study would not be acceptable to many interpretive researchers, however; her views on methods of collecting and judging qualitative data in case studies (e.g. constant comparison) are widely shared and accepted by interpretative researchers. The value of Eisenhardt (1989) article to the framework is the way she explains and scrutinized the implications of data collection (either qualitative or quantitative) for the final product (theory as a desirable final product) in a case study research.

Followed by Eisenhardt (1989) and Walsham (1995), some of recent IS publications turn their attention to more contemporary issues of case study design in IS studies. Urquhart and Vaast (2012) discuss the major challenges of building theory for social media and provide recommendations and guidelines on how IS researchers could address those challenges. For example, they provide clear and useful insights on the theoretical basis of social media studies in IS discipline. Especially, their article makes contributions in the development of the framework in three fronts. First, the focus of their article is building theory for social media. Second, they discuss the challenges of case study design for social media theory building studies in IS. Third, they provide insight into the nature of the data that IS researcher can obtain from social media as a research setting. While, Urquhart and Vaast (2012) highlight some of the contemporary trends in IS studies and the associated challenges for IS researcher, they provide recommendations and guidelines for IS researchers on how to deal with those challenges and assess the quality of their studies.

The endeavor was to find useful criteria for reflecting on our approaches to data collection and analysis, led use to a recent and interesting papers by Vaast and Walsham (2013) and Urquhart and Fernández (2013). The most interesting aspect of Vaast and Walsham (2013) paper is the way they discuss how grounded theory and social media as a research setting can integrated into a qualitative IS study. They describe social media as electronically mediated social contexts in which interactions and activities of actors are largely or completely computer-mediated. Vaast and Walsham (2013) argue that social media constitute research settings that are especially important and intriguing for IS researchers. The specific focus of their article is on the opportunities and challenges that social media as a research setting can bring to IS

studies, specifically for those researchers who employ grounded theory for their method of data collection and analysis. By analysis a number of important IS studies that uses social media setting as sources of their data, Vaast and Walsham (2013) develop a set of guidelines and recommendation for IS researchers to maintain the quality of their studies when they combine social media as a research setting and grounded theory method.

While Vaast and Walsham (2013) focus are mainly on the implications of social media as a research setting for IS studies, Urquhart and Fernandez (2013) provide a more clear and structured guideline for IS researchers on how to use grounded theory in their studies and how to avoid misconceptions about grounded theory method. Urquhart and Fernandez (2013) explain the characteristics of a rigor grounded theory approach and discuss how IS researchers can assess the quality of their study by understanding misconceptions about GTM. These two articles provided a useful set of criteria for us to firstly, assess and reflect on the data collection and data analysis approach and secondly, to understand the implications of social media as a research setting for GTM approach.

This section has explained the foundation of our reflective framework and demonstrated how a theoretical sampling approach assisted to lay the foundation for the framework. While the theoretical sampling used in this paper was not exhaustive and other seminal IS publications (e.g. Cavaye, 1996; Darke, Shanks, & Broadbent, 1998; Orlikowski, 1993) could also be used to, we argue that the high quality of the publications used in the framework have given us confidence that the framework has a strong and reliable intellectual and methodological basis. This is a crucial point, as the outcome of using this framework indicates the extent to which we make contributions to a better understanding of the implications of social media as a research setting in healthcare IS studies. Figure 1 provides an overview of the framework.

ANALYSIS AND KEY FINDINGS

The reflective framework applied to our healthcare IS study to answer the three major research questions posed by this paper. In applying the framework, the focus was not only on participants, but also the process of gaining evidence and the means by which those processes led to the next step of study. For example, in examining whether social media as a research setting could help to contextualise the empirical study, it was also in interest of this study to know that to what extent this contextualisation is possible and whether it assists to produce a 'thick description' to deal with the sheer volume of data. The similar process was carried to examine each question against the relevant criteria within each category of the framework in order to understand not only the impact of social media as a research setting in each category, also to delineate its influence on other aspects of the empirical study based on other categories of the framework.

