



MONASH University

The delivery and receipt of mental illness information in Australia

Annette Graham

MA

A thesis submitted for the degree of Doctor of Philosophy at

Monash University in 2018

Department of Psychiatry, Faculty of Medicine, Nursing and Health Sciences

© The author 2018.

Abstract

The distribution of mental illness information is a crucial element of many mental illness prevention and treatment strategies. Yet, our ability to design these strategies is restricted by a lack of understanding of how mental illness information is delivered and received. In this research program, I aimed to explore delivery and receipt of mental illness information among the general Australian population. I conducted three epidemiological studies and one qualitative study.

In the epidemiological studies I analysed data from the 2007 Australian National Survey of Mental Health and Wellbeing ($N=8,841$). In the first study, I reported that during the year before the survey, 33.7% of Australians recalled receiving mental illness information; of these, 51.2% found it helpful. Non-English speakers and the socially disadvantaged were less likely to receive mental illness information. Older and less educated respondents were less likely to both receive mental illness information and to find it helpful. Mental health service use was associated with receipt of mental illness information. In the second paper, focusing specifically on major depression, I report that 54.7% of people with depression had received mental illness information during the year before the survey; most (76.7%) found it helpful. In the third paper, using structural equation modelling techniques, I show that a modified version of Andersen's Behavioural Model of Health Service Use describes the service use of people with depression. Further, I found that mental health need was not related to receipt of information about mental illness, however, information receivers were more likely to have accessed mental health services and to have more social connections.

In the qualitative study, service use pathways and experiences of 12 Australians who had received depression treatment from healthcare professionals were examined. Semi-

structured in-depth interviews were conducted and flowcharts depicting pathways to services constructed. People with depression disclosed they needed to know how beneficial therapeutic relationships with health care providers could be, and that symptoms of depression themselves (i.e., exhaustion, reduced ability and desire to interact with others and compromised self-perception) were barriers to service use which, at times, they could not overcome alone.

In this dissertation I provide further evidence supporting the notion that efforts to deliver mental illness information in Australia are warranted. First, many Australians are not receiving mental illness information. Second, when such mental information is received, large proportions of the people who receive it find it helpful. The findings I report in relation to the extent of mental illness information receipt in the community can be used as benchmarks against which to evaluate continued efforts to deliver mental illness information. These may prove particularly important now, as we are experiencing rapid changes in the mental illness information landscape because of the spread of the internet, and rapid development of e-mental health initiatives.

General Declaration

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.

This thesis includes three original papers published in peer reviewed journals and one submitted publication. The core theme of the thesis is delivery and receipt of mental illness information. The ideas, development and writing up of all the papers in the thesis were the principal responsibility of myself, the student, working within the Department of Psychiatry under the supervision of Associate Professor Penelope Hasking.

The inclusion of co-authors reflects the fact that the work came from active collaboration between researchers and acknowledges input into team-based research.

In the case of Chapters 4,6,7 and 9 my contribution to the work involved the following:

Thesis Chapter	Publication Title	Status <i>(published, in press, accepted or returned for revision, submitted)</i>	Nature and % of student contribution	Co-author name(s) Nature and % of Co-author's contribution*	Co-author(s), Monash student Y/N*
4	Receipt and perceived helpfulness of mental illness information: Findings from the Australian National Survey of Mental health and Wellbeing	Published	Conception, data analysis, and writing first draft and then all the subsequent redrafts: 70%	Joanne Brooker: help with idea development and redrafting 10% Penelope Hasking: help with redrafting 10% David Clarke: involved in initial discussion relating to the paper and early planning 5% Graham Meadows: involved in drafting the survey questions that the data was drawn from 5%	No
6	How people with depression receive and perceive mental illness information: Findings from the Australian Survey of Mental Health and Wellbeing	Published	Conception, data analysis, and writing first draft and then all the subsequent redrafts: 70%	Penelope Hasking: help with idea development and redrafting 20% David Clarke: involved in initial discussion relating to the paper and early planning 5% Graham Meadows: involved in drafting the survey questions that the data was drawn from 5%	No

7	Mental health service use among people with depression: An exploration using Andersen's Behavioural Model of Health Service Use	Published	Conception, data analysis, and writing first draft and then all the subsequent redrafts: 70%	Penelope Hasking: help with idea development and redrafting 10% Joanne Brooker: help with idea development and redrafting 10% David Clarke: involved in initial discussion relating to the paper and early planning 5% Graham Meadows: involved in drafting the survey questions that the data was drawn from 5%	No
9	Patients' perspectives on depression treatment in Australia: The nature of helpful treatment, barriers and catalysts	Submitted	Conception, preparation of ethics submission, data collection, main person for the data analysis, and writing first draft and then all the subsequent redrafts: 70%	Joanne Brooker: help with idea development, data collection, analysis and redrafting 10% Clare C. O'Callaghan: help with idea development, analysis and redrafting 10% Penelope Hasking: help with idea development, and redrafting 5% John Julian: help with recruitment 3% Graham Meadows: help with recruitment 2%	No

I have renumbered sections of submitted or published papers in order to generate a consistent presentation within the thesis. In Chapter 9 I have also changed the referencing from a numbered referencing system to APA referencing so that there is consistency.

Student signature: 

Date: 14/11/2018

The undersigned hereby certify that the above declaration correctly reflects the nature and extent of the student's and co-authors' contributions to this work. In instances where I am not the responsible author I have consulted with the responsible author to agree on the respective contributions of the authors.

Main Supervisor signature: 

Date: 27.09.2018

Acknowledgments

First, I would like to thank my main supervisor Associate Professor Penelope Hasking who has provided invaluable feedback to me. That she has done much of this while there was almost a whole continent between us speaks of her dedication, organisation and analytical skills. My friend, colleague and co-author Dr. Joanne Brooker has supported me throughout my PhD journey. I have benefited from her attentive ear, her word-smithing skills and her networks. I would also like to thank Dr. Clare O'Callaghan, a qualitative expert, who worked with us on the last paper. Her practical insights about the design and conduct of qualitative work proved very helpful. Thanks also to Ms. Debbie Lang for her assistance with administrative tasks and thanks to Professor Graham Meadows who many years ago invited me to be part of the work he was doing on the 2007 National Survey of Mental Health and Wellbeing. Thanks also to David Clarke for his advice in relation to this project.

I interviewed 12 remarkable Australians who had received treatment for depression. They openly shared their stories and I felt privileged to listen to them and come to know something of their personal journeys. Thanks also the 8,841 Australians who completed the 2007 National Survey of Mental Health and Wellbeing. As well as all the people within government departments and the Australian Bureau of Statistics who worked on this survey.

Finally, thanks to my husband, Craig Thompson, who is always there when I need him, and my kids Coulton and Jasmine who really are the best kids in the world. I promise it really is nearly finished!

Table of contents

ABSTRACT	3
GENERAL DECLARATION	5
ACKNOWLEDGMENTS.....	7
CHAPTER 1 : INTRODUCTION	12
1.1 PROVISION OF MENTAL ILLNESS INFORMATION: AN IMPORTANT ELEMENT OF MENTAL ILLNESS PREVENTION, EARLY INTERVENTION, AND TREATMENT PROGRAMS	12
1.2 THE AUSTRALIAN MENTAL HEALTH CARE CONTEXT	13
1.3 AIM	14
1.4 SUMMARY OF THE DISSERTATION	14
CHAPTER 2 : A REVIEW OF THE LITERATURE DESCRIBING THE PROVISION OF MENTAL ILLNESS INFORMATION.....	16
2.1 RELATIONSHIP BETWEEN RECEIPT OF MENTAL ILLNESS INFORMATION AND USE OF MENTAL HEALTH SERVICES.....	16
2.2 THE ROLE OF INFORMATION PROVISION AS DESCRIBED BY HEALTH COMMUNICATION THEORISTS	22
2.3 THE NEED FOR MENTAL ILLNESS INFORMATION	25
2.4 SATISFACTION WITH INFORMATION PROVISION FROM MENTAL HEALTHCARE SERVICES	30
2.5 HEALTH INFORMATION CHANNELS.....	31
2.6 SUMMARY	33
CHAPTER 3 : ORIGINS OF THE QUANTITATIVE DATA SET USED IN EPIDEMIOLOGICAL ANALYSES.....	34
3.1 THE HISTORY OF NATIONAL MENTAL HEALTH SURVEYS	34
3.2 THE 2007 AUSTRALIAN NATIONAL SURVEY OF MENTAL HEALTH AND WELLBEING.....	35
3.3 THE TWO QUESTIONS FOCUSED ON RECEIPT OF MENTAL ILLNESS INFORMATION.....	37
3.4 ETHICAL CONSIDERATION IN THE USE OF DATA FROM THE 2007 NATIONAL SURVEY OF MENTAL HEALTH AND WELLBEING	38
CHAPTER 4 : PAPER 1, RECEIPT AND PERCEIVED HELPFULNESS OF MENTAL ILLNESS INFORMATION: FINDINGS FROM THE AUSTRALIAN NATIONAL SURVEY OF MENTAL HEALTH AND WELLBEING.....	40
4.1 ABSTRACT	41
4.2 METHOD	43
4.3 RESULTS	46
4.4 DISCUSSION.....	53
CHAPTER 5 : SHIFTING THE FOCUS FROM ALL AUSTRALIANS WITH MENTAL ILLNESS TO RESPONDENTS WITH DEPRESSION	57

CHAPTER 6 : PAPER 2, HOW PEOPLE WITH DEPRESSION RECEIVE AND PERCEIVE MENTAL ILLNESS INFORMATION: FINDINGS FROM THE AUSTRALIAN NATIONAL SURVEY OF MENTAL HEALTH AND WELLBEING.....	60
6.1 ABSTRACT	61
6.2 METHOD	63
6.3 RESULTS	67
6.4 DISCUSSION.....	69
CHAPTER 7 : PAPER 3, MENTAL HEALTH SERVICE USE AMONG PEOPLE WITH DEPRESSION: AN EXPLORATION USING ANDERSEN’S BEHAVIORAL MODEL OF HEALTH SERVICE USE	77
7.1 ABSTRACT	78
7.2 METHOD	83
7.3 RESULTS	88
7.4 DISCUSSION.....	93
CHAPTER 8 : NOTES ON THE QUALITATIVE METHODOLOGY	98
8.1 RECRUITING PARTICIPANTS	99
8.2 THE METHODOLOGY: QUALITATIVE DESCRIPTION WITH GROUNDED THEORY OVERTONES.....	100
8.3 DATA COLLECTION: SEMI-STRUCTURED INTERVIEWS AND MODELLING OF THE PARTICIPANTS’ EXPERIENCES.....	100
8.4 ETHICAL CONSIDERATIONS	102
CHAPTER 9 : PAPER 4, PATIENTS’ PERSPECTIVES ON DEPRESSION TREATMENT IN AUSTRALIA: THE NATURE OF HELPFUL TREATMENT, BARRIERS AND CATALYSTS	104
9.1 ABSTRACT	105
9.2 METHOD	107
9.3 RESULTS	109
9.4 DISCUSSION AND CONCLUSION	122
CHAPTER 10 : GENERAL DISCUSSION.....	129
10.1 SYNTHESIS OF KEY FINDINGS.....	129
10.2 LIMITATIONS.....	135
10.3 DIRECTIONS FOR FUTURE RESEARCH	137
10.4 CONCLUDING REMARKS	138
REFERENCES	139
APPENDIX A: QUESTIONS ABOUT THE RECEIPT OF MENTAL ILLNESS INFORMATION FROM THE 2007 NATIONAL SURVEY OF MENTAL HEALTH AND WELLBEING	175
APPENDIX B: SUPPLEMENTARY MATERIAL FROM CHAPTER 7, PAPER 3	176
APPENDIX C: ETHICS APPROVAL FOR THE QUALITATIVE STUDY IN CHAPTER 9.....	179
APPENDIX D: SUPPLEMENTARY MATERIAL CHAPTER 9, PAPER 4	182

List of Tables

Table 4.1 <i>Bi-variate Analyses</i>	48
Table 4.2 <i>Probit regression models of 1. Receipt of mental illness information and 2. Perceived helpfulness of mental illness information</i>	51
Table 4.3 <i>Models of mental health information receipt constructed utilising probit regression using data from the National Survey of Mental Health and Wellbeing</i>	52
Table 7.1 <i>Results of the exploratory factor analysis: variables with a factor loading of greater than .35, following orthogonal varimax rotation</i>	91
Table 7.2 <i>Goodness of fit statistics for the models of mental health service use of those with depression examined in this paper</i>	92
Table 9.1 <i>Description of participants</i>	110
Table 9.2 <i>Overview of the thematic and category findings with illustrative quotes</i>	112
Table 9.3 <i>Time between the participants' first experience of depressive symptoms and their receipt of helpful therapy</i>	119
Table 9.4 <i>Categories of the catalysts</i>	121
Table 9.5 <i>Healthcare providers information that may help people with depression choose compatible providers</i>	126
Table 10.1 <i>Nationally representative estimates of Australians' receipt of mental illness information and it's perceived helpfulness</i>	131
Table Appendix B 1 <i>Frequency distributions of the variables used in Chapter 7, paper 3</i>	176
Table Appendix B 2 <i>Unique parameters and co-variances of the models depicted in Figure 7.2 part B and C</i>	178
Table Appendix D 1 <i>Consolidated criteria for reporting qualitative studies (COREQ) checklist (Tong et al., 2007)</i>	182
Table Appendix D 2 <i>Questions and prompts used during the interviews</i>	185

List of Figures

Figure 2.1 Andersen’s Behavioral Model of Health Service Use	18
Figure 2.2 The Consumer Information Processing Model.....	24
Figure 5.1 Percentage of Australians with various types of mental disorders who received mental illness information.....	58
Figure 7.1 Various configurations of Andersen’s Behavioral Model of Health Service Use.....	80
Figure 7.2 Empirically derived structural equation model.....	90
Figure 8.1 Example of a flow-chart constructed for one participant during the qualitative interview process	103

Chapter 1: Introduction

1.1 Provision of mental illness information: An important element of mental illness prevention, early intervention, and treatment programs

Worldwide, 450 million people are living with a mental illness and, unfortunately, three-quarters of these people go without even minimally adequate treatments (Chisholm et al., 2007; Kohn, Saxena, Levay, & Saraceno, 2004; World Health Organization, 2003, 2011). The distribution of information about mental illness is a vital component of both mental illness prevention and treatment interventions. The authors of a systematic review reported that exposure to even brief, passive, psychoeducation interventions (i.e., being provided with access to brochures or web-sites) led to reduction in the psychological distress and symptoms of depression (Donker, Griffiths, Cuijpers, & Christensen, 2009). Further, another systematic review showed that bibliotherapy, that is therapy delivered via a book rather than via face-to-face engagement with health professionals, is an effective treatment for unipolar depression (Cuijpers, 1997). In addition, in a non-clinical sample with elevated depression scores, exposure to BluePages, a depression information website, led to a reduction in depressive symptoms (Mackinnon, Griffiths, & Christensen, 2008).

Making mental illness information available to family and carers of people with mental illness, through psycho-education programs, has been shown to improve the recovery of people with schizophrenia, bipolar disorder, and depression and help prevent reoccurrence of mental disorders (McFarlane, 2016; McFarlane, Dixon, Lukens, & Lucksted, 2003). When describing the origins of family psychoeducation interventions McFarlane (2016) wrote;

“It became increasingly clear that to adapt under these circumstances [having a family member with a mental illness], the family must have the available knowledge about the illness itself and coping skills specific to a particular disorder, skills that are counterintuitive to most families and many clinicians. It became clear that it was

unrealistic to expect families to understand such mystifying disorders and to know what to do about them, independent of professional guidance (p. 462).”

Thus, this author suggests, that what a family needs to help family members with mental illness is a deep knowledge and understanding of the mental illness. Perhaps people with a mental illness who wish to help themselves, and the community generally, would also benefit from a deeper understanding and knowledge about mental illness.

1.2 The Australian mental health care context

Australia is a high-income country with a well-developed health care system (Enticott et al., 2017). Prevalence data from the 2007 National Survey of Mental Health and Wellbeing suggests that, over a 12 month time frame, approximately 20% of Australians are likely to have an anxiety, affective, or substance use disorder (Slade, Johnston, Oakley Browne, Andrews, & Whiteford, 2009). Given the extent of mental illness in Australia, there is currently pressure, not only to deliver effective interventions for mental illness, but to deliver them as cost effectively as possible.

Since 1993, much of the reform in the Australian mental health care sector has been driven by a series of national mental health care plans. This reform has resulted in an increased mental health workforce (i.e., 35% increase in the workforce between 1992-2011) and increased service use [i.e., the treatment rate for mental disorders increased from 37% in 2006-2007 to 46% in 2009-2010 (Whiteford, 2017)]. Over the last two decades there has also been a rapid increase in the amount of online information about mental health and e-therapy (Christensen & Petrie, 2013). Australian governments and non-government organisations have been attempting to develop a universal mental health care scheme to ensure equitable mental health care access to all Australians. Despite this effort, there are significant treatment gaps and service quality gaps, as many Australians with mental disorders are not accessing

mental health services, and many people who access services are not receiving evidence-based treatment. Specifically, 39% of Australians with a 12-month affective and/or anxiety disorder sought professional help, and only 26% received an evidence-based treatment (Harris et al., 2015). This treatment gap is even more pronounced outside major urban areas (Meadows, Enticott, & Rosenberg, 2018). Effective delivery of mental illness information may help close some of the service quality and treatment gaps.

1.3 Aim

Timely and thoughtful provision of mental illness information may prove to be a tool that can be used to reduce the disease burden arising from mental illness. If we were to understand this tool better, we could use it more effectively. We currently know little about the impact of present efforts to deliver mental illness information. We do not know who is receiving such information, via which channel they are receiving it, or if they are finding it helpful. Yet this knowledge is essential for people who are allocating the scarce resources available for mental illness prevention and treatment. My overall aim in this PhD is to increase our knowledge about issues to do with the delivery and receipt of mental illness information in the Australian context; this information will be useful as we strive to reduce the burden that results from mental illness.

1.4 Summary of the dissertation

In Chapter 2, I present a narrative review summarising the literature relating to the receipt of mental illness information. In Chapter 3, I discuss issues to do with the 2007 National Survey of Mental Health and Wellbeing and describe the two questions included in the survey which focused on the receipt of mental illness information. While this survey was conducted more than a decade ago it is still important as the most recent detailed national estimates of the prevalence of mental illness in Australia were derived from it and it is the

only survey from which national estimates of the extent of receipt of mental illness information can be obtained.

In Chapter 4, I assess the extent of receipt of mental illness information in Australia, the channels via which this information was delivered, and its perceived helpfulness. In Chapter 5, I describe why I narrow the focus of the rest of the doctoral work to Australians with depression (at the exclusion of other mental disorders). In Chapter 6, I characterise the differences between Australians with depression who did and did not receive mental illness related information. In Chapter 7, I assess the usefulness of Andersen's Behavioural Model of Health Service Use for describing the service use of Australians with depression and explore how this model may differ for people who did and did not receive mental illness information. All the analyses I present in Chapters 4-7 were conducted using data from the 2007 National Survey of Mental Health and Wellbeing

In Chapter 8, I illustrate how a different type of methodology, a qualitative one, may allow for the further exploration of issues regarding receipt of mental illness information and service use among people with depression. In Chapter 9, I describe, in some depth, the experiences of a group of Australians who had received treatment for depression, with a focus on how they came to be receiving mental health services. In the final chapter, Chapter 10, I summarise what the work presented in this doctorate contributes to the health communication domain and suggest how the findings may be useful for mental health policy makers.

Chapter 2: A review of the literature describing the provision of mental illness information

This literature review has five major sections. In the first section, I focus on the question of whether there is an association between receipt of mental illness information and service use. In this section I also discuss the importance of Andersen's Behavioural Model of Health Service Use, the most frequently used model of health service use. In the second section, I discuss the role of information provision as it is described in health communication theories, such as the Consumer Information Processing Theory. In the third section, I focus on the literature related to the need for information about mental illness. In the fourth section, I review the literature concerned with patients' and carers' satisfaction with existing mental health services in relation to the delivery of mental illness related information. In the fifth section, I describe what is known about the channels via which mental health information is delivered. I discuss this for two reasons; first, because the medium is part of the message (McLuhan & Lapham, 1994), that is, messages delivered via different channels have been found to have different impacts. Second, because different segments of the community get their information via different channels it is necessary to understand these patterns of use to more effectively target delivery of mental illness information.

2.1 Relationship between receipt of mental illness information and use of mental health services

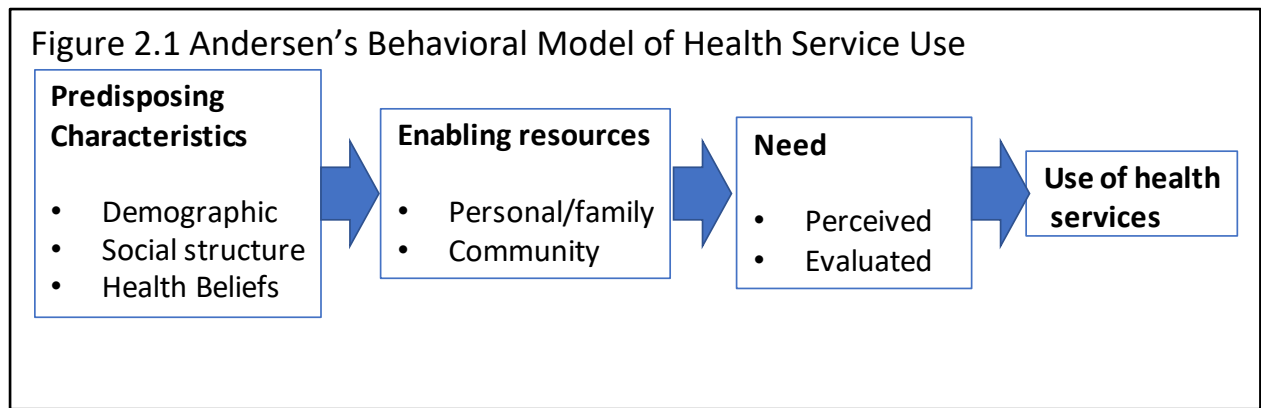
2.1.1 Why mental health service use is important

Estimates suggest that about 30% of the population will have a mental disorder during their lifetime and 20% during the course of a year (Steel et al., 2014). Only a minority of people who have had a diagnosable mental disorder have received mental health services (Andrews & Henderson, 2000; Andrews, Issakidis, & Carter, 2001; Sørensen, Bæk, Kallestrup, & Carlsson, 2017). Four out of five people with serious mental illnesses living in

low and middle income countries do not receive essential mental health services (World Health Organization, 2011). While the proportion of individuals in high income countries with mental illness receiving mental health services is higher, still only 35% of Australians who had a mental disorder had received mental health services during the year before the 2007 National Survey of Mental Health and Wellbeing (Burgess et al., 2009). Treatments with considerable effectiveness exist for most mental disorders, and if such treatments were accessed more frequently the disease burden resulting from mental illnesses could be reduced (Keynejad, Dua, Barbui, & Thornicroft, 2017; World Health Organization, 2001).

2.1.2 Andersen's Behavioural model of Health Service Use.

The most frequently cited model of health service use, Andersen's Behavioural Model of Health Service Use, was originally constructed by a sociologist using data from an American National Health Survey, to describe the general health service use of the American population (Andersen & Newman, 1973). Von Lengerke, Gohl, and Babitsch (2014) suggested that Andersen's model has "guided health services utilization research for decades" (p. 16). While various versions of the model have been presented (Andersen, 1995; Andersen, 2008) all suggest that health service use is primarily a function of three distinct sets of variables (see Figure 2.1). First, predisposing characteristics these are personal characteristics such as gender, age and health beliefs. Second, enabling characteristics or resources a person has that facilitate access to health services such as wealth, social support or community characteristics. Finally, there is need, for according to the model no one seeks out health services unless they perceive that they are sick and thus need help.



*Note: This image is a reconstruction of one that was originally presented in Andersen (1995)

In a systematic review of 53 studies that examined health service use amongst people who were chronically ill, de Boer and colleagues found that neither predisposing or enabling characteristics predicted service use, however physical and psychological need factors were strongly related to service use (de Boer, Wijker, & de Haes, 1997). People with mental illness, which is often experienced as a chronic illness, may share certain characteristics with the sub-populations examined in this systematic review. Another systematic review examined data from 16 papers published between 1998-2011 that had used Andersen's model to explore general health service use (Babitsch, Gohl, & von Lengerke, 2012). As there was a lack of consistency found in the relationships between the various variables examined and service-use, the review authors concluded that the context of studies and the characteristics of populations were important.

Andersen's model has repeatedly proven a useful starting place for researchers and policy makers developing health service use models for specific populations. An example of this is the expanded behavioural model for vulnerable populations (Gelberg, Andersen, & Leake, 2000). Vulnerable populations include people from minority groups, immigrants, children, adolescents, people living with mental illness, physical illness or disabilities, elderly individuals, and people who are homeless or living in poverty (Gelberg et al., 2000). To

create this model, extra variables specifically relevant to vulnerable people were added to each facet of Andersen's original model. For instance, among the predisposing variables, variables that captured information about childhood care placements (i.e., foster care, placement in group homes), experiences of neglect and living condition (i.e., access to running water and sewers) were included. In chapter 7, I will use Andersen's model as a starting point from which to construct a model of service use for people with depression and I will examine whether this model varies for people who do and do not receive mental illness related information.

2.1.3 Debate in the general health literature about the association between information provision and services use.

Within the general health literature, there is debate about the impact the provision of health information has on service use. Studies of the general population (Dwyer & Liu, 2013; Kenkel, 1990; Lee, 2008; Suziedelyte, 2012), women (Nicholson, Gardner, Grason, & Powe, 2005), older adults (Shim, Ailshire, Zelinski, & Crimmins, 2018), the elderly (Hsieh & Lin, 1997; Parente, Salkever, & DaVanzo, 2005), and patients with long term diseases (Khechine, Pascot, & Prémont, 2007) all found that receipt of health information was associated with increased health service use.

Yet, there is other research which suggests that, rather than promote service use, health information becomes a substitute for health services use and thus those who receive health information are less likely to use health services. Researchers analysing data from the Swiss Health survey found a negative association between receipt of health information and services use (Schmid, 2013, 2014), as did researchers analysing data from the Healthwise Communities Project (Wagner & Greenlick, 2001; Wagner, Hu, & Hibbard, 2001). Shim et al. (2018) found there was a positive association between receipt of health information and health service use for all participants, except those who had diabetes; among participants with

diabetes there was a negative association between receipt of health information and service use. Thus, the relationship between health information and service use may depend on the nature of the health condition. It is worth noting that, in some circumstances, it may be beneficial to reduce demand for services through the provision of information.

2.1.4 Lack of knowledge about mental illness a barrier to mental health service use.

For many, the onset of mental illness occurs during adolescence (Rickwood, Deane, & Wilson, 2007). Thus, several researchers have focused on adolescents in their exploration of service use barriers. Three reviews of adolescent help-seeking for mental health issues reported informational barriers (Gulliver, Griffiths, & Christensen, 2010; Rickwood et al., 2007; Rothì & Leavey, 2006). In a systematic review “*difficulties identifying the symptoms of mental illness*” were found to be a barrier in 5 out of 13 qualitative studies included in the review (Gulliver et al., 2010). Rothì and Leavey (2006) identified 20 service use barriers/facilitators. Three of these barriers were “*problem recognition*” (described in 2 papers they reviewed), “*prior knowledge*” (described in 4 papers they reviewed) and “*knowledge of services*” (described in 3 papers they reviewed). Focusing on facilitators rather than barriers to services use, Rickwood et al. (2007) found that young people who are knowledgeable about mental health issues are more likely to seek help. Further evidence that lack of information is a help-seeking barrier comes from a review of 42 articles focusing on barriers to men’s help-seeking for depression. Ellis (2018) identified 11 barriers, one of which was “*not recognising or acknowledging symptoms*”, and another was “*poor health literacy*”.

“Mental health literacy refers to the knowledge and beliefs about mental disorders which aid their recognition, management and prevention” (Goldney, Fisher, & Wilson, 2001, p. 277). Many have argued that mental health illiteracy is one of the impediments to people

with mental disorders receiving effective and timely interventions (Ellis, 2018; Goldney et al., 2001; Jorm, 2000; Lauber, Nordt, & Rossler, 2005; Wright et al., 2005). Information provision is one way to combat mental health illiteracy (Jorm, 2012) and could also go some way to minimising stigma associated with seeking help for a mental health problem.

2.1.5 The impact of mental health information interventions on service use

Gulliver, Griffiths, Christensen, and Brewer (2012) conducted a systematic review examining help-seeking interventions for depression, anxiety, and general distress. They included six randomised controlled trials in their review, and analysed data from eight intervention conditions. Four of the studies included only participants who were under 26 years of age. Five of the six studies described universal interventions (that is interventions that targeted the whole population) and one study an indicated intervention where only participants with a high level of psychological distress were included. Information provision was an important part of all eight interventions. The following type of information was provided: in 6 of the 8 conditions, information targeting mental health literacy; in 3 conditions, destigmatising information; in 3 conditions information about where to seek help, and in 2 conditions, personalised feedback about individuals' symptoms. Overall, the interventions were found to have a positive effect on *attitudes* toward help-seeking for mental health issues but no effect was found in relation to help-seeking *behaviour* (Gulliver et al., 2012).

In another systematic review of interventions to increase young people's (participants were aged less than 26 years) mental health literacy using information and communication technologies 19 studies were examined (Tay, Tay, & Klainin-Yobas, 2018). The authors found that help-seeking levels were significantly increased in 7 of the 9 studies in which it was examined, however when reading this review it is difficult to determine whether help-

seeking attitudes, intentions or behaviours changed as a result of the interventions (Tay et al., 2018).

Xu et al. (2018) conducted a systematic review of 97 papers focused on interventions to encourage help-seeking for mental health problems. The authors pointed out that since the inception of the mhGAP Program (Mental Health Gap Action Program) by the World Health Organisation (World Health Organization, 2008) there has been a substantial growth in the amount of published research focusing on help-seeking interventions for mental health services. The most common interventions, among the studies included in the review, focused on increasing mental health literacy and decreasing stigma. An important finding emerging from the review was that the interventions improved formal help-seeking behaviours if delivered to adults who were at risk of mental illness, but not if delivered on a population level, or to children or to adolescents.

Thus, in summary, to date the data from help-seeking interventions which delivered mental illness information suggest that such interventions often result in increased help-seeking behaviours if they targeted clinical populations and improved attitudes toward help-seeking if they are targeted at the general population.

2.2 The role of information provision as described by health communication theorists

Health communication is a field that focuses on the study of methods used to inform and influence individual and community decisions that enhance health (Freimuth & Quinn, 2004), and has particular relevance to public health. The models generally used in the field of health communication are health behaviour models. Four prominent health behaviour models are the health belief model (Janz & Becker, 1984), social cognitive theory (Bandura, 2009), the theory of reasoned action (Fishbein, 2007) and the trans-theoretical model (Prochaska & Velicer, 1997). While differing on the primary factors thought to enact

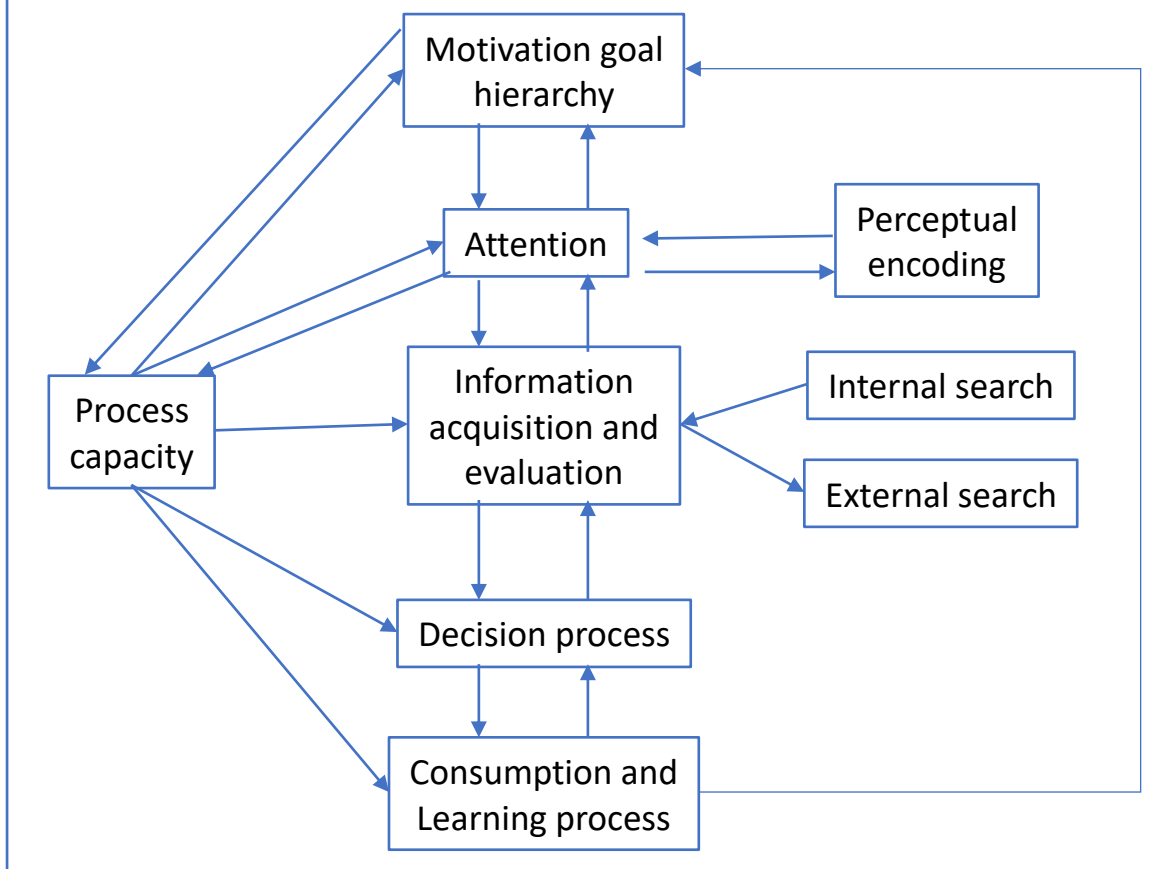
behaviour change, all these models suggest that health-related behaviour change is linked to information provision.

2.2.1 The Consumer Information Processing Theory.

Another theory used by health communication researchers is the Consumer Information Processing Theory which was developed by J.R Bettman during the latter half of the 1970's as a conceptual framework to facilitate understanding of consumer choice (Bettman, 1979). The Consumer Information Processing model depicts five components of information processing: motivation; attention; information acquisition and evaluation; the decision process; and the consumption and learning process (see Figure 2.2). According to the CIP model there are feedback loops between each of these components. One of the central assumptions of CIP is that people are limited in how much information they can process. Thus, they tend to use heuristics or simple rules as they process information. The model depicts consumers as seeking to process as little information as possible to make decisions quickly. According to the theory, for people to use information, it must be available, seen as useful and easily understood.

The Consumer Information Processing model has been adopted by researchers in several health-related fields. For example, it has been used as a conceptual framework to understand the effect of food labelling on eating habits (Glanz et al., 2012) and to understand women's choices in relation to breast and cervical cancer screening (Schoenberg, Kruger, Bardach, & Howell, 2013).

Figure 2.2 The Consumer Information Processing Model



*Note: This image is an adaption of one that was originally presented in Bettman (1979)

In this dissertation I am particularly concerned with the central process described by the CIP model *information acquisition and evaluation*. According to Bettman, information acquisition is an active process where people acquire information first via an internal search, relying on information arising from past experiences or previous exposure to information. If they find this information insufficient, they will access information from an external source, from another person or media channel such as the internet or television. According to the CIP model, the extent and direction that the information search takes is affected by prior knowledge held by the consumer, the availability of information, the difficulty of the choice task and time pressure. I will use the CIP model as a guiding theory in the study that is presented in Chapter 4.

2.3 The need for mental illness information

People who would benefit from health care are considered to have health care needs (Stevens & Raftery, 1994). In the past, all people who had a mental illness were assumed to have mental health needs (Joska & Flisher, 2005). However, more recently, efforts have been made to assess mental health needs independently of diagnosis (Tlach et al., 2015). Three tools commonly used to assess mental health needs are: the Perceived Need for Care Questionnaire (Meadows, Harvey, Fossey, & Burgess, 2000), the Camberwell Assessment of Needs Schedule [CAN (Phelan et al., 1995)] and Need for Care Assessment Schedule (Brewin, Wing, Mangen, Brugha, & MacCarthy, 1987)]. Of these three instruments, only the Perceived Need for Care Questionnaire and the Camberwell Assessment of Need Schedule include questions relating to the need for mental illness information.

The Perceived Need for Care Questionnaire enquires about five areas of perceived mental health need: the need for information, medication, counselling, social intervention and skills training (Meadows, Harvey, et al., 2000). Among these areas of need, the need for mental illness information is routinely the second most frequently mentioned; generally, a need for counselling is the most frequently reported need (Dezetter et al., 2015; Fikretoglu, Liu, Zamorski, & Jetly, 2016; Fleury, Grenier, Bamvita, Perreault, & Caron, 2015; Seekles et al., 2012).

Results derived from the Perceived Need for Care Questionnaire suggest that one in every two or three people with 12-month mental illnesses has a need for mental illness information. For example, 36% of primary care patients in Quebec, who had symptoms of depression or anxiety, expressed a need for mental illness information (Dezetter et al., 2015). Similarly, in the Netherlands 58% of general practice patients, with a current diagnosis of depression and anxiety, reported a need for mental illness information (Prins, Verhaak, van

der Meer, Penninx, & Jozien, 2009). Forty percent of people interviewed in the 1997 Australian National Survey of Mental Health and Wellbeing and 58% of people interviewed in the 2007 National Survey of Mental Health and Wellbeing who consulted a general practitioner (GP), a psychiatrist, or a psychologist felt they needed mental illness information (Meadows & Bobevski, 2011). In national surveys, 57% of people in the Netherlands (Prins et al., 2009) and 54% of people in Australia (Prins et al., 2011), found to have anxiety and depressive disorders, reported a need for mental illness information.

The Camberwell Assessment of Need Schedule is also designed to identify mental health needs. Different versions of the instrument have been designed to be used with various populations (e.g., CANDID is for people who have developmental and intellectual disabilities; CANE is for older adults) and in research and clinical contexts (Slade, 2015, 1 July). All the Camberwell Assessment of Need Schedule questionnaires assess respondents' mental health needs in 22 domains. One of these domains is the need for "information about the condition and treatment" (Phelan et al., 1995 p. 590). If the 22 Camberwell Assessment of Need Schedule need domains are ranked from highest to lowest proportion of participants recording such a need, the need for information is generally ranked within the top five needs (Grinshpoon & Ponizovsky, 2008; Grover et al., 2015; Kulhara et al., 2010; Macpherson, Varah, Summerfield, Foy, & Slade, 2003; Ochoa et al., 2005)

Analysis of data collected using the Camberwell Assessment of Need Schedule reveals there is considerable variation in the proportion of patients reporting an informational need. The proportion is lower among participants who are older; for example, in a German study of primary mental health care patients aged over seventy-five, 8% reported a need for mental illness information (Stein et al., 2016). In contrast, eighty-three per cent of an Israeli sample

of voluntary patients with schizophrenia or schizoaffective disorder reported a need for information.

Other studies have also suggested that a large proportion of psychiatric patients are conscious of needing mental illness information. For example, in a study that used pre and post treatment questionnaires to examine clinical decision making in relation to 588 outpatients with severe mental illness, recruited from six European countries, Giacco et al. (2014) found that 80% of the study participants wanted to receive information on all aspects of their treatment. Hallett, Gupta, and Priebe (2013) reported on a study in which 202 outpatients with schizophrenia were interviewed and found that 68% would have liked to learn more about their illness. A postal questionnaire study of 160 British patients of community treatment teams and individuals who attend mental health users support groups indicated that both groups had a very high desire for mental illness information (Hill & Laugharne, 2006 p. 75).

Individuals in clinical populations are often seeking general information about their mental illnesses (Barney, Griffiths, & Banfield, 2011; Chien, Kam, & Lee, 2001; Gümüş, 2008; Liebherz, Tlach, Härter, & Dirmaier, 2015; Pollack, 1995), information about how to best manage their social relationships (Chien et al., 2001; Gaskill & Cooney, 1991; Gümüş, 2008; Landolt et al., 2012; Pollack, 1995; Tlach et al., 2015) and information about medication (Liebherz et al., 2015; Tlach et al., 2015). In a systematic review of twelve studies examining information needs among people with a mental illness, Tlach et al. (2015) identified four other categories of information needs: i) treatment, ii) coping, iii) working and living conditions, and iv) self-help and peer support. In another systematic review, of 78 papers, it was reported that the provision of mental illness-related information at the time of diagnosis was empowering and normalising for service users (Perkins et al., 2018).

Most of the studies examining the type of mental illness information needed have focused on samples with affective disorders (depression and bi-polar disorder) and/or schizophrenia, who are receiving or have just received therapy. As informational needs have been found to vary as a function of the diagnostic group (Mueser, Bellack, Wade, Sayers, & Rosenthal, 1992) the existing findings in relation to the type of information needed may not be generalisable to people with different types of mental illnesses. Further, we know little about the informational need of individuals with mental illness who have not received mental health services.