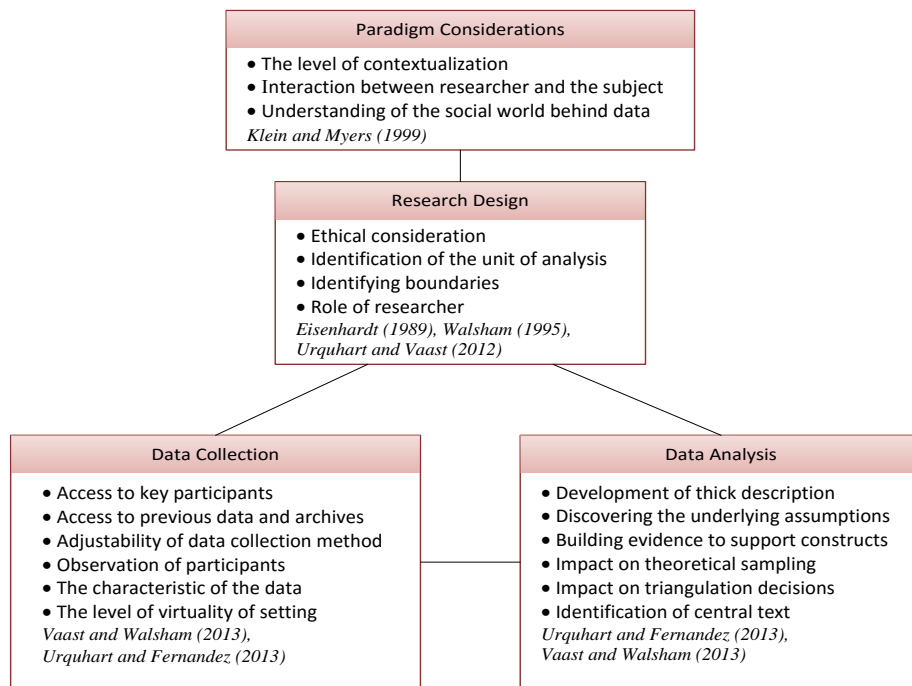


Figure 1- Reflective Framework

To reflect precisely on the empirical study, it was also necessary to have a clear understanding of the unit of analysis used in the study and to know what the characteristics of the unit of analysis are. Urquhart and Vaast (2012) argue that in a social media as a research setting, what actually researchers use as the unit of analysis is ‘digital text’. According to Urquhart and Vaast (2012), a digital text has nine major characteristics of being digital, contained on a web, co-produced, ephemeral, embeds other discourses, contains image, contains video, lack of context, and linguistic innovative.

Concurring with Urquhart and Vaast (2012) we argue that in the context of healthcare, a digital text exhibits two additional characteristics of ‘emotional’ and ‘high degree of intricacy’. Our empirical study of patients and carers online forums and social networking sites shows that most of the posts and chat threads can be seen as digital texts loaded with ‘emotions’ where patients and carers mainly express their angers, their sense of frustrations, uncertain feelings, and show their sadness in their exchanges. This is in fact a genuine and effective strategy used by patients and carers to attract other people’s attention and support.

The empirical study also shows that most of the messages posted on the online patients/carers forums as well as the chat threads there, were multi-faceted with high level of details. This characteristic was more or less identifiable in almost all of the digital texts we collected. In some of those text participants were talking about two or three or more things that were distinguishable but some of the posts were hard to understand as they were convoluted.

These characteristics of the digital text in healthcare social media settings can be attributed to a number of reasons including the level of uncertainties related to disease (Wagner et al., 2001), medical jargons that are not easily understandable to lay people (Schouten et al., 2007), and the impact of technology on the ways people engage themselves in a virtual social environments (Orlikowski, 2010). The methodological implications of these two characteristics for our healthcare IS studies will be discussed in the following section.

Key findings

Research setting (Reflection on the research design): In our empirical healthcare IS studies, we noticed that the traditional concept of ‘research setting’ for qualitative studies is blurred. Identifying the boundaries within which participant could be observed was a difficult task as many of the social interaction in virtual environment were permeable to the real world settings. Besides, it was hard to get a deep understanding of the influence of social, cultural, and political behavior of participants on the construction of their meanings as it was nearly impossible to gather sensory data that would help us to have a more accurate and clearer interpretation of events and interactions in social media settings.