Researchers have examined factors associated with a need for mental illness information. Currently, among clinical samples, there is contradictory evidence about the relationship between education levels and desire for mental illness information. Chien et al. (2001) reported a positive association between education level and need for information, Giacco et al. (2014) found no association between education level and need for mental illness information, and Andrade et al. (2018) reported that lower education levels were associated with increased need for mental illness information. Thus, more work needs to be done to understand the nature of this relationship to enable more effective targeting of information interventions. Also, a negative association between severity of mental health symptoms and a need for mental illness information has been reported: the more severe a person's symptoms are, the less likely they feel the need for information (Chien et al., 2001; Giacco et al., 2014; Mueser et al., 1992). Thus, it is likely that mental illness information will be more positively received by people with less severe mental illnesses or during phases when mental illness is less severe.

2.3.1 The need for mental illness information among carers of people with mental illness and in the general community.

In addition to the needs of people with mental illness, there is a growing recognition that community members caring for individuals with a mental illness benefit from the provision of mental illness information. A lack of information provision for carers has been associated with an increase in carers' burden (Askey, Holmshaw, Gamble, & Gray, 2009). Thus, the National Institute for Health and Care Excellence (NICE) guidelines in relation to the management of psychosis and schizophrenia recommend that health professionals "give carers written and verbal information in an accessible format about: diagnosis and management of psychosis and schizophrenia, positive outcomes and recovery, types of support for carers, role of team and services and getting help in a crisis" (National Collaborating Centre for Mental Health, 2014, p. 14).

Despite the existence of these recommendations, carers' needs for such information are often unmet (Askey et al., 2009; Liebherz, Tlach, Härter, & Dirmaier, 2017; Sabanciogullari & Tel, 2015). In a study of the needs of relatives of psychiatric patients, 67% of the carers said they conducted online searches for mental illness information because they needed it, and 43% indicated that they conducted online searches because they had been provided with insufficient information by mental health care professionals (Liebherz et al., 2017). One of the conclusions of a systematic review of 16 studies that focused on the needs of carers for people with bi-polar disorder was simply that caregivers need information (Van der Voort, Goossens, & Van Der Bijl, 2007).

Less has been published about the needs for information about mental illness in the general community. A few studies have reported population level results derived from the Perceived Need for Care Questionnaire as it has been included in national mental health surveys conducted in Australia (Meadows & Burgess, 2009) and Canada (Sunderland &

Findlay, 2013). The percentage of people expressing a need for mental illness information during a 12 month period in the 1997 Australian National Survey of Mental Health and Wellbeing was 5.2% (Meadows, Burgess, Fossey, & Harvey, 2000); in the 2007 National Survey of Mental Health and Wellbeing the equivalent figure was 7.5% (Meadows & Burgess, 2009). In the 2012 Canadian Community Health Survey – Mental Health the figure was 7% (Sunderland & Findlay, 2013). The proportion of people expressing a need for mental illness information (12%) was slightly higher in the Canadian Epidemiological Catchment Area Survey (Fleury et al., 2015). From these epidemiological figures, we can conclude that, in countries like Australia and Canada, at least 1 out of every 20 community members is likely to feel a need for mental illness information during a twelve-month period.

2.4 Satisfaction with information provision from mental healthcare services

Just as the literature on mental health need illustrates the importance of mental illness information provision, so too does the literature which explores satisfaction with psychiatric services. It is clear from this literature that many patients and their carers are dissatisfied with treatment because of poor information provision.

In a systematic review examining mental health patients' treatment satisfaction, Woodward, Berry, and Bucci (2017) identified 32 studies. In 7 of these studies patients' satisfaction with mental illness information was examined and in all these studies it was reported that the participants were dissatisfied with the limited information that they received. Qualitative studies suggested that a lack of information provision was disempowering (Powell & Clarke, 2006; Ricketts, 1996) and patients equated a lack of information provision with a lack of respect (Powell & Clarke, 2006).

Family members and carers of people with mental illness are also often dissatisfied with the limited mental illness information that they received from health professionals

(Hodgson, King, & Leggatt, 2002; Sabanciogullari & Tel, 2015; Scharer, 2002). Sometimes carers receive no information from mental health professionals. For example, Sabanciogullari and Tel (2015) found that a quarter of the family members who were caring for patients of a Turkish psychiatric unit had no information regarding their family member's illness.

2.5 Health information channels

Health information can be obtained via many different channels. Old media channels (television, radio, newspapers, magazines, books and leaflets) and new media channels (the internet, social media, health care apps) are described in the literature (Ledford, 2012; Ramsey, Corsini, Peters, & Eckert, 2017). People can also receive health information via informal personal communication with their friends, family or colleagues or more formally via health professionals (Ledford, 2012). The choice of medium or channel used to deliver a health message may affect the way that the information is received. Bounsanga, Voss, Crum, and Hung (2016) found that receipt of health information from the internet was associated with better health status, whereas health information from social media, health care apps, and television, newspapers and radios, was not.

Health information channels can be categorised as active or passive (Dutta-Bergman, 2004). The internet is an active channel because people purposefully and actively search for information via this channel. In contrast, radio and television are considered to be passive channels because when using them people simply come across health information (Dutta-Bergman, 2004). Health-orientated people use active channels more frequently whereas people who are not health-orientated tend to receive their health information from passive channels (Dutta-Bergman, 2004). Four other channel characteristics that have been found to

affect choice of channel used to find health information are access to medical expertise, tailorability, anonymity, and convenience (Rains & Ruppel, 2016; Ruppel & Rains, 2012).

Different people have access to various levels of resources (e.g., money, power, knowledge, education). People who have access to extensive resources have been found to first search the internet for health information. In contrast, individuals with fewer resources have generally used offline information channels when they commence a search for health information (Manierre, 2016). This digital divide, or difference in channel selection for health information, has been theorised to contribute to the “knowledge gap,” where individuals who are in privileged social and economic positions are found to benefit more from health information than people who are not (Manierre, 2016).

Similarly, people vary in their preferences for the channels through which their *mental illness information* is delivered. When surveying the mental health information preferences of Canadians aged between 18-35 years, Cunningham et al. (2014) identified three distinct groups: the virtual group who preferred to get their information via online sources (28.7%), participants who preferred more conventional sources such as books or leaflets recommended by a doctor (30.1%), and the low interest group who invested little time in seeking out mental health information (41.2%). Leach, Christensen, Griffiths, Jorm, and Mackinnon (2007) conducted a survey of Australian adults to explore their channel preferences. They found that channel preferences varied: some people preferred to receive mental illness information from health care providers and others preferred to use websites. They concluded that it was important that mental illness information be delivered via multiple channels to suit individuals’ various needs (Leach et al., 2007).

2.6 Summary

The provision of mental illness information is important. In this review I have cited four different streams of evidence to support this argument. First, absence of information about mental illness is a barrier to service use among people who have a mental illness. Second, health communication theory suggests delivery of health information is a necessary component of interventions to promote the uptake of healthy behaviours. Thus, it is reasonable to assume that the delivery of mental illness related information is a necessary component of interventions to promote mental wellbeing. Third, between a third and half of people in clinical samples, and one out of every twenty community members are conscious of needing mental illness information. Fourth, many who are receiving mental health services, and many who care for them, report they are dissatisfied with the received care because of the poor quality of mental illness information that they received. In this review I also showed that the impact of mental illness information may vary if it is delivered via different channels.

While a review of the literature relating to mental illness information shows the importance of such information, there is much we do not know about its delivery. I have not identified any national estimates of the *extent* of receipt and perceived helpfulness of such information. It is important to know this, as such estimates will allow us to evaluate our current mental health promotion efforts. We know little about who in the community is receiving such information and who is not, and we do not know from what channels they are receiving it. This information is critical to inform the design of better targeted mental health promotion campaigns.

Chapter 3: Origins of the quantitative data set used in epidemiological analyses

Epidemiological analyses are presented in three of the Chapters (4, 6 and 7) of this dissertation. The data analysed in each of the chapters came from the 2007 Australian National Survey of Mental Health and Wellbeing conducted by the Australian Bureau of Statistics (Australian Bureau of Statistics, 2008). The Australian Bureau of Statistics has produced two large publications describing this survey (Australian Bureau of Statistics, 2008, 2009). In this chapter I am not attempting to replicate these works, rather my aim is to provide the reader with enough information so that they may understand the quality of the data set I have analysed.

3.1 The history of national mental health surveys

The World Health Organisation's (WHO) global burden of disease study revealed that mental illnesses are among the most burdensome (Murray & Lopez, 1997). One third of disability worldwide results from mental illness (Vigo, Thornicroft, & Atun, 2016). To obtain the information needed by mental health policy makers, the WHO Mental Health Survey Initiative commenced (Kessler, Haro, Heeringa, Pennell, & Ustun, 2006). This initiative supports researchers as they conduct national mental health surveys, promoting the use of a standardised instrument, the CIDI [the Composite International Diagnostic Interview (Kessler & Üstün, 2004)]. These surveys have been conducted in 28 countries with more than 155,000 participants (The World Mental Health Survey Initiative, 2018, 10 May).

When a CIDI interview is complete the available data can be used to generate mental illness diagnoses (Kessler et al., 2006). Use of the CIDI allows for the identification not only of respondents who are aware they have a mental illness but also people who have a mental illness but are unaware of their condition. When used with an appropriate sample, CIDI data

can be used to estimate the prevalence of mental disorders (Slade et al., 2009). Such information is crucial in designing effective mental health policy (Slade et al., 2009).

Extensive work was done examining the reliability and validity of early versions of the CIDI and the instrument that it was built around, the Diagnostic Interview Schedule (DIS). Much of this work was summarised by Wittchen (1994), who reported that test-retest and inter-rater reliability studies all indicated that the CIDI had good to excellent kappa coefficients for all the diagnostic sections, but that more work needed to be done to examine the validity of the instrument. Good concordance was shown when a blind trial was conducted comparing CIDI diagnoses for anxiety, mood and substance use disorders and diagnoses made using the SCID [Structured Clinical Interview for the Diagnostic Statistical Manual fourth version] (First, Spitzer, Gibbon, & Williams, 2002; Kessler et al., 2005).

3.2 The 2007 Australian National Survey of Mental Health and Wellbeing

In 2007, the second Australian National Survey of Mental Health and Wellbeing was conducted, the first having been carried out a decade earlier (Australian Bureau of Statistics, 1998, 2008). The 2007 Australian National Survey of Mental Health and Wellbeing incorporated the anxiety disorders, affective disorders, and substance use disorders modules from the CIDI-3 (Kessler & Üstün, 2004). Information was collected about the level of impairment these illnesses caused, health service use, and demographic characteristics of the participants.

The instrument that became the 2007 National Survey and Mental Health and Wellbeing went through two major phases of testing prior to its use (Australian Bureau of Statistics, 2009). During the *pre-testing phase* two rounds of cognitive interviewing were conducted, one round in Sydney with 12 participants, and one in Canberra with 15 participants. Cognitive interviewing occurs within semi-structured interviews when

respondents are asked about their interpretation of questions. Also, during this pre-testing phase, experts were asked to evaluate the instrument. Because of this phase of testing some questions were removed, changes were made in the sequencing of questions, some interviewer instructions were modified, and amendments were made to the wording of some questions.

The second phase of development was the *field-testing phase*. A pilot test was conducted in Queensland during November 2006 and residents of approximately 250 dwellings in both urban and rural areas were involved. The final test of the instrument was the dress rehearsal. The dress rehearsal was conducted in Sydney and Perth from April to May 2007 and again involved residents from approximately 250 dwellings.

When data was collected for the 2007 Australian National Survey of Mental Health and Wellbeing dwellings that were included were selected using a stratified multistage area sampling (Australian Bureau of Statistics, 2009, p. 34; Jessen & Jessen, 1978); initially 17,352 private dwellings across Australia were selected for inclusion in the survey. This sample was reduced to 14,805 because households were excluded if there was no one in the household of the appropriate age (16-85 years), no one who could read English sufficiently or the dwelling was vacant, under construction or derelict (Australian Bureau of Statistics, 2009). As only people living in private dwellings were included in the sample no Australians who were homeless, in prison, hospitalised or in nursing homes were surveyed.

Initially an approach letter describing the study was mailed to inhabitants in the selected dwellings. After gathering basic information about the residents of the dwelling, trained interviewers sought to interview a randomly selected person from the household. Face-to-face interviews at private dwellings were conducted from August to December 2007. Participation was voluntary. On average, the interviews lasted 90 minutes. There were 8,841

(4,027 males and 4814 females) respondents who completed the survey. The mean age of the respondents was 46.4 years ($SD=19$ years).

The overall response rate was 60%, however, there was variation in the response rate across the different Australian states, with Victoria and Northern territory having the lowest rate at 55%, and Tasmania having the highest at 77% (Australian Bureau of Statistics, 2009, p. 32). The Australian Bureau of Statistics surveyed a subset of non-responders ($n= 151$; 40% response rate). The non-responders survey showed that older adults and females were over-represented in the 2007 National Survey of Mental Health and Wellbeing (Australian Bureau of Statistics, 2009, p. 156). The Australian Bureau of Statistics also compared descriptive data from the 2007 National Survey of Mental Health and Wellbeing with four other sources of national data, the 2006 Census of Population and Housing, the 2004-5 National Health Survey, the 2007 Survey of Education and Work and the monthly Labour Force Survey. Adjustments were made when weighting the National Survey of Mental Health and Wellbeing data to compensate for detected differences in educational attainment, employment status and household composition (Australian Bureau of Statistics, 2009).

3.3 The two questions focused on receipt of mental illness information

While most of the questions used in the survey were taken directly from the CIDI-3 (Kessler & Üstün, 2004), the exception was the service use module which included questions designed specifically for the Australian context (Australian Bureau of Statistics, 2008). In preparation for the 2007 National Survey of Mental Health and Wellbeing a team, including the author of this dissertation, designed this module. Included in this module were two questions focused on receipt of mental illness information. The first was: In the past 12 months have you received information about mental illness, its treatment and available services from any of the sources on the list? If yes: Which ones? Sources listed were:

internet, fiction book (story), non-fiction book (factual account), newspaper or magazine, television, radio, and pamphlet. Participants who indicated they had received mental illness information were then asked: Which of these [sources] gave information that was helpful to you for problems with your mental health (see Appendix A)?

When we (myself and one of the my co-supervisors – Graham Meadows) initially wrote the two questions about receipt of mental illness information we purposely used wording that was similar to that used to inquire about the need for mental illness related information in the Perceived Need for Care Questionnaire (Meadows, Burgess, et al., 2000; Meadows, Harvey, et al., 2000). The Perceived Need for Care Questionnaire has good reliability and construct validity (Meadows, Harvey, et al., 2000). Further, as it was included in the first Australian National Survey of Mental Health and Wellbeing (Meadows, Burgess, et al., 2000) and the Canadian National Mental Health Survey (Sareen, Cox, Afifi, Clara, & Yu, 2005) it has demonstrated its usefulness in the context of national surveys.

No changes were made to the two questions about receipt of mental illness information following the pre-testing and the field-testing phases of the survey development. To the best of my knowledge these are the first questions on mental illness information receipt to be included in a national mental health survey.

3.4 Ethical consideration in the use of data from the 2007 National Survey of Mental Health and Wellbeing

The 2007 National Survey of Mental Health and Wellbeing was conducted by the Australian Bureau of Statistics under the authority of the Census and Statistics Act 1905. Legislation requires that the Australian Bureau of Statistics release no identifiable information thus ensuring the confidentiality of participants. Specifically trained interviewers conducted face-to-face interviews at the respondents' residences (Australian Bureau of

Statistics, 2009, p.17). As I was not directly involved in collecting the data for the 2007 Australian National Survey of Mental Health and Wellbeing and the data provided by the Australian Bureau of Statistics were de-identified data, the ethics procedures and considerations were somewhat different from those where the researcher has direct contact with their participants. Exemption from institutional ethical approval was granted for use of existing de-identified data by the Monash University Human Research Ethics Committee in accordance with the National Health and Medical Research Council National Statement on Ethical Conduct in Human Research (National Health Medical Research Council, 2007). In the next chapter I present an analysis of data from the 2007 National Survey of Mental Health and Wellbeing relating to the receipt and perceived helpfulness of mental illness related information in the Australian context.

Chapter 4: Paper 1, Receipt and perceived helpfulness of mental illness information: Findings from the Australian National Survey of Mental Health and Wellbeing

The chapter was first published in the journal *Health Communication*. The reference for the original publication is as follows:

Graham, A. L., Brooker, J., Hasking, P., Clarke, D., & Meadows, G. (2017). Receipt and Perceived Helpfulness of Mental Illness Information: Findings from the Australian National Survey of Mental Health and Wellbeing. *Health Communication*, 1-7. doi:10.1080/10410236.2017.1384355

4.1 Abstract

The distribution of mental illness information is a crucial element of mental health promotion initiatives. We assessed the receipt and perceived helpfulness of such information in Australia. Data from the Australian National Survey of Mental Health and Wellbeing indicated that, during the year prior to the survey, 33.7% of Australians received mental illness information; of these, 51.2% found it helpful. Among people with a mental disorder, 46.1% received information; of these, 67.4% found it helpful. Non-English speakers and the socially disadvantaged were less likely to receive mental illness information. Older and less educated respondents were less likely to both receive mental illness information and find it helpful. Mental health service users were more likely to receive mental illness information perceived as helpful than those who had not accessed such services. Better targeted information interventions are required to ensure those most likely to benefit receive mental illness related information.

Worldwide, annually, 18% of people experience a common mental disorder and 29% experience such a disorder during their lifetime; the majority of these people go without effective treatments (Sørensen et al., 2017; Steel et al., 2014). Mental illness information distribution is vital for both the prevention and treatment of mental illness (Jorm, 2012). Information provision improves mental health literacy, promotes engagement with mental health services (Gulliver et al., 2010; Smith & Shochet, 2011) and improves mental health treatment outcomes (Donker et al., 2009). Further, providing psycho-education to carers of those with severe mental illness improves the caring experience (National Collaborating Centre for Mental Health, 2014).

Marketers wishing to influence consumer behavior have developed models, including the consumer information processing model (CIP model), to describe the attainment and impact of information. The CIP model depicts five components: 1. motivation, 2. attention, 3. information acquisition and evaluation, 4. decision process, and 5. consumption and learning process (Bettman, 1979). While the CIP model has been used in health-related fields [e.g., eating habits, cancer screening (Glanz et al., 2012; Schoenberg et al., 2013)] it has not been used in the mental health arena. We are particularly interested in the notion that, for people to act on information, it must be available, perceived as useful and easily understood (component 3).

Researchers examining mass communication campaigns have repeatedly shown there is a “knowledge gap”: Wealthy and highly educated people benefit more from information than the less privileged (Buchthal et al., 2011), including health information (Anker, Reinhart, & Feeley, 2011; Kelley, Su, & Britigan, 2016). Whether such a “knowledge gap” exists in relation to *mental illness* information is unclear. Exploring this is important because we need to know whether those most in need of information benefit from it.

The Australian National Survey of Mental Health and Wellbeing (NSMHWB) included two questions about mental illness information. Using data from these questions our aims were to:

1. Determine the extent of mental illness information receipt by Australians, the channels from which such information was received, and its perceived helpfulness.
2. Examine information receipt and perceived helpfulness in relation to whether or not individuals had a mental illness.
3. Determine whether those who received helpful mental illness information differed from those who did not in terms of socio-demographic, illness, carer and mental health service use characteristics.
4. Examine whether personal characteristics (i.e., sex, education level and financial position) or sickness characteristics and carer characteristics (i.e., number of mental disorders and type of disorder) predicted who would receive such information.
5. Examine whether inclusion of the variable “mental health service use” strengthens predictive models of who receives helpful mental illness information.

4.2 Method

Data from the most recent NSMHWB were analysed. The Australian Bureau of Statistics (ABS) conducted this survey from August-December 2007 using a stratified multistage probability sample. The sample comprised 4,027 males and 4,814 females, aged 16-85 years (M=46.4, SD=19.0).

4.2.1 Measures.

Among the questions on health service use were two that concerned mental illness information. The first was: In the past 12 months have you received information about

mental illness, its treatment and available services from any of the sources on the list? If yes: Which ones? Sources listed were: internet, fiction book (story), non-fiction book (factual account), newspaper or magazine, television, radio, and pamphlet. Participants who indicated they had received mental illness information were then asked: Which of these [sources] gave information that was helpful to you for problems with your mental health?

Anker et al. (2011) identified socio-demographic factors that differentiate between those who do and do not seek health information. In this study we have incorporated eight of these *socio-demographic characteristics*: sex (male/female), main language spoken (English/not English), marital status (never married/widowed, divorced or separated/married), employment status (employed/unemployed/not in the labor force), population density (major urban - population more than 100,000/other urban – population = 1,000-99,999 /bounded locality – population = 200-999/ other), age, highest education level (below year 8/ year 9/year 10/year 11/year 12/skilled vocation qualification/Undergraduate degree or diploma/Postgraduate degree or diploma) and index of disadvantage (range 1-10, the lower the score the more the disadvantage).

Two variables pertained to *mental illness* in the past 12 months: 1. co-morbidity of mental health disorders and physical conditions (any mental disorder only/any physical condition only/any mental disorder comorbid with a physical condition/no mental disorder and no physical condition); and 2. number of mental health disorders (range 0-11). Twelve-month diagnosis of mental illness was made using the 10th version of the International Classification of Diseases (ICD-10) (World Health Organization, 1992). *The two variables depicting the care-giving role* were: 1. whether the person was in a care giving role (yes/no); and 2. type of condition suffered by relatives (only mental disorder/ only physical disorder/ both a mental and physical disorder/ no mental or physical disorder/ no immediate family

member, not known). The final variable used in the analysis was *mental health service use*; all participants were asked if they had accessed mental health services in the past year.

4.2.2 Analysis.

The data provided by the ABS included a series of weights. Unless otherwise stated, all the statistics reported in this paper were calculated using the delete-a-group jackknife method of replication with 60 replicate groups, available in STATA 9 (StataCorp, 2005). Prevalence estimates of the Australian population in various categories were calculated. The number of Australians with and without a mental illness who received mental health information was compared using adjusted Wald tests; this same technique was used to compare the number of those with and without a mental illness who perceived this information as helpful (Aims 1 and 2).

One-way ANOVA's (for continuous variables) and chi-square test (for categorical variables) were undertaken to examine differences between those who did and did not receive helpful mental illness-related information (Aim 3). One variable, "population density", was unrelated to mental illness information receipt and helpful mental illness information receipt, and was excluded from subsequent analyses.

Heckman probit analyses showed there was no statistically significant association between the two questions "did you receive mental illness information?" and "was that information helpful?" (Van de Ven & Van Praag, 1981). Thus, it was appropriate to examine data from these questions separately, using probit models.

To address Aims 4 and 5, four sets of predictor variables were used to predict mental illness information receipt and helpful mental illness information receipt (i.e., eight models in all). Set 1 included illness and carer characteristics, while set 2 used socio-demographic characteristics. Set 3 incorporated illness, carer and socio-demographic characteristics. Set 4

included all predictors in set 3, as well as mental health service use. Initially these models were constructed using weighted data. It was not possible to test further evaluation criteria for the probit models using the weighted data from the NSMHWB, as such tests assume independence among respondents. As there was very little difference in the model parameters when using the weighted and unweighted data, the Bayesian information criteria (BIC), was calculated using the unweighted data (Schwarz, 1978). With the BIC a smaller value is indicative of a better fitting model (StataCorp, 2009, p. 379). A model with a BIC in the range of 0-2 is weakly preferred, 2-6 positively preferred, 6-10 strongly preferred, and greater than 10 is very strongly preferred (Raftery, 1995).

4.3 Results

4.3.1 Aim 1.

Using data from the NSMHWB an estimated 33.7%, 95% CI [32.3, 35.3] of the Australian population recalled receiving information about mental illness in the 12 months prior to the survey. Of those who received this information, 51.2%, 95% CI [48.7, 53.7] found it helpful. Thus, 17.3%, 95% CI [16.1, 18.4] of the Australian population both received mental illness information and found it helpful.

Regarding sources, 20.5% of Australians, 95% CI [19.3, 21.7] received mental information from television and 5.1%, 95% CI [4.4, 5.7] of Australians found it helpful. The corresponding figures for other sources were: 15.6%, 95% CI [14.5, 16.6] from pamphlets, 5.2%, 95% CI [4.5, 5.8] found it helpful; 13.7%, 95% CI [12.4, 15.0] from newspapers or magazines, 3.2%, 95% CI [2.7, 3.8] found it helpful; 9.4%, 95% CI [8.4, 10.4] from radio, 1.8%, 95% CI [1.4, 2.1] found it helpful; 8.4%, 95% CI [7.4, 9.4] from the internet, 4.2%, 95% CI [3.4, 4.9] found it helpful; 4.4% 95% CI [3.8, 4.9] from non-fiction book, 1.8% 95% CI [1.4, 2.2] found it helpful; 1.8%, 95% CI [1.3, 2.2] from fiction books, 0.6%, 95%

CI [0.3, 0.9] found it helpful. Thus, 25% of those who received mental illness related information from television found it helpful. The corresponding figures for the other channels were 33% pamphlets, 23% newspapers or magazines, 19% radio, 49% internet, 42% non-fiction books and 34% fiction books.

4.3.2 Aim 2.

Of those who met criteria for an ICD-10 mental disorder, 46.1%, 95% CI [42.6, 49.6] received mental illness information; of these 67% found it helpful. Compared to those without mental illness, those with a mental disorder were significantly more likely to receive ($F(1,59)=67.7, p<.000$) and find mental illness information helpful ($F(1,59)=104.8, p<.000$). Of those who had a mental illness and accessed mental health services, 86% found the mental illness information they received helpful. In contrast, 49% of those with a mental illness who did not access mental health services perceived the information they received to be helpful.

4.3.3 Aim 3.

4.3.3.1 Bi-variate analysis.

Twelve of the thirteen predictive variables were significantly related to *receipt of mental illness information* (Table 4.1). Analysis of the socio-demographic variables revealed that those who received mental illness information were more likely to be younger, more educated, less social disadvantaged, female, reside in households with higher incomes, speak English as their main language, have never married and be employed. Analysis of the illness-related characteristics showed that those who received mental illness information were likely to have a higher number of mental health disorders and have both a mental disorder and a physical condition. Furthermore, they were more likely to be in a care-giving role and to be caring for someone with mental and physical disorders. Finally, those who received mental illness information were more likely to have accessed mental health services

Table 4.1

Bi-variate Analyses

In the past 12 months have you received information about mental illness, its treatment & available services?						
ANOVA (N=8841)						
			No (N=5818) $\bar{X}^a(95\% CI^b)$	Yes (N=3023) $\bar{X}^a(95\% CI)$	F value	Prob ^c
Age			45.6 (45.3-45.9)	41.7 (41.1-42.3)	78.9	<.000
Index of disadvantage			5.7 (5.5-5.8)	6.1 (5.9-6.3)	14.6	<.000
Number of ICD ^d mental health disorders			.28 (.25-.31)	.55 (.5-.6)	70.6	<.000
Chi-squared						
	χ^2 ^e	Prob	Group most likely to receive information listed first		Proportion receiving information	
Sex	62.2	<.000	Females (n=4814)		.377	
			Males (n=4027)		.289	
Main language spoken at home	42.8	<.000	English (n=8234)		.348	
			Not English (n=607)		.230	
Marital status	39.1	<.000	Never married (n=2894)		.383	
			Married (n=4002)		.318	
			Widowed/Divorced/Separated (n=1945)		.310	
Employment status	64.9	<.000	Employed (n=5499)		.367	
			Unemployed (n=216)		.329	
			Not in labor force (n=3126)		.279	
Co-morbidity of ICD disorder classes & physical conditions*	207.1	<.000	Any mental disorder & physical condition (n=1049)		.482	
			Any mental disorder only (n=719)		.431	
			Any physical condition only (n=3554)		.320	
			No mental or physical condition (n=3519)		.295	
Population density of section of the state	16.7	.056	Major urban (n=5683)		.333	
			Other urban (n=2054)		.371	
			Bounded locality (n=1104)		.301	
Highest education level	191.3	<.000	Below Year 8 (n=623)		.196	
			Year 9 (n=510)		.252	
			Year 10 (n=1148)		.267	
			Year 11 (n=520)		.336	
			Year 12 (n=1116)		.327	
			Skilled vocation qualification (n=1987)		.324	
			Undergraduate degree or diploma (n=1107)		.397	
			Postgraduate degree or diploma (n=1830)		.442	
Type of condition suffered by relative	267.0	<.000	Relative with mental & physical disorder (n=2344)		.441	
			Relative with only mental disorder (n=1090)		.438	
			Relative with only physical disorder (n=2533)		.282	
			No immediate family members/not known/refusal (n=96)		.280	
			No relative with a mental or physical disorder (n=2778)		.262	
Care giving role	158.4	<.000	Yes (n=1897)		.457	
			No (n=6944)		.304	
Accessed mental health services in the last 12 months	333.8	<.000	Yes (n=1128)		.580	
			No (n=7713)		.310	

Was the information helpful?

ANOVA (The sample were those who received mental illness related information, n=3032)

	No (N=7288) \bar{X} (95% CI)	Yes (N=1553) \bar{X} (95% CI)	F value	Prob
Age	42.1(41.2-42.9)	41.3(40.5-42.2)	1.4	0.240
Index of disadvantage	6.7 (5.9-6.5)	5.9(5.7-6.1)	4.91	0.030
Number of ICD mental health disorders	.32(.26-.39)	.78(.67-.88)	44.7	<.000

Chi-squared

	χ^2	Prob	Group most likely to receive helpful information listed first	Proportion receiving helpful information
Sex	44.4	0.002	Females (n=1785) Males (n=1247)	.543 .471
Main language spoken at home?	7.3	0.378	English (n=2880) Not English (n=152)	.508 .569
Marital status	15.1	0.311	Never married (n=2894) Married (n=1309) Widowed/Divorced/Separated (n=585)	.537 .492 .511
Employment status	28.2	0.087	Employed (n=2116) Unemployed (n=80) Not in labor force (n=836)	.464 .606 .584
Co-morbidity of ICD disorder classes & physical conditions*	406.0	<.000	Any mental disorder only (n=337) Any mental disorder & physical condition (n=530) Any physical condition only (n=1081) No mental or physical condition (n=1084)	.676 .654 .469 .440
Population density of sections of the state	14.6	.275	Major urban (n=1925) Other urban (n=757) Bounded locality (n=350)	.521 .475 .530
Highest education level	37.3	.457	Below Year 8 (n=120) Year 9 (n=127) Year 10 (n=303) Year 11 (n=181) Year 12 (n=380) Skilled vocation qualification (n=647) Undergraduate degree or diploma (n=444) Postgraduate degree or diploma (n=830)	.400 .613 .526 .541 .498 .492 .522 .515
Type of condition suffered by relative	45.9	.105	Relative with mental & physical condition (n=1068) Relative with only mental disorder (n=453) Relative with only physical disorder (n=751) No immediate family members/ not known/refusal (n=24) No relative with a mental or physical disorder (n=763)	.537 .549 .481 .259 .487
Care giving role	53.6	.006	Yes (n=844) No (n=2188)	.571 .486
Accessed mental health services in the last 12 months	702.4	<.000	Yes (n=668) No (n=2364)	.463 .133

a: \bar{X} = mean, b: 95% CI= 95% confidence interval c: prob=probability d: ICD=International Classification of Diseases Version 10 e: χ^2 =chi-squared

Six of the predictive variables were significantly related to *receipt of helpful mental illness information* (Table 4.1). Those who were more likely to have received helpful mental illness information were more likely to: be disadvantaged, have a higher number of mental illnesses, be female, either have a mental disorder only or a mental and a physical condition, be in a care giving role and have accessed mental health service.

4.3.3.2 *Multivariate analyses.*

All eight probit models explained significantly more variation than the null model. The two models incorporating all the predictive variables (set 4) were the best fitting models (see Table 4.2). Receiving mental health information was related to 9 of the 12 predictors: co-morbidity of mental and physical illness, care giving role, sex, employment status, educational attainment, age, disadvantage, main language spoken, and any mental health service use (see Table 4.3). Seven of 12 predictor variables were related to receiving helpful mental illness related information; these were number of mental disorders, co-morbidity of mental and physical illness, care giving role, sex, educational attainment, age and any mental health service use (see Table 4.3).

Table 4.2

Probit regression models of 1. Receipt of mental illness information and 2. Perceived helpfulness of mental illness information

Predictive variables	Probit Analyses			
		F value	Prob. of F	BIC ^a
Set 1: Illness & carer characteristics	Received MI ^b information	43.77	<.000	11131.6
	Found received MI information helpful	50.76	<.000	7924.5
Set 2: Socio-demographic characteristics	Received MI information	37.46	<.000	11006.9
	Found received MI information helpful	26.29	<.000	8048.0
Set 3: Set 1 and 2 combined Sociodemographic characteristics + Illness & carer characteristics	Received MI information	47.65	<.000	10799.7
	Found received MI information helpful	38.32	<.000	7787.7
Set 4: Set 3 plus mental health service use Sociodemographic characteristics + illness & carer characteristics + service use	Received MI information	47.0	<.000	10659
	Found received MI information helpful	61.9	<.000	7495.4

Notes: a=BIC (Bayesian information criteria), these results should also be interpreted with caution as they were calculated with unweighted data, b=MI (mental illness).

Table 4.3

Models of mental health information receipt constructed utilising probit regression using data from the National Survey of Mental Health and Wellbeing.

Predictive variables			Illness characteristics		Carer Characteristics		Socio-demographic characteristics						Mental health service use	
			No. of mental disorders	Co-morbidity (mental & physical illness)	Type of condition	Care giving role ^g	Sex ^g	marital status	Employment status	Educational attainment	Age	Index of disadvantage	Main language spoken ^g	Any mental health service use ^g
Set 1: Illness & carer characteristics	Received MH info ^d	Coef ^a	.132 (.020)	- ^c	-.045 (.019)	-.329 (.044)	f							
		Prob ^b	<.000	-	.020	<.000								
	Found helpful ^e	Coef	.184 (.023)	-.057 (.023)	-	-.307 (.048)								
		Prob	<.000	.016	-	<.000								
Set 2: Socio-demographic Characteristics	Received MH info	Coef				.250 (.043)	-	-	.080 (.008)	-.005 (.001)	-	-.399 (.095)		
		Prob				<.000	-	-	<.000	.001	-	<.000		
	Found helpful	Coef				.273 (.035)	-	-	.068 (.009)	-.004 (.001)	-	-.244 (.097)		
		Prob				<.000	-	-	<.000	.004	-	.015		
Set 3: Socio-demographic, illness & carer characteristics	Received MH info	Coef	.105 (.021)	-.063 (.022)	-	-.338 (.044)	.199 (.046)	-	-	.080 (.008)	.005 (.001)	.016 (.007)	-.327 (.096)	
		Prob	<.000	.006	-	<.000	<.000	-	-	<.000	.001	.047	.001	
	Found helpful	Coef	.162 (.025)	-.078 (.023)	-	-.306 (.050)	.221 (.037)	-	-	.068 (.009)	.004 (.001)	-	-	
		Prob	<.000	.001	-	<.000	<.000	-	-	<.000	.009	-	-	
Set 4: Sociodemographic, illness & carer characteristics and service use	Received MH info	Coef	-	-.056 (.022)	-	-.310 (.042)	.176 (.045)	-	-.061 (.025)	.077 (.008)	-.005 (.001)	.017 (.008)	-.316 (.094)	-.146 (.017)
		Prob	-	.015	-	<.000	<.000	-	.019	<.000	<.000	.040	.001	<.000
	Found helpful	Coef	.056 (.025)	-.062 (.023)	-	-.264 (.048)	.188 (.035)	-	-	.063 (.009)	-.004 (.001)	-	-	-.208 (.018)
		Prob	.031	.011	-	<.000	<.000	-	-	<.000	.006	-	-	<.000

Notes: Numbers in brackets are standard errors. a: Coef=coefficient, b: Prob= Probability, c: note only significant results are reported in the table, d: Received MH info, summarises the following question “In the past 12 months have you received information about mental illness, its treatment & available services?”, e: Found helpful, summarises the following question “Was the information helpful?”, f: Shaded cells indicate variables that were not included in the particular model, g: These variables are dichotomous and were coded in the following way (Care giving role 1=yes, 2=no; Sex 1=male, 2=female; Any mental health service use 1=yes, 2=no)

4.3.4 Aim 4.

Comparison of the BIC of the probit models constructed using set 1 (illness and carer characteristics) and set 2 (socio-demographic characteristics) revealed that the strongest model of *mental illness information receipt* used the socio-demographic variables as predictors [see Table 4.2: $\Delta\text{BIC} = 124.7$; Raftery, 1995]. In contrast, the strongest model depicting the *perceived helpfulness of information* used illness and carer characteristics as predictors [see Table 4.2: $\Delta\text{BIC} = 123.5$].

4.3.5 Aim 5.

The only difference between the analysis conducted using set 3 of the predictor variables and that using set 4 was that in set 4 the variable *any mental health service use* was included. Thus, the changes observed in the BIC values indicate how the fit of the model improves with the addition of this single dichotomous variable [see Table 4.2: received mental health information $\Delta\text{BIC} = 1407$; found the received mental illness information helpful $\Delta\text{BIC} = 292$], thus the models that included the mental health service use variable were the strongly preferred models.

4.4 Discussion

The CIP model suggests that to understand the impact of information, it is necessary to know not only whether information has been received but also whether it has been perceived as helpful. Other researchers have used national data sources to explore who received mental illness information and from what channels (Reavley, Cvetkovski, & Jorm, 2011). Nonetheless, they have not linked this exploration to an investigation of whether information was perceived as helpful. Addressing this gap, our exploration shows that among Australians with a mental illness, approximately two thirds who received such information found it

helpful. Among the rest of the population, just under half who received mental health information found it helpful.

Even in a wealthy country such as Australia, there were many in the general population (65%) and many people with mental illness (56%) who had not received mental illness information in the past year. Those who were male, older and less educated were less likely to both receive and find mental illness-related information helpful. Further, those who did not speak English as their main language and who were socially disadvantaged (i.e., unemployed and financially disadvantaged) were less likely to receive mental illness information. In contrast, respondents who accessed mental health services, had mental illness themselves or were carers were more likely to have received mental illness information and found it helpful. Unsurprisingly, a greater proportion of those who had a mental illness reported they had received mental illness information than those who did not. However, the finding that less than half (46%) of those with a mental illness received mental illness information is cause for concern. Future research needs to address the question of why most people with mental illness are not receiving mental illness related information.

The CIP model suggests that information acquisition occurs when people search for information or are *confronted* by it. It is probable that mental illness information was more helpful to those who sought it because they felt they needed it. This may explain why, in this study, the proportion who found the information they received helpful was higher within the active channels (i.e., internet, non-fiction books). In 2007, Australians were less likely to obtain mental illness information from the internet than television, pamphlet, newspaper/magazine, or the radio, however the emergence of e-communication over the last decade has likely influenced access to mental illness information.

The finding that respondents who accessed mental health services were more likely to receive helpful mental illness information than those who did not, may be indicative of the skills of mental health workers in filtering and delivering mental illness customised information. The preparation of targeted messages (message tailoring) has been found to be an effective strategy in health communication (Lustria et al., 2013). It seems reasonable to conjecture that those who seek out mental health services are more likely to receive messages from mental health professionals or be directed to channels specifically targeted to their needs.

4.4.1 Limitations.

The NSMHWB is the only nationally representative dataset which contains information about receipt and perceived helpfulness of mental illness information. Nonetheless, the limitations of the survey need to be considered. First, since 2007 there have been a number of changes in Australia likely to have impacted access to mental illness information, including information dissemination using mobile technology. Second, participants in the NSMHWB faced a cognitively challenging task, as many of the questions required recall of experiences during a twelve-month time frame. Third, while respondents were subject to an extensive interview, they were not asked whether they had a previous mental illness diagnosis. Prior diagnosis would probably have impacted on whether an individual sought and received mental illness information.