Contextualisation (Reflection on the research paradigm): As Klein and Myres (1999) point out, contextualisation requires that the subject matter be set in its social and historical context so that the intended audience can see how the current situation under investigation emerged. They argue that contextualisation is the necessary element of an interpretative study as researchers should observe and acknowledge the constantly changing patterns of the relationships between people and technology.

In the empirical healthcare IS study, our experience shows that it is nearly impossible to position the subject of study in its social and historical context based on the data collected from social media as a research setting. Two aspects of our social media as a research setting were the major contributors to this challenge. First, the setting exhibits a high level of virtuality. Second, many of the messages and chat threads were highly intricate and the research setting would not afford ways to unwrap and demystify those digital texts.

Interaction with participants (Reflection on the research paradigm): Klein and Myers (1999) argue that participants are interpreters and as they interact with researchers, they alter their horizons by the appropriation of concepts used by researchers. According to Walsham (1995) when researchers do not interact with participants in a sufficient level and only rely on historical secondary data, the impact of their view on participants’ perspective will be weakened and therefore, it is unlikely for alternative viewpoints be formed.

Our experience shows that there are a number of challenges when it comes to the interaction between researchers and participant in social media research settings. First, due to the

virtuality of the environment, it is difficult to establish a trust relationship between researchers and participant. We found patients and carers felt uncomfortable in sharing their feelings and talk about their conditions with people they had never met in real world and are not “part of their club”. Second, social media settings used in the study offered limited tools for interaction, and most interactions were in the form of plain texts. Third, in most occasions the researchers had only access to historical data and archives as many of online interactions were taking place in different time zones.

Ethical issues (Reflection on the research design): Vaast and Walsham (2013) and Urquhart and Vaast (2012) argue that IS grounded theorists who use social media as a research setting for their data collection face some ethical dilemmas. The dilemma is that IS researches enjoy the opportunity of widely accessing to online interactions but at the same time this opportunity can blur the perception of what is private and what public information is.

The major ethical challenges in the study were twofold. First, it was necessary for the researchers to make sure that the privacy and anonymity of participants were protected. In doing so, not only the identity of participants had to be protected through conventional methods, it was also necessary to protect their identity through the anonymity of the setting itself. These would made the report on our research less traceable to the readers as it was not possible to create a ‘thick description’ of the research context, and as Walsham (1995) puts, the report was facing the risk of ending up with reporting ‘soft’ human issues.

The second ethical challenge encountered was that there was no means to know whether the participants expect privacy from their exchanges and what level of privacy they might expect. For example, in many occasions after data from a participant was collected, the participant decided to withdraw from the research setting and her posts disappeared. Considering the sensitivity of health related data, the question was whether those already collected from that participant could be used in the study or not.

Theoretical sampling (Reflection on the data collection and analysis): As Urquhart and Vaast (2012) and Urquhart and Fernandez (2013) contend, social media as a research setting offers new and unique opportunities as well as new challenges for theoretical sampling especially when the researchers employ grounded theory as their method of sampling and analysis.

We believe that the ‘emotional’ characteristic of digital texts provided an interesting opportunity for the theoretical sampling. It was noticed that the emotional aspect of digital texts represent extreme situations and as Eisenhardt (1989) puts, make the phenomenon “transparently observable”. As such, many of digital texts used in the study provided us with a fruitful way of filling theoretical categories.

However, as Glaser and Strauss (1967) point out, theoretical sampling is about giving depth to the understanding of constructs and investigating the underlying assumptions that led to the creation and interpretation of those constructs. The study shows that due to a high level of virtuality of the research setting, as well as the lack of the possibility of effective interaction with participants; put great limits on the ability to deepening the investigation of participants' perspectives.

DISCUSSION

The analysis for this study is carried out with three major questions in mind. The first question was 'Does social media as a research setting support interpretative IS researchers to stay faithful to the principles of interpretative studies?' In answering this question we argue that IS researchers who choose to study healthcare related problems through social media settings can still conform with the principle of an interpretative study. However, they potentially have to face two challenges of 'contextualisation' and 'interaction with participants'. This is consistent with Urquhart and Vaast (2012) as they highlight the issue of contextualisation in social media research settings by stressing that the lack of context in social media research settings is an important issue that social media researchers have to address. They argue that without context still social media researchers can infer patterns but they need to search for 'central texts' to set meaningful boundary around their subject.

Although many studies show that social media facilitate the interaction between participants (e.g. boyd, 2010) but in the context of interpretative research Hara and Hew (2007) also noticed the issue of interaction between them - as the researchers - and their participants in their study of online community of nurses. They mention that in their study it was necessary for them to interact more effectively with their participants, as they needed to get a deeper understanding of difficulties of nurses' workplaces. To get such an understanding, Hara and Hew (2007) argue that researchers can still interact with their participants by engaging asynchronously and synchronously in participants' linguistic behavior (what is said and how) through various kinds of computer-mediated communication.

The second question to answer was 'What are the implications of social media as a research setting for research design?' To answer this question, we argue that the most significant issue we noticed is concerned with research ethics. Stewart and Williams (2005) discussed this issue in detail, as they argue that the speed, ease and low cost of social media settings make them appealing options for researchers. However, they believe that the ethical complexity of virtual settings requires that old ethical guidelines and procedures to be revisited. They argue that the time has come to reframe our ethical guidelines in the styles of data collection and also anticipate those guidelines to be carefully integrated in the design stage of the research.

The third question was ‘Does social media as a research setting support grounded theory in healthcare IS studies?’ In answering this question the focus was turned on theoretical sampling as one of the tenets of GTM (Glaser & Strauss, 1967). We argue that social media as a research setting pose both opportunities and challenges for IS grounded theorist who choose healthcare contexts. The opportunities are more related to the nature of the data that can be collected from healthcare social media as a research setting. Da Cunha and Orlikowski’s (2008) study of an online forum in Epsilon, they show how an emotionally rich message posted on the forum by one of employees led them to further explore the dimensions of one of themes emerged through their grounded theory approach. They explain how that single message posted on the forum helped them to deepen their theoretical understanding of their phenomenon and provided them with threads to further investigate it. We also contend that solely relying on data from a social media setting cannot necessarily help researcher to fill their theoretical categories as in most cases in-depth understanding of a theoretical category can be gained through interviews with participants. This is consistent with O’Mahonys and Ferrarof (2007) study of the governance of socially collective actions in organisations. They initially used online forums as sources of data to develop their theoretical model, however; because the data was not rich enough to provide them with depth about their constructs, they conducted 48 interviews to reach theoretical saturation.

CONCLUSION

The focus of this paper was on the methodological implications of using social media as a research setting for healthcare IS studies. We argue in this paper that social media offers unique opportunities for IS researchers to extend analyses of areas that have been at the core of healthcare IS studies, for example, the social issues related to information technology based activities and the complexity of their associated interactions (Orlikowski, 1996; Walsham, 1995). Also evidence was provided from IS literature to argue that this branch of IS research is still under-studied and it needs more attention from IS researchers.

In the light of these arguments, a reflective framework was developed to assess a recent healthcare IS study and was used to reflect on the implications of social media as a research setting. By using this framework, an empirical healthcare IS study was analysed and some important lessons learned from the analysis were discussed in this paper.

We believe this study makes two contributions: First, by developing a framework - that is well grounded in the IS literature – to assess healthcare IS studies that use social media settings as their sources of evidence. Second, by using this framework to extend our understanding of the implications of social media as a research setting for healthcare IS studies.

This study also shows that with the prevalence of social media in people's daily life and the attraction of these electronic social contexts for researchers, there is an urgent need for the IS community to revisit and refine some of the matters that are at the core of its research activities such as 'research settings' and 'research ethics'.

Social media is relatively a new way of collecting evidence to the IS community. It needs more collective attentions from IS researchers to build better IS theories and methods in this area. So, we hope what we presented here can create fruitful discussions among IS researchers.