4.4.2 Conclusions.

The results presented here are the first nationally representative Australian estimates of mental illness information receipt and perceived helpfulness and suggest it would be appropriate to refine the distribution of mental illness information to ensure those most in

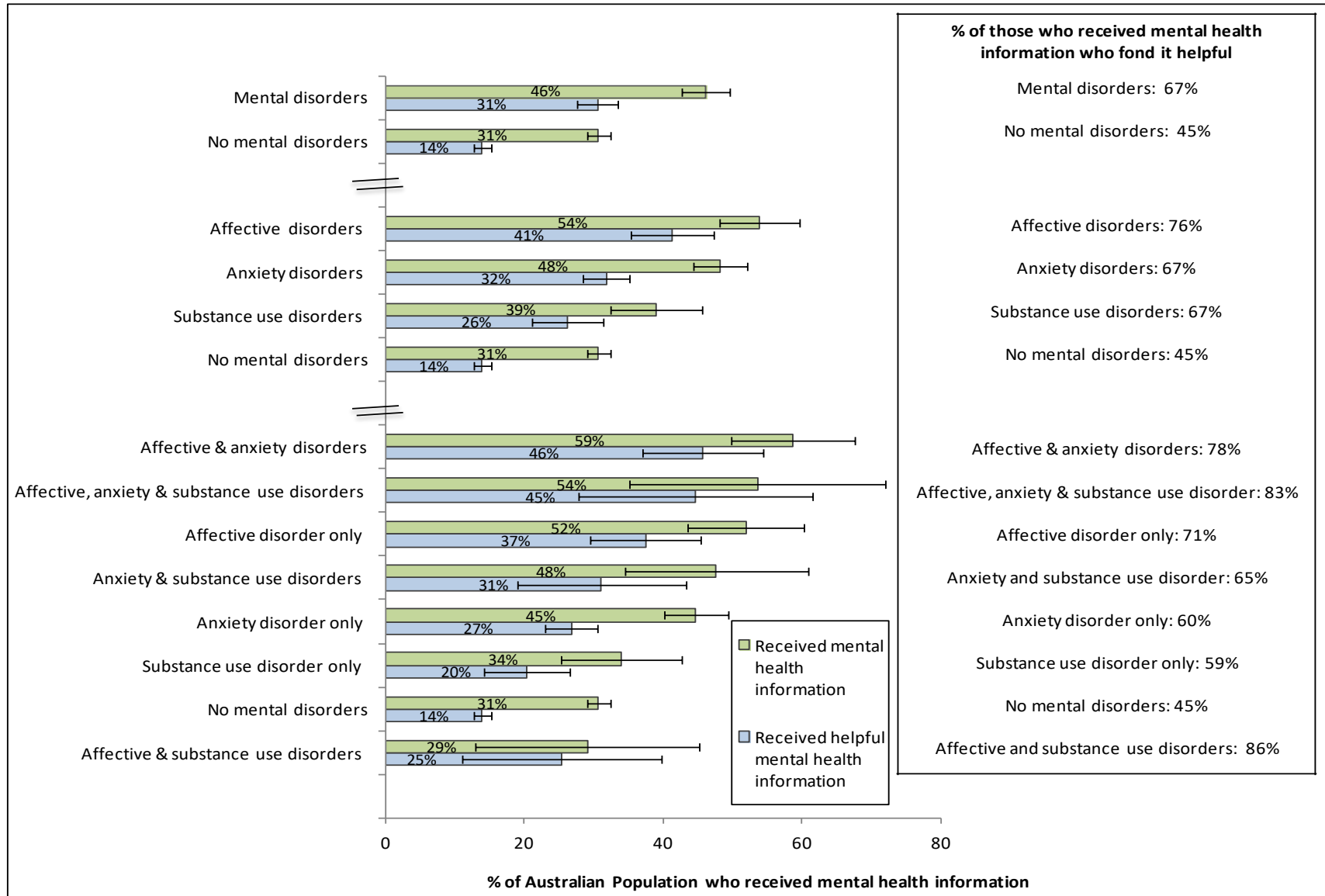
need receive helpful information. These findings can be used as benchmarks by which to evaluate future efforts to distribute mental illness information.

Chapter 5: Shifting the focus from all Australians with mental illness to respondents with depression

In Chapter 4, I reported that Australians with mental illness were significantly more likely to receive mental illness information and find the received information helpful than Australians without a mental illness. However, further analysis revealed variation in the extent of receipt among respondents with different classes of mental illnesses, and different patterns of co-morbidity (see Figure 5.1). My analysis is consistent with results reported by Reavley et al. (2011) who found that Australians with anxiety or affective disorders were more likely than other Australians to receive mental illness information, while people with substance use disorders were less likely to receive such information. The extent of receipt of mental illness information varies according to the type of mental illness. Thus, it is probable that there are different factors, mechanisms, and processes that impact the receipt of mental illness information for people with different mental illnesses. Therefore, it was appropriate to narrow the scope of the thesis to examine issues to do with receipt of mental illness information for a single mental illness.

In the subsequent analyses, presented in Chapters 6, 7 and 9, I chose to focus on the receipt of mental illness among people with depression for two reasons. First, estimates suggest that 4.1% of the Australian population are likely to experience a depressive episode during a 12-month period (Slade et al., 2009), thus it is a common illness. Pragmatically, it makes sense to focus on common disorders as there is more extensive data relating to them in the 2007 National Survey of Mental Health and Wellbeing, minimising issues of statistical power when analyses are conducted. Second, depression is the most recognised mental illness among Australians (Reavley & Jorm, 2012). Recognition of depression by Australians has increased; in 1995, 39% of Australians correctly identified depression when presented with a short-written scenario while, in 2011, the rate was 74% (Reavley & Jorm, 2012).

Figure 5.1 Percentage of Australians with various types of mental disorders who received mental illness information.



This increase in the recognition of depression in the Australian community has occurred in part because of the extensive mental health promotion efforts of organisations such as beyondblue (Dunt, Robinson, Selvarajah, & Pirkis, 2010). Beyondblue is an Australian initiative designed to raise awareness and motivate action aimed at depression prevention (Dunt et al., 2010). In the next chapter I will examine the extent of receipt of mental illness information by Australians with depression and characterise people with depression who were less likely to have received such information.

Chapter 6: Paper 2, How people with depression receive and perceive mental illness information: Findings from the Australian National Survey of Mental Health and Wellbeing

The chapter was first published in the *Community Mental Health Journal*. The reference for the original publication is as follows:

Graham, A. L., Hasking, P., Clarke, D., & Meadows, G. (2015). How people with depression receive and perceive mental illness information: findings from the Australian National Survey of Mental Health and Wellbeing. *Community Mental Health Journal*, 51(8), 994-1001. doi:10.1007/s10597-015-9900-6

6.1 Abstract

Despite the recognised importance of accurate mental illness information in help-seeking and improving recovery, little is known about the dissemination of such information to people with depression. With a view to informing effective communication to those most in need, we explored the extent to which mental illness information is received by people with depression, its perceived helpfulness and we characterise those who do not receive such information. Using data from the Australian National Survey of Mental Health and Wellbeing we observed that mental illness information was received by 54.7% of those with depression. Most (76.7%) found it helpful. Pamphlets were the most frequently cited source of information. People who did not receive information were less educated, unlikely to have accessed mental health services and unlikely to believe they had mental health needs. Targeted information campaigns which shape perceptions of need in relation to depression have the potential to reduce the resultant disease burden.

The timely provision of mental illness information can increase help-seeking and improve prognosis for people with a mental illness (Jorm, 2012). Among those receiving mental health care, receipt of mental illness information is associated with improved self-management, adherence to treatment, shared decision making and consumer empowerment (Griffiths & Crisp, 2013). As one of the leading global burdens of disease (Murray & Lopez, 1996), depression is a clear target for accurate and helpful mental illness information provision. Hence, it is vital to ensure that people with depression are receiving quality mental illness information.

We currently know little about the dissemination of mental illness information to people with depression. It is probable that, despite efforts to deliver mental illness information, not all with depression would have received it. Reviews of mass communication campaigns show that there is often a “knowledge gap”. Socio-economic status, education, gender (Buchthal et al., 2011), age (Lee, 2009) and strength of social networks (Gaziano, 1997) have been linked with non-receipt of information. While increasing interest has been paid to mental illness information delivered via new media such as the internet or smart phones (Leach et al., 2007), little work has explored whether the channel of communication influences the impact of information relating to depression. Identifying the most readily accessed and helpful communication channels and characterising those who are disadvantaged by the knowledge gap will inform those designing education campaigns and thereby help to maximise the campaigns’ impact.

The most recent Australian National Survey of Mental Health and Wellbeing provided a chance to explore such questions with a nationally representative sample. Our aims were to determine, among those who have had an episode of depression, (a) the extent of receipt of

mental illness information, (b) the sources of such information and, (c) its perceived helpfulness. Further, we sought to contrast the characteristics of receivers and non-receivers.

6.2 Method

6.2.1 National Survey of Mental Health and Wellbeing (NSMHWB).

Data from the 2007 NSMHWB was used in this cross-sectional study. The survey has been described elsewhere (Slade et al., 2009). Briefly, the Australian Bureau of Statistics (ABS) conducted this survey from August-December 2007 using a stratified multistage probability sample which contained 8,841 people (4,027 males and 4,814 females) aged 16-85 years ($M=46.4$, $SD=19.0$). Respondents lived in private dwellings. Trained interviewers administered the survey, which took an average 90 minutes. Included in the interview were the anxiety, affective and substance use disorder modules from the Composite International Diagnostic Interview, Version 3.0 (CIDI-3) (Kessler & Üstün, 2004). The response rate to the NSMHWB was 60%. Adjustments were made when weighting the data to compensate for detected differences in age, gender, educational attainment, employment status and household composition between the NSMHWB sample and the Australian population (Australian Bureau of Statistics, 2009). Exemption from institutional ethical approval was granted for use of existing de-identified data by the Monash University Human Research Ethics Committee in accordance with the National Health and Medical Research Council National Statement on Ethical Conduct in Human Research (2007).

6.2.2 Measures.

The depression module of the CIDI-3 (Kessler & Üstün, 2004) was used to identify respondents who had a depressive episode in the year prior to the survey. This module has good inter-rater reliability [$Kappa .95$; (Wittchen et al., 1991)] and validity [$Kappa .84$; (Janca, Robins, Bucholz, Early, & Shayka, 1992)]. The International Classification of Diseases (ICD-10) definition of depression was used rather than Diagnostic and Statistics

Manual (DSM-IV) to facilitate comparison with international epidemiological work. Non-hierarchical ICD-10 criteria were also used. To receive an ICD-10 diagnosis of depression at least one of three key symptoms needed to be present most days during a two-week period: (a) persistent sadness or low mood, (b) loss of interest or pleasure, (c) fatigue or low energy (National Centre for Clinical Excellence, 2004).

Two outcomes were of interest in this study: receipt of mental illness information and the perceived helpfulness of this information. Two authors (AG, GM) designed questions to examine these outcomes specifically for the NSMHWB. The first was: In the past 12 months, have you received information about mental illness, its treatment and available services from any of the sources on the list? If yes: Which ones? The sources listed were internet, fiction book (story), non-fiction book (factual account), newspaper or magazine, television, radio, and pamphlet/leaflet/brochure. Participants who indicated that they had received mental illness information were then asked: Which of these gave information that was helpful to you for problems with your mental health? These questions have not been used previously. The NSMHWB involved a development process that included cognitive testing, pilot testing and dress rehearsal phases (Slade et al., 2009). While no problems with these questions were identified during any of these phases, there was no data available from the developmental phase to indicate how the language used in these questions was received or understood. Further, while those examining the impact of on-line mental illness information have asked their participants whether the information they received from the websites was helpful, there has been no published qualitative work examining how such participants understood either the term information or helpfulness (Leach et al., 2007; Oh, Jorm, & Wright, 2009).

To establish the characteristics of people who received both mental illness information and who found it helpful five sets of variables that were either salient predictors of

information receipt or markers of mental health need were used. These were: (a) socio-economic status (education level, employment status, gross weekly household income [range 0-10]), (b) demographics (age [range 16-85], gender), (c) social networks (registered marital status, frequency of contact with family members, frequency of contact with friends), (d) objective need (severity of depression, co-morbidity of mental and physical conditions, co-morbidity among mental health disorder classes), number of mental health conditions (range 1-12), days out of role due to a mental health condition (range 0-365) and (e) perceived need (receipt of mental health services, self-reported psychological distress on Kessler psychological distress scale (range 10-48) [K-10; (Kessler et al., 2002)], perceived need for mental health services).

The Perceived Need for Care Questionnaire (PNCQ) asked respondents if they perceived themselves as having a need for mental health related medication, counselling, social interventions, information or skills training. If respondents identified a need they were asked to indicate the extent to which their needs had been met [i.e., fully met, partially met or unmet (Meadows & Bobevski, 2011)]. Psychological distress was measured using The Kessler Psychological Distress Scale (K-10) which includes 10 questions about emotional states (Kessler et al., 2003).

6.2.3 Analysis.

All the analyses reported were conducted using the delete-a-group jackknife method of replication with 60 replicate groups, available in STATA 11 (StataCorp, 2005). This method allowed us to make population estimates rather than simply explore the prevalence among those sampled. When using this method the degrees of freedom in a particular analysis are dependent on the number of replications rather than the number of subjects. Whenever a percentage is reported it is a weighted percentage and thus is accompanied by a 95%

confidence interval. In contrast, whenever the number of participants is reported it is the unweighted number (i.e., the actual number of respondents from which observations derived). A series of binary comparisons were made comparing those who had depression with those who did not. To facilitate comparison adjusted Wald tests and therefore F statistics are reported for all these comparisons, whether the dependent variable was categorical or continuous. Prevalence estimates and associated confidence intervals were calculated for people who did and did not receive mental illness information and then for people who received helpful mental illness information from various channels. Binary logistic regressions were used to determine relationships between the predictors and outcome variables; if these relationships were significant ($p \leq .05$) this variable was included in subsequent multivariate modelling.

By definition, only people who receive mental illness information can receive *helpful* mental illness information. Specifically, the question “did you receive mental illness information?” is a selection question for the second question “was that information helpful?” To test the independence of the two outcome variables a Heckman probit analysis was conducted (Heckman, 1979). No selection bias was observed thus it was appropriate to construct two separate logistic regression models examining the nature of people who received mental illness information and the nature of people who received *helpful* mental illness information. It was not possible to calculate a pseudo R^2 using weighted data as the test assumes independence among respondents. As there was very little difference in the parameters of the models when using the weighted and unweighted data, McFadden’s pseudo R^2 , Cox and Snell pseudo R^2 and McKelvey and Zavonia R^2 were all calculated using the unweighted data. These results should be interpreted cautiously given the bias in the

unweighted data. This was done to provide an estimate of how much of the variance in the outcome variable the model described.

6.3 Results

6.3.1 Sample characteristics.

Among those sampled were 451 Australians (300 females and 151 males) who had a depressive episode in the 12 months before the survey (12-month prevalence was 5.0%, 95% CI [4.4, 5.6]). It is notable that 64.4% (95% CI [57.7, 71.1]) of those who had a depressive episode also had a physical health condition. Just over half 50.6% (95% CI [43.8, 57.4]) also had an anxiety disorder and 5.3% (95% CI [2.0, 8.7]) had a substance use disorder.

Australians with depression ($n=451$) were different in a number of ways from people without depression ($n=8,390$). They were more likely to be female (62% vs. 50%, $F(1,59)=10.9$, $p=.001$, OR 1.6), unemployed (43% vs. 34%, $F(1,59)=10.1$, $p=.002$, OR 1.4), and not married (65% vs. 46%, $F(1,59)=18.0$, $p<.001$, OR .46). They were less likely to regularly see their friends (daily contact 32% vs. 43%; weekly contact, 37% vs. 43% OR 1.2; monthly contact or less, 30%, vs. 14% OR 2.9, $F(2,58)=13.6$, $p<.001$) or family (daily contact 54% vs. 65%; weekly contact 28% vs. 26% OR 1.3; monthly contact or less 18% vs. 9% OR 2.4, $F(2,58)=5.0$, $p=.009$). They were also likely to have lower socio-economic status ($M=4.7$, 95% CI [4.3, 5.0] vs. $M=5.5$, 95% CI [5.4, 5.6], $F(1,59)=19.4$, $p<.001$), be younger ($M=41.0$, 95% CI [39.2, 42.6], vs. $M=44.5$, 95% CI [44.4, 44.6], $F(1,59)=14.2$, $p<.001$) and to have greater levels of psychological distress ($M=23.5$, 95% CI [22.4, 24.6] vs. $M=14.0$, 95% CI [13.9, 14.1], $F(1,59)=325.9$, $p<.001$).

6.3.2 Receipt of mental illness information among Australians with depression.

Two hundred and sixty-one of those who had depression in twelve months prior to the interview indicated that they had received mental illness information, using this figure as a

basis, it is estimated that 54.7% (95% CI [48.7, 60.6]) of the Australian population with depression recalled receiving mental illness information in the 12 months before the survey. One hundred and ninety-seven of those who received this information, 76.7% (95% CI [68.2, 85.2]) found it helpful (this equates to 41.9% (95% CI [34.9, 49.0]) of the Australian population with depression). Just under a third (32.5% (95% CI [26.6, 38.5]) of those with depression received mental illness information from pamphlets, 30.2% (95% CI [24.9, 35.4]) from television, 24.0% (95% CI [17.9, 30.2]) from the internet, 22.9% (95% CI [16.6, 29.2]) from newspapers or magazines, 14.9% (95% CI [10.3, 19.5]) from the radio, 13.8% (95% CI [9.3, 18.4]) from non-fiction books and 4.8% (95% CI [1.4, 8.1]) from fictional books. Just over seventy percent (70.6%, 95% CI [56.0, 81.9]) of those who received such information from the internet found it helpful. The corresponding figures for the other channels were, 67.0% (95% CI [50.5, 80.2]) non-fiction book, 62.3% (95% CI [47.6, 79.7]) fiction book, 43.5% (95% CI [31.8, 56.0]) pamphlet, 34.9% (95% CI [28.6, 55.6]) radio, 34.5% (95% CI [20.2, 52.3]) newspaper and 32.3% (95% CI [20.7, 46.7]) television.

6.3.3 Who does not receive mental illness information?

Binary analyses revealed three predictor variables (education level, perceived need for mental health services and receipt of mental health services) were significantly related to both receipt of mental illness information and receipt of helpful mental illness information. People with a higher level of education were more likely to receive mental illness information ($F(1,59)=6.7, p=.012, OR=2.0$) and to perceive this as helpful ($F(1,59)=30, p<.000, OR=2.5$). Those whose perceived need was partially or completely met were also more likely than those whose needs were not met to both receive both mental illness information ($F(2,58)=7.4, p=.001$, partially meet needs $OR= 2.9$ fully meet= 4.9) and find it helpful ($F(2,58)=13.3, p<.000$ partially meet needs $OR= 2.8$ fully meet= 5.4). Those who attended mental health services were also significantly more like the received both mental illness

information ($F(1,59)=16.2, p < .000, OR=3.2$) and to find it helpful ($F(1,59)=23.9, p < .000, OR=4.5$). To eliminate problems with multi-collinearity the decision was made to exclude perceived need for mental health services from the multivariate analyses as it was highly correlated with use of mental health services and also had a high variance inflation factor (Institute for digital research and education, 2013).

Two logistic regression models were constructed. In the first receipt of mental illness information was the outcome of interest ($n=451, F(2,58)=11.65, p=.0001$) and in the second it was receipt of helpful mental illness information ($n=261, F(2,58)=19.8 p < .0000$). Both models provided a better fit of the data than a null model, as was shown by the Hosmer-Leneshow goodness of fit tests (model 1: $F(9,51)=.01 p=.99$; model 2, $F(9,51)=0.03 p=.99$). Those who used mental health services were more likely to receive both mental illness information ($OR=3.4, 95\% CI [1.9, 6.3], p < .000$) and helpful mental illness information ($OR=5.5, 95\% CI [2.9, 10.0], p < .000$). Those who had higher education levels were also more likely to receive mental illness information ($OR=2.2, 95\% CI [1.3, 3.8], p=.004$) and to find such information helpful ($OR=3.2, 95\% CI [1.7, 5.8], p < .000$). The included variables explained between 8.9% and 14.9% of the variance in receipt of mental illness information (Pseudo R^2 , calculated with the unweighted sample Mc Faddans=.0893, Cox & Snell=.114, McKelvey & Zavoina=.149) and between 12.1% and 20.3% of the variance in receipt of helpful mental illness information (Pseudo R^2 , calculated with the unweighted sample McFadden's=.121, Cox & Snell=.152, McKelvey & Zavoina=.203).

6.4 Discussion

This study is the first to explore the dissemination and perceived helpfulness of mental illness information among people with depression using a nationally representative sample.

Just over half (54.7%) of those with depression recalled receiving such information and 76.7% of receivers found it helpful.

6.4.1 Unmet need for mental illness information.

Forty-five percent of Australians with depression did not recall receiving mental illness information in the twelve months before the survey. This is in keeping with other research which shows that there is substantial proportion of the clinical population who are not receiving mental illness information. Australian researchers found that approximately 40% of those who had consulted a general practitioner, psychologist or psychiatrist about a mental health issue reported an unmet or only partially met need for information about their condition (Meadows & Bobevski, 2011). In another study, Dutch researchers, focusing on people with depression or anxiety disorders who were attending primary care, found one-third of the participants reported an unmet or only partially met need for information (Prins, Verhaak, Bensing, & van der Meer, 2008). In an Australian community sample, Griffiths and Crisp (2013) found half to three quarters of participants cited a need for more information. Taken together with our results, this shows that there is significant unmet demand for mental illness information. Meeting this demand could help to mitigate some of the negative effects of depression.

In Australia over the last two decades extensive efforts have been made to deliver mental illness information. For instance, Beyondblue has been established it is a national, independent, not-for-profit organisation working to address issues associated with depression, anxiety and other mental illnesses. The evaluators of beyondblue have suggested that mental health literacy and awareness of depression have increased since beyondblue's inception in 2000 (Dunt et al., 2010). Mental health first aid training was introduced in Australia in 2001. The aim of this program is to train participants to provide support to someone with mental

health problems. It is estimated that 1% of the Australian population has completed this course (Rosenberg, 2011). As many mental health issues emerge when people are aged 15-25 years, this age group has been the focus of mental health initiatives in Australia (Rickwood, 2011). Those that include information provision as an important component are the online services such as “ReachOut”, “headroom” and “MoodGYM”. Mindmatters, has been widely used to promote mental health in secondary schools. The reach of mindmatters has been considerable with 80% of Australian secondary school staff having attended mindmatters training and 65% of Australian secondary schools using mindmatters resources in their curriculum (Mindmatters, 2012, September 24).

We could not identify any other studies which measured the distribution of mental illness information among people who had a depressive episode. In the mid 2000’s in Australia 6.4% of the health budget was spent on specialist mental health services (excluding alcohol and drug services), comparable to other high income countries: Britain 10%, Netherlands 7%, USA 6% (World Health Organization, 2005) and Canada 4.8% (Jacobs et al., 2008). One would expect the rate of receipt of mental illness information to be lower in countries where less was being spent on the treatment and prevention of mental illness. Internationally therefore, it is probable that large segments of the community who have had a depressive episode have not received mental illness information.

6.4.2 Channel.

Approximately one third of people with depression received mental illness information from pamphlets. As 62.5% of those with depression accessed mental health services, it is probable that many of those with depression are receiving pamphlets via these health services. Other studies have also indicated the importance of pamphlets as a vehicle for health information. In an American study that focused on the effect of information provision

on intravenous drug use just over half the sample obtained their health information from pamphlets (Dunleavy, Crandall, & Metsch, 2005). The current study shows that fewer than half the participants who received information via pamphlets found the information helpful. Given the frequency with which pamphlets are currently used in mental health services it is essential to ensure they are designed to maximise their impact. Studies evaluating health pamphlets have generally used text analysis techniques (Humfress & Schmidt, 1999; Pothier, Day, Harris, & Pothier, 2008) or consumer consultation (Sawamura, Ito, Koyama, Tajima, & Higuchi, 2010; Thompson, Goldszmidt, Schwartz, & Bashook, 2010); these studies suggest that a focus on both the language and the layout of pamphlets can substantially improve their functionality.

Interestingly, 70% of people who received mental illness information from the internet found the information helpful. One attribute of the internet that allows users to find helpful information is its “search-ability”; a person can keep searching until something helpful is found. Despite the internet’s utility fewer people received mental illness information from the internet (24%), than received it from pamphlets (32%) or television (30%), however, these figures may change over time as use of the internet is likely to continue to increase. Other evidence also suggests the internet is an effective channel to deliver mental illness information (Christensen, Griffiths, & Jorm, 2004; Leach et al., 2007): this may be especially true for young males who tend to be hard to reach with other services (Reavley et al., 2011). Given, the considerable variation in the quality of online information about depression (Ferreira-Lay & Miller, 2008; Reavley & Jorm, 2011; Reavley et al., 2012), clinicians recommending the internet as a source of mental illness information should recommend particular sites proven to contain accurate and useful information. Both the depression web-site content checklist (Ferreira-Lay & Miller, 2008) and the DISCERN rating tool (Griffiths

& Christensen, 2005) are reliable instruments that can be used to determine the quality of online information about depression.

Reavley et al. (2011) noted that those engaging in an *active information search* are more likely to find the information they receive helpful than those who *passively* receive information while they are engaged in another activity. The three channels examined in this study that require an active search are the internet, book (non-fiction) and book (fiction); over 60% of people who accessed information from these channels found it helpful. Passive channels were radio, television and newspaper or magazines, less than 35% of people who accessed information from these channels finding it helpful. It is probable that mental illness information was more helpful to people who actively sought it because those who sought such information were likely doing so because they felt they needed it. Thus, those designing mental illness education campaigns should be aware that an important element of their work is shaping people's understanding of their mental health needs.

6.4.3 Who should be targeted in future mass communication campaigns?

This analysis showed that there were significant links between perceptions of mental health need, use of mental health services and receipt of mental illness information. However, the existing data does not allow us to ascertain the nature of any causal relationships among these variables. It may be that receipt of mental illness information prompted people to access services. Just as likely, receipt of mental health services leads to people being better informed about mental illness. While informative, the multivariate models describing these relationships explained a relatively small amount of the variance. Thus, further work needs to be done to investigate what other variables can be incorporated to improve such models.

Given previous research in the communication field (Hwang & Jeong, 2009) it is not surprising that education level was significantly related to receipt of mental illness

information. People with lower levels of educational attainment may be subject to significant health disparities in relation to depression for, as well as being less likely to receive depression information; they are over-represented among people with depression. Communication theorists, trying to understand the relationship between educational attainment and receipt of information, have suggested a number of different reasons for this correlation: people with higher levels of education may have better information processing and communication skills, a greater existing knowledge base, greater and more relevant social contacts (Hwang & Jeong, 2009), tend to acquire their knowledge via different channels (information-rich channels vs. entertainment-based channels) and tend to have different interests and motivations (Jenssen Anders, 2013). One successful health intervention that increased awareness of breast cancer in the American Hispanic community used an entertainment-based channel (Wilkin et al., 2007). This intervention involved the broadcasting of breast cancer story line in a popular American Hispanic soap opera along with a public service announcement about a breast cancer phone counselling service. Use of such innovative methods to disseminate mental illness information may be warranted.

6.4.4 Methodological strengths and limitations.

Extensive work went into the collection of data in the NSMHWB and the resulting dataset is the best available to examine many questions of mental health epidemiology and service use in Australia (Burgess et al., 2009). However, the data presented here in relation to information use arose from two questions. In future, use of questions that allow for the capture of how much mental illness information an individual received, how helpful that information was and which particular elements of the received information were helpful is warranted. While respondents to the NSMHWB were subject to an extensive interview, they were not asked whether they had a previous diagnosis of depression or another mental disorder. It is likely that prior diagnosis would have impacted on whether an individual

sought and received mental illness information. Also, nearly all the data collected for the NSMHWB relied on the participants' recall – asking participants to recall events from the previous 12 months. It is cognitively taxing to recall experiences over a twelve-month period; this is an even more salient issue for people with depression and may introduce memory bias (Drapeau, Boyer, & Diallo, 2011). Consideration of more proximal time frames is suggested for future work. Since 2007 when the data were collected there have been a number of changes in Australia that are likely to have impacted on access to mental illness information. For example, in 2007 the National Drought campaign was launched in rural areas. The aim of this program was to raise depression literacy (Goldney, Dunn, Grande, Crabb, & Taylor, 2009). There is no Australian data relating to the uptake of mental illness information since 2007 and thus no way to evaluate the impact that such interventions have had on the provision of mental illness information.

6.4.5 Implications.

Our findings have important policy implications for people wanting to reduce the disease burden arising from depression. Taken in conjunction with existing evidence, they suggest focused attention on the provision of mental illness information is warranted and could prove effective. There are two key results suggesting this they are first, that 76.7% of those with depression who received mental illness information found it helpful and second even in a country such as Australia, where there has been considerable effort and investment made to reduce the disease burden that arises as a result of depression, a substantial proportion of people who had a depressive episode (45%) did not recall receiving mental illness information during a twelve month period. Work to improve the utility of mental illness information in pamphlets, the most frequently accessed source of mental illness information, needs to be encouraged and people with depression need to be encouraged to seek out helpful mental illness information on the internet. People with depression who

missed out on mental illness information were likely to feel that they did not have any mental health needs, less likely to have received mental health services and likely to have a lower level of educational attainment. It may prove useful to target these groups when designing interventions to increase mental health literacy and in other depression-related mass media communication campaigns. At the conclusion of a piece of research a researcher often finds themselves dissatisfied with the data that they have (Richards & Morse, 2012). That is the position that the authors of this paper find themselves in we have presented some tantalising evidence suggesting that receipt of mental illness information is helpful for those with depression but as yet we do not know what types of information that those with depression found helpful, when they found it helpful and how it helped and unfortunately, as yet, we do not have the data that would allow us to explore these questions.

Chapter 7: Paper 3, Mental Health Service use among people with depression: An exploration using Andersen's Behavioral Model of Health Service use

In the last chapter, I showed that mental illness-related information was received by 54.7% of people with depression during a year. Of the people who received this information most (76.7%) found it helpful. Respondents with depression who were less likely to receive such information were less educated, unlikely to have accessed mental health services in the past year, and unlikely to believe that they had mental health needs. In the next chapter I will examine whether Andersen's Model of Service Use describes the service use of Australians with depression and explore the differences that may exist in such a model between people with depression who did and did not receive helpful mental illness information. The chapter was first published in the *Journal of Affective Disorders*. The reference for the original publication is as follows:

Graham, A., Hasking, P., Brooker, J., Clarke, D., & Meadows, G. (2017). Mental health service use among those with depression: An exploration using Andersen's Behavioral Model of Health Service Use. *Journal of Affective Disorders*, 208, 170-176. doi:10.1016/j.jad.2016.08.074

7.1 Abstract

Background: Despite positive effects on prognosis, less than half of the people diagnosed with depression access mental health services. Knowledge of what promotes such service use is limited. There is dispute about whether the receipt of mental illness related information encourages or discourages service use among those with depression. Accurate service use models are needed to inform programs designed to facilitate service use by those who would benefit most. We examine the appropriateness of Andersen's Behavioral Model of Health Service Use in this context.

Method: Data from 451 adults identified through the Australian National Survey of Mental Health and Wellbeing as meeting International Classification of Diseases Ten (ICD-10) criteria for depression were used.

Results: Confirmatory factor analysis failed to verify Andersen's model. Thus, an empirically derived service use model was developed using exploratory factor analysis and then structural equation modelling. Mental health need was the strongest predictor of service use and the model suggested the importance of social connectedness in promoting service use. Participants who had received helpful mental illness information were significantly more likely to have accessed mental health services than those who had not.

Limitations: The cross-sectional design and lack of replication preclude definitive conclusions

Conclusion: Andersen's model is a useful starting point for the exploration of service use among people with depression. It is necessary, however, to develop specific models for this population.

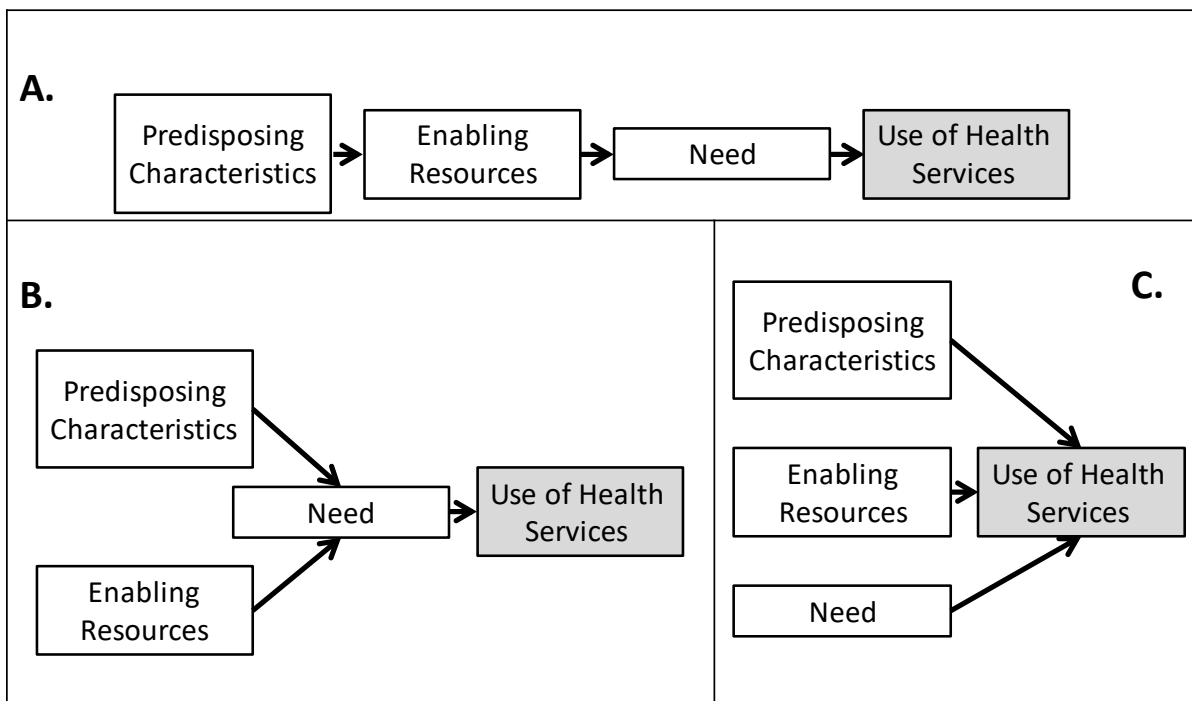
Depression is a major cause of disability, accounting for 4.4% of the global burden of disease (National Collaborating Centre for Mental Health, 2010; World Health Organization, 2012). However, only 10-50% of people with depression access mental health services (Burgess et al., 2009). When people with depression receive treatment consistent with best-practice guidelines, they experience reduced symptoms (Khan, Faucett, Lichtenberg, Kirsch, & Brown, 2012; Krogsbøll, Hróbjartsson, & Gøtzsche, 2009), a diminished risk of relapse (National Collaborating Centre for Mental Health, 2010) and an improved quality of life (Wells et al., 2000). If more people were to access mental health services, and receive appropriate treatment, the burden resulting from depression could be substantially reduced. Efforts to promote such service use among those with depression will be enhanced if they are based on accurate models.

7.1.1 Andersen's Behavioral model of Health Service Use.

The most frequently cited model of health service use, Andersen's Behavioral Model of Health Service Use, was constructed to describe the general health service use of those living in the United States of America (Andersen & Newman, 1973). The variants of Andersen's model have proven very versatile as they have been successfully used to explain service use among homeless populations (Gelberg et al., 2000; Solorio, Milburn, Andersen, Trifskin, & Rodriguez, 2006) and to understand what differentiates elderly people who attend emergency departments and those who do not (McCusker, Karp, Cardin, Durand, & Morin, 2003). While various versions of the model have been presented (Andersen, 1995) all suggest that health service use is a function of predisposing characteristics (including gender, age and health beliefs), enabling characteristics or resources that facilitate access to health services (such as wealth, social support or community characteristics) and, most importantly, need; according to the model no one seeks out health services unless they perceive that they are unwell and need help.

There is some contention about the relationships among these categories. Figure 7.1 portrays three of the different ways in which these relationships have been depicted. Part A shows Andersen’s initial depiction of the relationships (Andersen & Newman, 1973). Part B depicts Stiffman et al. (2001) interpretation of the model and part C displays the version Andersen suggested when discussing equitable and inequitable access to services (Andersen, 1995).

Figure 7.1 Various configurations of Andersen’s Behavioral Model of Health Service Use.



Babitsch et al. (2012) conducted a systematic review of studies that had used Andersen’s model to explore general health service use. These authors found inconsistencies in the categorisation of certain variables as predisposing or enabling characteristics and wide variation in the models depicted in the 16 identified papers. Accordingly, they concluded that the study context and sample characteristics were important. Thus it is necessary, in different contexts, to determine how the predictor variables suggested by Andersen’s model combine

to form higher order constructs, and then to determine how these higher-order constructs relate to service use.

In prior work which used Andersen's model in the context of depression (Carragher, Adamson, Bunting, & McCann, 2010; Choi, Kunik, & Wilson, 2013; Cook et al., 2014) the implicit assumption was that a model constructed to describe general health services use among the wider population also describes the use of mental health services among those with depression. The validity of this assumption is unclear. Furthermore, the majority of prior work used regression techniques to predict service use, an approach which does not allow for a detailed exploration of the nature of the relationships among the predictor variables. In two of the papers clustering techniques were used (Carragher, Mills, Slade, Teesson, & Silove, 2010; Choi, Morrow-Howell, & Proctor, 2006; Gagné, Vasiliadis, & Prévaille, 2014) but the focus of the clustering was the participant, not the predictor variables. Thus, despite the repeated use of Andersen's models we could find little research that examined whether and how the various predictor variables found to influence service use group together into higher order constructs which influence service use in this population.

7.1.2 Mental illness information.

Andersen's model does not describe the influence that the receipt of illness information has on service use. Increasing mental health literacy or providing people with the knowledge that could be used to improve their own or another's mental health has become a crucial mental health promotion goal because it is seen as a way to promote service use (Jorm, 2012). Providing people with mental illness information is one of the methods used to increase mental health literacy (Jorm, 2012). Access to such information may be critical in determining whether or not an individual accesses mental health services.

Yet within the general health context there is debate about the effect that the provision of health information has on health service use. Between 1990 and 2016 all six published studies exploring the relationship between receipt of health information and health service use concluded that increased access to and use of health information was associated with increased health service use (Dwyer & Liu, 2013; Hsieh & Lin, 1997; Kenkel, 1990; Lee, 2008; Parente et al., 2005; Suziedelyte, 2012). Consequently, theorists have suggested that poorly informed consumers underestimate the benefits of health services and therefore use them less (Dwyer & Liu, 2013).

Recently, however, health economists examining data from the Swiss Health Survey found seemingly contradictory evidence, suggesting that receipt of health information has a negative relationship to health care use (Schmid, 2013, 2014). Moreover, findings from the Healthwise Community Project (Wagner & Greenlick, 2001; Wagner, Hibbard, Greenlick, & Kunkel, 2001; Wagner, Hu, et al., 2001; Wagner & Jimison, 2003), in which residents in Boise, Idaho were provided with free health information and access to a toll-free nurse consultation service, suggest residents relied less on health professionals for their health care information, used fewer paediatric health services and fewer emergency department services than did residents in the two control sites. The authors speculated that health information was used as a substitute for health services, rather than promoting help-seeking. It is important to determine whether, among people with depression, the provision of mental illness information is being used to complement or as a substitute for formal mental health services.

7.1.3 The current study.

Using data from the most recent Australian National Survey of Mental Health and Wellbeing (NSMHWB) from respondents who had a depressive episode, we will; 1) examine the relationships among our selected variables to identify the underlying factors and

determine whether, as Andersen's model suggests, the variables group into predisposing characteristics, enabling characteristics and mental health need; 2) use structural equation modelling techniques to establish a model of the relationships among the identified factors and mental health service use; 3) examine whether the identified model of service use differs for people who had and had not received helpful mental illness information.

7.2 Method

Data from the National Survey of Mental Health and Wellbeing (NSMHWB) was used in this cross-sectional study. The Australian Bureau of Statistics (ABS) conducted this survey from August-December 2007 using a stratified multistage probability sample of 8,841 people (4,027 males and 4,814 females) aged 16-85 years (mean 46.4, $SD=19.0$). A fuller description of the survey methodology and design can be found elsewhere (Slade et al., 2009). The depression module of the Composite International Diagnostic Interview [CIDI-3, (Kessler & Üstün, 2004)] was used to identify respondents who experienced a depressive episode in the 12 months before the survey. This module has good inter-rater reliability (Wittchen et al., 1991) and validity among clinical samples (Janca et al., 1992). Non-hierarchical ICD-10 criteria were also used when those with depression were identified. Among those sampled, 451 Australians (300 females and 151 males) had a depressive episode in the 12 months before the survey (12-month prevalence = 5.0% CI 4.4-5.6). The mean age of those identified as having had a depressive episode was 42.24 ($SD=15.4$). Table 1, in Appendix B, the supplementary materials, describes the characteristics of those Australians identified as having had an episode of depression.

7.2.1 Measures.

Predisposing characteristics are personal characteristics that exist prior to the onset of an illness (Babitsch et al., 2012). A systematic review of papers using Andersen's model

identified the six most frequently examined predisposing variables as age, marital status, sex, education level, ethnicity and employment status (Babitsch et al., 2012). Each of these were included in this study. Age was a continuous variable (range 16-85 years), while the other five were categorical variables: marital status (married/not married), sex (male/female), education level (university qualification/no university qualification), ethnicity (country of birth was used as a proxy for ethnicity; categories were: non-English speaking country/English speaking country other than Australia/Australia) and employment status (not in labour force/unemployed/employed). One other predisposing categorical variable, “number of people in the household” (one person/two people/three or more people), was also included.

Enabling resources are those things that make it possible for a person to receive health services (Babitsch et al., 2012). In prior research the most commonly used variable in this category was income/financial situation (Babitsch et al., 2012). In the current study we attempted to capture this by examining two categorical variables: financial status (financial problems/no financial problems) and housing status (renting/owner with a mortgage/owner without a mortgage). In his review of the impact of the behavioral model of health service use Andersen suggested that social relationships are important enabling resources (Andersen, 1995). We used two categorical variables to measure such relationships: frequency of contact with 1) family and 2) with friends (contact was coded as daily/weekly/monthly or less).

We measured mental health *needs* using five measures. Psychological distress was measured using the Kessler Psychological Distress Scale (K-10). This measure includes 10 questions about emotional states (Kessler et al., 2003). In addition, participants were asked to provide an overall assessment of their mental health (excellent or very good/good/fair/poor), and to assess their general health in comparison to how it was a year ago (a lot better/a little or somewhat better/the same/a little or somewhat worse/a lot worse). Depression severity

(minor/moderate/major) was also included, as was the nature of any co-morbidity (affective disorder only/affective and anxiety disorders/combination including affective and substance use disorder) and the number of ICD-10 mental health disorders (range 1-11) that the respondents had experienced in the twelve months prior to the survey.

Three variables were used in this study to quantify *mental health service use*: the number of mental health consultations attended in the previous year (none/ 1-9 / 10 or more), the type of services accessed in the previous year for mental health issues (none/consultation with general practitioner only/consultation with general practitioner as well as mental health specialist/hospitalisation and consultation) and the number of psychoactive medications that the respondent had taken in the two weeks prior to the survey (none/one /two /three or more).

Data from two variables related to the *receipt of mental illness information* were analysed in this study. The first variable was: In the past 12 months, have you received information about mental illness, its treatment and available services, If yes: Which ones? The sources of mental illness information listed as response options were internet, fiction book (story), non-fiction book (factual account), newspaper or magazine, television, radio, and pamphlet/leaflet/brochure. Participants who indicated that they had received mental illness information were then asked the second question: Which of these gave information that was helpful to you for problems with your mental health? All respondents who indicated that they had received helpful mental illness from at least one source were classified as having received helpful mental illness information. As previously reported, people who did not receive such information were less educated, unlikely to have accessed mental health services and unlikely to believe they had mental health needs (Graham, Hasking, Clarke, & Meadows, 2015). Appendix B Table 2 contains descriptions of the frequency distributions of each of the measures used in this study.

7.2.2 Statistical Analysis.

7.2.2.1 *Analysis to address aim 1: Examine the relationships among our selected variables to identify the underlying factors and determine whether, as Andersen's model suggests, the variables group into predisposing characteristics, enabling characteristics and mental health need.*

To determine whether our selected variables represented the latent traits specified within Andersen's model we conducted a confirmatory factor analysis (CFA). Guided by Andersen's model, four latent variables were examined (predisposing characteristics, enabling characteristics, mental health needs and mental health service use). Given the mix of dichotomous, categorical and continuous variables, CFA was performed on a matrix that included polychoric correlations (when both variables had fewer than 10 levels), polyserial correlations (when one of the variables had fewer than 10 levels), and Pearson's correlations [when both variables had more than 10 levels (Holgado-Tello, Chacón-Moscoso, Barbero-García, & Vila-Abad, 2010)]. As twenty variables were of interest, the sample to variable ratio was 22.5:1.0, a comparatively high ratio (Williams & Brown, 2012). The overall Kaiser-Meyer-Olkin measure of sampling adequacy was 0.62, a level considered suitable for factor analysis (Williams and Brown, 2012).

EQS 6.2 was used to conduct the CFA (Bentler, 2006). In addition to the chi-squared statistic, the Satorra-Bentler scaled chi-squared ($S-B\chi^2$) statistic (Satorra & Bentler, 2001), the normed fit index (NFI), and the comparative fit index (CFI) were examined. In all cases values closer to one indicate better fit, with values over 0.95 considered to be indicative of a good fit (Byrne, 1994). Finally, the root mean square error of approximation (RMSEA) was used, with values less than .05 considered to show good fit (Bentler, 2006; Byrne, 1994).

7.2.2.2 Analysis to address aim 2: Use structural equation modelling techniques to establish a model of the relationships among the identified factors and mental health service use.

EQS 6.2 was used to construct a series of SEM models to depict how the latent factors identified in the factor analysis related to each other (Bentler, 2006). As all the variables used in these analyses were either continuous or ordered categorical variables the procedures described by Lee, Poon, and Bentler (1995) for dealing with such data when creating SEM models were followed. To assess the goodness of fit the same five fit statistics reported in the confirmatory factor analyses (described above) were used. The strengths and statistical significance of each of the proposed pathways in the model were examined using the Wald test, a multivariate test of statistical significance (Byrne, 1994).

7.2.2.3 Analysis to address aim 3: Examine whether the identified model of service use differs for people who had and had not received helpful mental illness information.

After establishing a model in the full sample, this model was used as a foundation to apply multi-group analysis. Two separate SEM models were constructed for the participants who received helpful mental illness information and those who did not receive such information. We wanted to determine whether both the *factorial* and the *mean* structure of these two models differed. To compare the factor structure of the two models, factor loadings on all the common pathways were constrained to be equal and the model fit statistics examined. To compare the mean structure of the models we used latent variable scores because these are considered to be substantially error free (Larwin, 2008). Two sample t-tests (unequal variance) were then used to compare the distribution of scores for those who did and did not receive helpful mental illness information for each of the latent factors, and then the mean structure of the latent factors was compared.

7.3 Results

7.3.1 Results relating to aim 1: Examine the relationships among our selected variables to identify the underlying factors and determine whether, as Andersen's model suggests, the variables group into predisposing characteristics, enabling characteristics and mental health need.

7.3.1.1 Confirmatory factor analysis.

A CFA was conducted to determine whether selected variables grouped to form latent variables as Andersen's model predicted. Variables that did not load onto any of the four factors with values greater than .1 were dropped from the analysis; this value was chosen as we wanted to drop as few variables as possible, given previous work had highlighted the importance of the selected variables in Andersen's model. The following variables were dropped: four predisposing variables (marital status, sex, education level and number of people in the household), and three need variables (general health in comparison to last year, depression severity and co-morbidity of mental disorders). The structure of the resulting model was as follows: *Predisposing characteristics*: age, employment status and country of birth; *Enabling characteristics*: housing status, financial problems and frequency of contact with family; *Mental health need*: Number of mental health conditions, psychological distress measured with the K-10 and self assessed mental health; *Mental health service use*: number of mental health consultations with any professional, number of medications taken for mental health in the past two weeks and type of service accessed for mental health. However, this theoretically derived four factor model fitted the data poorly ($\chi^2(54) = 478.38$ $p < .000$, S-B $\chi^2(54) = 136.69$ $p < .000$, NFI=.768, CFI=.788, RMSEA=.132).

7.3.1.2 Exploratory factor analysis.

As the variables did not group as Andersen's model predicted, it was not possible to test which version of Andersen's model (see Figure 7.1) best represented the current data. Subsequently, to determine factors that best represented our chosen variables, the variables

were subject to exploratory factor analysis, using STATA 11 (StataCorp, 2005). Factors were selected if they had eigen values exceeding one and were before the first elbow of the scree plot (Williams and Brown, 2012). Interpretation was based on the factor loadings in the orthogonal rotation (see Table 7.1). Using these criteria, a four factor solution was obtained. Sex, country of birth, highest level of education achieved and severity of depression did not load above .35 on any of the factors. These four variables were therefore removed from the subsequent analysis.

Most of the variables associated with “*mental health need*” (Factor 1) and “*mental health service use*” (Factor 2) were consistent with Andersen’s model of health service use. However, the groupings of the other variables did not align with the other two categories of variables described by Andersen (enabling and predisposing characteristics; see Table 7.1). The third factor we identified we have called “*social self*” and the variables associated with it were age, employment status and contact with friends. The fourth factor we have called “*self at home*” and the variables associated with it were marital status, number of persons in a household, contact with family members and housing status (Table 7.1). Combined, the factors accounted for 85% of the variance.

7.3.2 Results relating to aim 2: Use structural equation modelling techniques to establish a model of the relationships among the identified factors and mental health service use.

The empirically derived model was built around the four factors identified in the exploratory factor analysis: mental health service use, mental health need, social self and self at home. To construct the model we tested the significance of all the possible relationships among these factors. The statistically significant relationships are depicted in Figure 7.2 part A. The empirically derived model was a good fit to the data (Table 7.2). Figure 7.2 part A illustrates that the greater a person’s perceived need the more likely they were to have used

mental health services. Conversely, the more social contact a person had the less likely they were to have used mental health services. Figure 7.2 part A also shows that self at home was indirectly related to mental health service use through mental health need, $\beta = -.107$, 95% CI = .032 to .181, $p < .05$.

Figure 7.2 Empirically derived structural equation model

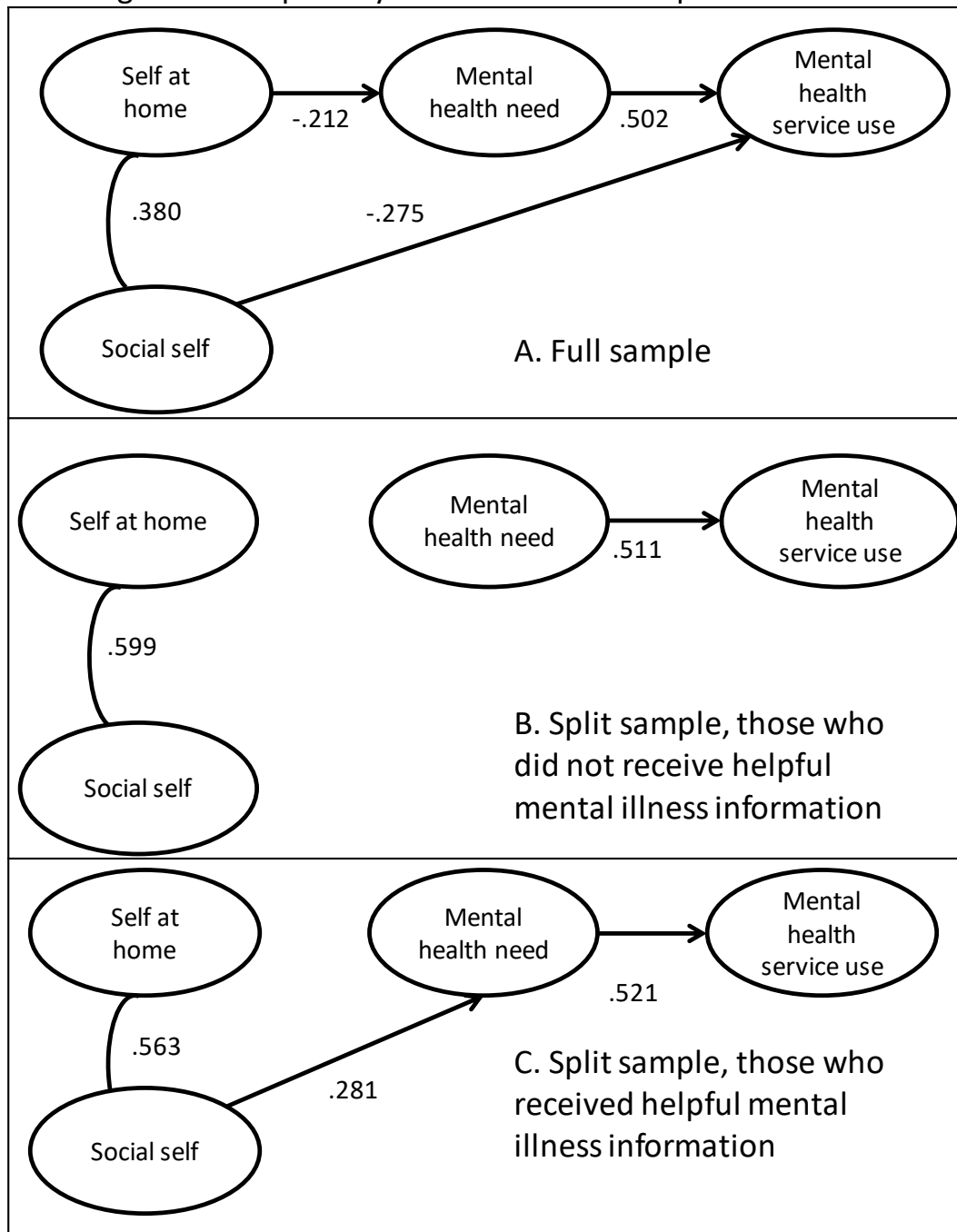


Table 7.1

Results of the exploratory factor analysis: variables with a factor loading of greater than .35, following orthogonal varimax rotation.

Variables	Factors			
	1	2	3	4
Factor 1: Mental health needs (variance explained 28.9%)				
Psychological distress	.74			
Number of mental health conditions	.71			
Self assessed mental health	.63			
Co-morbidity of mental health disorders	.62			
Financial problems	-.43			
Self assessed general health	.36			
Factor 2: Mental health service use (variance explained 27.1%)				
Type of service accessed for mental health		0.93		
No. of mental health consultations		0.92		
No. of medications taken for mental health		0.65		
Factor 3: Social self (variance explained 18.9%)				
Age			-0.74	
Employment status			.42	
Contact with friends			.41	
Factor 4: Self at home (variance explained 18.3%)				
Marital status				.77
Number of persons in household				.75
Contact with family members				.41
Housing status				.37
Factor correlations				
Factor 2	.71			
Factor 3	.21	.17		
Factor 4	.18	.12	.64	

7.3.3 Results relating to aim 3: Examine whether the identified model of service use differs for people who had and had not received helpful mental illness information.

7.3.3.1 Multi-group analysis – Differences in the factorial structure of the models.

When modelled separately for those who did not (Figure 7.2 part B) and did receive (Figure 7.2 part C) helpful mental illness information, the model was a sound fit in both samples (Table 7.2; Figure 7.2). However, unlike the model for the full sample, among those who did not receive helpful mental illness information, self at home was unrelated to mental health need, and social self was unrelated to service use. Among those who received helpful mental illness information, there was an indirect effect of social self on mental health service use via mental health need, $\beta=.324$, 95% CI= .056 to .592, $p<.05$. Each of these models had some unique parameters and unique co-variances that are listed in Table 2 which is included in the Appendix B, supplementary material

Table 7.2

Goodness of fit statistics for the models of mental health service use of those with depression examined in this paper

Models of service use among those with depression presented in the current paper	Sample size	Degrees of freedom	χ^2	S-Bχ^2	NFI	CFI	RMSEA
Empirically derived: full sample	451	62	167.4	42.7	.932	.956	.062
Empirically derived: split sample, those who did not receive helpful mental illness information	254	52	101.6	20.6	.934	.966	.061
Empirically derived: split sample, those who received helpful mental illness information	197	50	103.0	18.6	.931	.952	.074

Abbreviations: χ^2 =the chi-squared statistic; S-B χ^2 = the Satorra-Bentler scaled chi-squared statistic; NFI=the normed fit index; CFI=the comparative fit index and RMSEA= the root mean square error of approximation

7.3.3.2 Multi-group analysis – Differences in the latent mean structure of the models.

Finally, we examined differences in the latent mean structure of these two models. In comparison to those who did not receive helpful mental illness information, those who received such information were significantly more likely to have used mental health services, $t(380)=-4.12$, $p=.00004$, have more connections and engagement with people in the home environment, $t(449)=-2.82$, $p=.0049$, and those outside the home, $t(449)=-2.83$ $p=.0047$. However, there were no significant differences between the mental health needs of those who received mental health information and those who did not, $t(423)=-.943$, $p=.345$.

7.4 Discussion

It has been worthwhile using Andersen's Behavioral Model of Health Service Use as a starting point for the exploration of mental health service use among Australians with depression. Our results reveal that, at least in the Australian context, a modified version of the model may more accurately describe the mental health service use of people with depression. Our modified model was built around four latent variables, two of which corresponded with the need and service use factors described by Andersen. In contrast, the other two latent variables which we have called "*social self*" and "*self at home*" did not correspond with Andersen's factors. While the level of perceived need was the same for people who did and did not receive helpful mental illness information, those who received such information were more likely to have accessed mental health services. Recalling our question about whether receipt of mental illness information is being used as a complement or a substitute for mental health services, our analysis suggests that, among those with depression, receipt of mental illness information is complementing mental health services.

7.4.1 Mental health needs.

We found that mental health need was the strongest predictor of mental health service use. In this respect, our results replicate those found by others examining service use among depressed adolescents (Frojd, Marttunen, Pelkonen, von der Pahlen, & Kaltiala-Heino, 2007), primary care patients (Herrman et al., 2002) and the elderly (Choi et al., 2013; Choi, Rozario, Morrow-Howell, & Proctor, 2009).

According to Andersen's model, financial status is an enabling factor (Babitsch et al., 2012), but our modelling suggests that financial status is intimately linked to other measures of mental health need. Andersen (1995) suggested that the more health need predicts service use, the more egalitarian the service system. However, our modelling showed that the variables that clustered together to form the mental health need factor included a measure of financial status, with poorer financial status indicating greater need. So the strength of the relationship between need and service use in our model is not indicative of an egalitarian service sector.

7.4.2 Social Support Networks.

While mental health need was the strongest predictor of mental health service use among those with depression, other factors were also found to be important. Past research has shown that social connectedness is associated with mental health service use in adolescents (Andersson et al., 2013; Frojd et al., 2007; Lindsey, 2003; Rickwood et al., 2007), among financially disadvantaged adults (Andersson et al., 2013) and in cross-national studies of depressed people in Europe (McCracken et al., 2006). The models of mental health service use among those with depression constructed in this study suggest that the relationship between social connection and service use, at least in the Australian context,

might not be quite so straight forward (See Figure 7.2). For example, in the full sample model (Figure 7.2 Part A) weak social connections at home were associated with increased mental health need, and weak social relationships were associated directly with increased mental health service use. Further modelling work needs to be completed to determine the impact of social connection and disconnection on depressive symptoms and on service use among those who have depression.

7.4.3 The role of mental illness information.

Our analysis showed that while there was no difference in the mental health needs of those who received helpful mental illness information and those who did not, those who received such information were more likely to have used mental health services. We cannot determine in this cross-sectional study whether people received their information from mental health services or whether provision of information facilitated help-seeking. Other researchers have shown that there is a general desire in the community, and particularly among those with depression, for further information relating to depression (Griffiths & Crisp, 2013). As a whole, these findings suggest that further efforts to distribute mental illness information to those with depression are warranted. The challenge now is to determine how to do this effectively. The importance of peers is again noteworthy: turning to informal supports (such as family and friends) facilitates help-seeking from formal networks, and information campaigns need to target not just those who are experiencing depression or likely to experience depression, but also those in the wider community who are their social contacts. Thus, programs that are designed to increase the level of mental health literacy in the community, such as Mental Health First Aid (Kitchener & Jorm, 2002), should be encouraged.

7.4.4 Strengths and limitations.

One of the strengths of screening a national sample is that the data set includes not only those who know they have depression and have used services but also those who are unaware they have depression and those who may be aware they are depressed but do not access services. However, although the data we used in this study is currently the best available Australian national data to study service use among those with depression (Burgess et al., 2009) the response rate of 60% was lower than expected (Slade et al., 2009).

Like most who have examined Anderson's model, we have done so using a secondary data set (Babitsch et al., 2012). Unfortunately, we were not able to incorporate any measures of health beliefs about depression into our model as no data relevant to this was collected in the NSMHWB. Andersen suggested that such health beliefs may be important predisposing characteristics (Andersen, 1995), implying that our model may have been strengthened by the inclusion of such factors. Furthermore, as cross-sectional data were used we were not able to ascertain the nature of any causal relationships among social connectedness, mental illness information receipt, depression and service use.

The strength of Andersen's model lies in the provision of a framework to link previously disparate factors that relate to service use (Pescosolido & Kronenfeld, 1995). Andersen himself has noted that if we are to understand health service use we must develop "a new generation of access models and indicators, which stress the importance of contextual and individual characteristics in promoting access for defined populations" (Andersen, 2008 p. 652). Our work is the start of the development of models to predict service use for people with depression. We have used just one data set to both test Andersen's model, and then to

explore the relationships among the various latent factors. This work needs to be replicated with different data sets from a range of regions examining service use in a variety of contexts.

7.4.5 Conclusion.

To promote the use of mental health services among individuals with depression we need to understand what encourages and discourages such service use. We found evidence suggesting that a variant of Andersen's model successfully depicts service use among Australians with depression. The model that we developed illustrates, first, that need for mental health services is the strongest predictor of service use and, second, that social connection is associated with service use. The impact of social connectedness on service use was more evident among those who received helpful mental illness information than those who did not, and those who received such information were more likely to have used mental health services. If findings such as ours are replicated in other contexts using different data sets, then these models of service use among people with depression could be usefully applied to the development and implementation of interventions to promote mental health service use in this population.

Chapter 8: Notes on the qualitative methodology

In Chapters 4, 6, and 7 I presented a series of analyses describing the receipt of mental illness information among Australians. I showed that a large proportion of people who received such information found it helpful, and that there was a positive association between receipt of mental illness information and service use.

All the analyses presented in the preceding chapters were completed using data from 2007 National Survey of Mental Health and Wellbeing. While researchers can use this cross sectional, retrospective data, as I have done, to explore associations between variables of interest, nothing about causation can be determined. Further, as the CIDI is a structured interview instrument, with few open-ended questions, it is unlikely to reveal anything about phenomena that is not directly inquired about (Rosenman, 2012; Weich & Araya, 2004). Thus, using only data from the 2007 National Survey of Mental Health and Wellbeing, I could determine nothing about the *content* of mental illness information that proved to be helpful or the way it helped or the reasons it was associated with receipt of mental health services. A different type of methodology is required to explore such issues. To gather data to address these issues I needed to “enter into the world of the participants to see the world from their perspectives” (Corbin & Strauss, 2008 p. 16). That is, I needed to conduct qualitative research.

My aim in the qualitative study that is presented in the next chapter was to increase understanding of the circumstances that led to participants seeking help for depression from mental health professionals. If we understand more about the process that people who received mental health services went through, we may be able to use this knowledge to encourage others with depression to seek professional services.

8.1 Recruiting participants

From May to July 2017 I recruited 12 English speaking, Australian residents, aged over 18, who had received treatment for depression from a mental health professional in the preceding twelve months. At the time of recruitment, the treatment may have been either completed or ongoing. The participants depression had impacted substantially on each of their lives. It is well recognised that depression tends to be an episodic condition (Royal Australian and New Zealand College of Psychiatrists, 2004). On the day that we conducted the interviews the participants current mental state was assessed, 7 participants were found to have no depression, 4 to have mild depression and 1 moderate depression. Thus, none of the participants were severely depressed at the time of the interview. It would have been both ethically questionable and unfeasible to attempt to interview severely depressed people. During the interviews the participants were asked to recall situations when they had been severely depressed.

To recruit participants, a Facebook post and a series of tweets were created, briefly describing the study. Each of these had a link to a study description webpage which included an online screening survey. The questions in the online screening survey took potential participants less than five minutes to answer. Included with these questions was the Patient Health Questionnaire 9, a short screening instrument for depression (Kroenke, Spitzer, & Williams, 2001).

There were advantages to using Facebook and Twitter to recruit participants. First, they are cost effective; second, huge numbers of people access Facebook and Twitter [during July of 2018 15,000,000 Australians (60% of the Australian population) used Facebook and 4,700,000 Australians used Twitter (Cowling, 2018)]; third, the initial phases of the screening process are done without researcher involvement; fourth, only people who have a substantial

interest in the research topic tend to register their interest, so that eventual participants are “information rich”. However, it is difficult to recruit participants using these social networks if you do not have a well-developed social network before commencing the work. Initially my recruitment using these methods was slow until some friends and acquaintances who had large social networks re-posted and re-tweeted the descriptions of the study. A disadvantage of using social networks such as these to recruit people is that you are likely to recruit people who you either know directly as friends or indirectly as friends of friends. Consequently, issues of confidentiality need to be carefully considered.

8.2 The methodology: Qualitative description with grounded theory overtones

The methodology I used in the study presented in chapter 9 was qualitative description with grounded theory overtones (Neergaard, Olesen, Andersen, & Sondergaard, 2009; Sandelowski, 2000, 2010). The aim of qualitative descriptive studies is to provide a “presentation of the facts in everyday language” (Sandelowski, 2000, p. 336). Qualitative description has been recommended for mixed method health services studies where there are limited resources (Neergaard et al., 2009).

8.3 Data collection: Semi-structured interviews and modelling of the participants’ experiences

Following a consent process, two interviewers (myself and a colleague) conducted face-to-face interviews with each of the participants. These interviews lasted approximately 90 minutes and were audio-recorded to facilitate subsequent analysis. Once introductions had been made, we commenced each interview by saying,

“As you know, we are really interested to find out how you ended up receiving treatment for depression. Can you tell us about this?”

The nature and the sequence of questions that followed from this starting point were dependent upon the direction that the participant led the conversation. Table 2, in Appendix D, contains the interview schedule and the questions that were used at appropriate points during the interviews to prompt the participants.

During the interview with each participant, a researcher-led modelling exercise was completed, and a flowchart developed that depicted the participant's experiences. From among the various modelling techniques, I chose to use flowcharts as they have been shown to have the greatest utility in a health context (Jun, Ward, Morris, & Clarkson, 2009). After the participant had been speaking for between 20-30 minutes, I began to construct the flow chart. The steps to construct these flow charts were as follows:

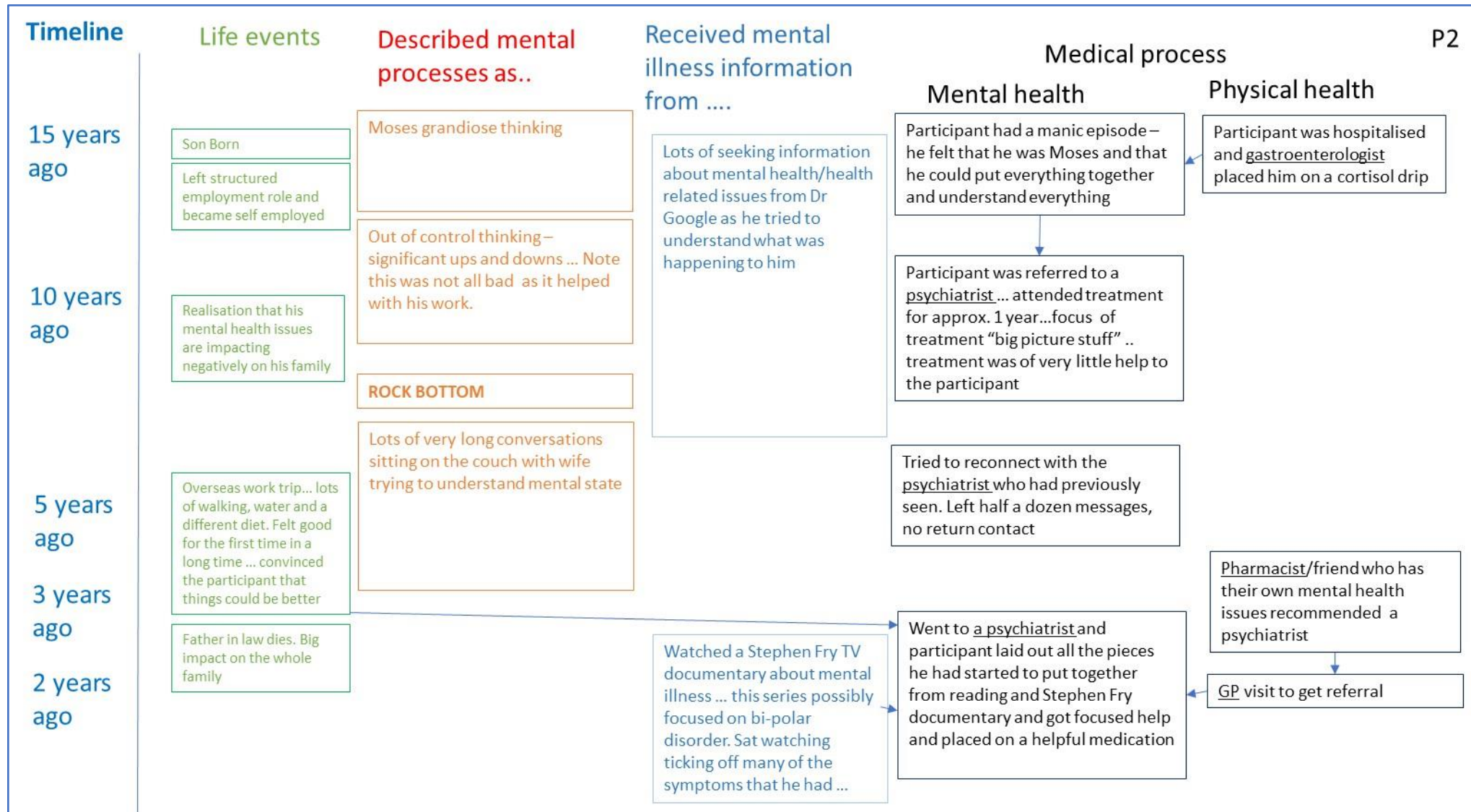
1. A time line was drawn on the left-hand side of a white board. The reference points listed on this time line reflected the language used by the participant. For some participants, it was "number of years ago", for others it was "when I was aged...", and for some it was "when I was at school, university etc".
2. I listed the significant life events the participant had already spoken of on the appropriate place on the time line, checking with the participant that what was being drawn/written reflected what he or she recalled.
3. Then, using a different coloured marker, I would try to align these times and events with the participant's descriptions of seeing various health practitioners for mental health issues.
4. Throughout the rest of the interview the flow chart was repeatedly extended and modified as further details of the participant's story emerged.

Figure 8.1 has been included as an example of the flowcharts that were constructed. During the interviews the flow chart served as a memory aid for both participants and interviewers. Throughout the modelling process the participant was invited to modify the flow chart so that it more accurately captured or described the process that he or she went through. Thus, the development and the depiction of this flow chart was one of the tools we used to engage our participants in the “member checking process” (Harper & Cole, 2012). Both the interview transcripts and an electronic reconstruction of the models were treated as our qualitative data. The methodology I used had grounded theory overtones because in my analysis of the interview transcripts I used the method of constant comparison (Corbin & Strauss, 2008) and data were inductively coded. Descriptive codes were constructed and then condensed into representative categories and themes.

8.4 Ethical considerations

Prior to commencing data collection ethics approval for the study was obtained from Monash University Human Research Ethics Committee (Project number: 1301). At the beginning of each interview we asked the participants how they had come to find out about the study; most had found out via mutual acquaintances. We ensured that the participants were aware of these links, gave them the option to withdraw from the study (which none took) and confirmed to them that no identifiable information disclosed during the interview would be communicated outside the researchers involved in the data analysis. The processes necessary to protect the participants needed to be carefully considered as during the interviews the participants were asked to recall potentially distressing experiences (e.g., realising that they needed to seek mental health services, coming to understand they had depression). While participants were made aware that experienced therapists were available to work with or debrief them after the interviews, none of the participants sought out such services

Figure 8.1 Example of a flow-chart constructed for one participant during the qualitative interview process



Chapter 9: Paper 4, Patients' perspectives on depression treatment in Australia: The nature of helpful treatment, barriers and catalysts

This paper has been submitted to the journal *Patient Education and Counselling*.

The author of this dissertation is the first author of this paper the other authors are: Joanne Brooker, Clare C. O'Callaghan, Penelope Hasking, John Julian, and Graham Meadows

9.1 Abstract

Objective: Worldwide approximately 5% of the population experience depression annually. Clinical trials have revealed effective treatments are available, however, many people with depression do not access them. Our objective was to increase understanding of patients' perspectives about the nature of helpful treatments for depression, and the barriers and catalysts to engagement with such treatments.

Method: Service use pathways and experiences of 12 Australians who had received depression treatment from healthcare professionals were examined. In-depth interviews were conducted and flowcharts depicting pathways to services constructed. The analytic approach was qualitative description with grounded theory features.

Results: Key barriers to health service use were related to symptoms of depression (i.e., exhaustion, reduced ability and desire to interact with others, and compromised self-perception). When severely depressed, many participants could not overcome these barriers without assistance.

Conclusion: Pathways to healthcare services for people with depression need to be redesigned, taking into consideration the effect of depressive symptoms.

Practice implications: When working with people with depression clinicians need to ensure that there are supports in place so that patients can remain engaged with mental health services during the current episode and in the event of depressive relapse.

Depression accounts for 4.4% of the global disease burden (World Health Organization, 2012), with 5.3% of the population experiencing depression annually (Eaton et al., 2008). Although interventions, including anti-depressants and cognitive behavioural therapy, minimize the impact of depression (i.e., Cipriani et al., 2009; Vittengl, Clark, Dunn, & Jarrett, 2007), the disease continues to negatively affect many with the disorder as well as their family and friends (Jorm, Patten, Brugha, & Mojtabai, 2017).

Commentators (Harris et al., 2015; Jorm et al., 2017) have suggested three reasons why efforts to combat depression have failed. First, a “*treatment gap*” exists; only 10-50% of people with depression access mental health services (Burgess et al., 2009). Second, a gap between symptom onset and treatment often exists; in Australia the average delay is 10.6 years (Thompson, Issakidis, & Hunt, 2008), and up to 14 years elsewhere (Wang et al., 2008). Third, there is a “*quality gap*” as some mental health services are inadequate (Jorm et al., 2017). Annually 46% of Australians with an affective disorder consult healthcare professionals about mental health issues and, of these, 30% receive “minimally adequate treatment” (Harris et al., 2015). Among Americans with depression, half received “minimally adequate treatment” (Uebelacker, Smith, Lewis, Sasaki, & Miller, 2009). To reduce depression burden, the “*time*”, “*treatment*” and “*quality*” gaps need to be addressed. Increased knowledge is needed about facilitators of and barriers to mental health service use and the nature of services considered helpful by people with depression.

Qualitative work exploring service use among people with depression uncovered numerous service use barriers (Goldman, Nielsen, & Champion, 1999; Möller-Leimkühler, 2002), including stigma (Campbell, 2013; Clement et al., 2015), fear of adverse treatment side-effects (Barragan & Palinkas, 2014), disclosure concerns (Clement et al., 2015), lack of knowledge about services (Barragan & Palinkas, 2014; Saver, Van-Nguyen, Keppel, &

Doescher, 2007) and the desire to be self-sufficient (Gulliver et al., 2010; Kitchen et al., 2013). Although comparatively under researched (Gulliver et al., 2010), service use facilitators include supportive social networks (Kitchen et al., 2013; Lindsey et al., 2006) and positive depression treatment expectations (Elwy, Yeh, Worcester, & Eisen, 2011).

The authors of a systematic review of 14 studies of depression therapy experiences found that people who had recovered from depression experienced a complex journey facilitated by family support, broader social networks, and caring mental health professionals who provided individualized care (Richardson & Barkham, 2017). The current study adds to the limited literature describing service use experiences of people with depression. Among a sample of Australians treated by healthcare professionals for depression in the last year our aims were to understand: 1. time elapsed between the appearance of depressive symptoms and receipt of helpful mental health services; 2. factors that influenced individuals to engage with mental health services; 3. the nature of mental health related services received; and 4 characteristics of services perceived as helpful.

9.2 Method

We used a qualitative description research design with grounded theory features (Corbin & Strauss, 2008; Neergaard et al., 2009; Sandelowski, 2000, 2010). The grounded theory features included inductive, comparative, and cyclic data analysis to enable generation of thematic findings. This study was approved by Monash University Human Research Ethics Committee (1301). Social media was used to recruit a convenience sample who completed a screening survey containing the questions, Are you aged 18 years or over?, Do you live in Australia?, and Have you received treatment for depression from a mental health professional in the last year? Thirty-five individuals replied “yes” to all the questions and provided contact details. Following AG’s attempts to contact these people, fourteen completed the Patient

Health Questionnaire 9 [PHQ-9; (Kroenke et al., 2001)]. This instrument was intended to identify potential participants who were severely depressed for study exclusion. None were severely depressed. Following completion of the PHQ-9 it was possible to schedule and conduct twelve interviews.

Participants provided written informed consent before semi-structured interviews. Interviews were face to face and audio-recorded. Two authors (AG, JB) conducted interviews from June to August 2017. We commenced each interview by saying: “We are interested to find out how you ended up receiving treatment for depression. Can you tell us about this?” Additional prompts and questions ensured that pertinent data was collected (see Supplementary Materials in Appendix D, Table 2). After interviews, participants were offered a \$50 shopping voucher.

Approximately 20 minutes into each interview a researcher-led modelling exercise commenced: A flowchart was developed depicting the participant’s experiences (Jun, Ward, Morris, & Clarkson, 2009). Items were anchored around a timeline, constructed using units that reflected the participant’s language (i.e., age, educational stage). We used timelines in conjunction with interviews as they enhance the experience and improve data quality (Kolar & Ahmad, 2017; Leung, 2010). Mental healthcare contacts and significant life events were included in the flowcharts. Throughout interviews, participants were invited to modify the flowchart, to improve accuracy [member checking stage one, Harper and Cole (2012)]. After the interviews, flowcharts were photographed and re-constructed electronically. This chart and the verbatim transcript were emailed to participants who were invited to modify them (member checking stage 2). Immediately following the interview, participants completed a printed questionnaire. This included demographic questions, the PHQ-9, and mental health service use questions (Slade et al., 2009).

Qualitative data were initially coded by AG. Data segments were coded with researcher-created labels, comparable codes condensed into researcher created categories, and comparable categories condensed into themes. Two authors (JB, CO) provided inter-rater reliability as they reviewed the data, categories and themes. Data interpretations were discussed until all were satisfied with the presentation. This inter-rater process was used to promote interpretive rigor (Kitto, Chesters, & Grbich, 2008). Summative statistics were also prepared. Further details relating to the analysis are in Appendix D Table 2, Supplementary Material, which also illustrates how the study followed the consolidated criteria for reporting qualitative studies (COREQ) checklist (Tong, Sainsbury, & Craig, 2007).

9.3 Results

From June to August 2017, twelve interviews that averaged 92 minutes ($SD = 12.5$) were conducted. Participants (8 female) were aged 22-67 years ($M = 41.83$; $SD = 15.99$). All resided in Victoria, Australia (see Table 9.1 for demographics). Four themes and 13 categories emerged during the data analysis (see Table 9.2).

9.3.1 Theme 1: Helpful face-to-face individual therapy was engaging, available, and delivered by skilled health professionals.

Participants derived greatest benefit from face-to-face therapy with professionals. All participants described helpful therapeutic relationships with at least one healthcare professional, including general practitioners (GP; 9), psychiatrists (7), psychologists (6), counsellors (3), nurses (2), social workers (2) and a school counsellor (1). For many, these therapeutic experiences were life changing, *“it’s like letting it all go and putting it out there and it’s not weighing you down ...I just found it freeing (P5).”*

Table 9.1

Description of participants

Variable	Category	N
Sex	Male	4
	Female	8
Educational attainment	Completed high school	4
	Undergraduate degree	3
	Postgraduate degree	4
	TAFE (Tertiary and Further Education) course	1
Employment status	Retired	2
	Working full time	2
	Working part time	3
	Full time student	4
	Home duties	1
Country of Birth	Australia	9
	United Kingdom	3
Private health insurance	Yes	9
	No	3
Healthcare card*	Yes	7
	No	5
Living arrangements	Alone	3
	With others	9
Language spoken at home	English	12
Current depression severity as measured by PHQ-9	No depression	7
	Mild	4
	Moderate	1
Health service use for mental health issues		
Ever admitted to hospital for mental health issues	Yes	3
	No	9
	Yes (admitted for 84 nights)	1

Admitted to hospital in the last year for mental health issues	No	11
Ever prescribed a medication for mental health issues	Yes	12
No. of consultations with health professional in the last year		Range 2-62 ($M = 17.0, SD = 16.9$)
No. of consultations with a general practitioner in the last year		Range 0-14 ($M = 4.5, SD = 3.6$)
No. of consultations with a psychiatrist in the last year		Range 0-10 ($M = 2.1, SD = 3.3$)
No. of consultations with a psychologist in the last year		Range 0-52 ($M = 8.1, SD = 14.5$)

*Note: The Health Care Card is available from the Australian Government and assists benefit recipients, low income earners and selected other customer groups with access to cheaper pharmaceuticals and subsidized medical services.

Table 9.2

Overview of the thematic and category findings with illustrative quotes

Themes	Categories	Illustrative quotes
Theme 1: Helpful face-to-face individual therapy was engaging, available, and delivered by skilled health professionals	Helpful healthcare professionals were fiscally, geographically and temporally available	"Cost was a huge issue for me" (P6)
	Helpful healthcare professionals had deep, empathetic, thoughtful and trusting relationships with their patients	"He was listening to me, he was listening to me, um and I wasn't scared with him and I don't know because he's a tiny little ... man, he was a tiny little thing, um but he just had an air of confidence or something, something, there was a rapport between us, um, he's my best friend. He really is my best ... I was only there the other week and we were both sitting there and so we both had to get out of our chairs and both sort of went, oh, we realized that we'd grown old together" (P1)
	Helpful treatment was responsive to the patient	"I told her about some of the things [domestic violence] that had been happening, and she said right, you're not going back home. And they put me up in a hotel for the night." (P9)
Theme 2: Group therapies and online support tools helped some people with depression.	Mindfulness meditation	"it was probably 4 or 5 years ago, I went and saw [the social worker] and attended an MBSR [mindfulness-based stress reduction] program. And he got me really interested in Eastern forms of recovery. Meditation, mindfulness, um, some Buddhist teachings. So I ended up buying books and reading, developing a formal meditation practice... that helped a lot." (P7)
	Bibliotherapy	"I find reading them [books] and looking at them and thinking oh yeah, that's how I feel and I take bits and pieces from everywhere and I find breathing techniques seem to work really well for me, like helping me sleep" (P5)
	Mobile device applications and the Internet	"I was looking at a few websites and I found that I was just getting caught up in doing the assessments and Oh My God I've got this and I've got that and I felt like I had everything and I was self-diagnosing and then I got banned from using the internet by my husband. He's like, you're not diagnosing yourself." (P12)

Theme 3: Depression symptoms, co-existing stressors and stigma delayed help-seeking from healthcare professionals	Nature of depression (i.e., utter exhaustion, withdrawal from other people and a distorted perspective)	"It's so overpowering, when you're depressed, that feeling that you have, it takes over everything. Like I adore my family, they don't come into it when I'm depressed. There is nothing past that over whelming feeling that I have, that I can't do. That I can't function. I <i>cannot</i> do anything, and that's not for me, that's not for anyone, I can't do anything. I physically and mentally cannot do anything" (P12)
	Impact of multiple health and personal stressors	"I had this whole mess of symptoms tied in with chronic health problems and chronic pain ...I've got physical health problems and mental health problems and either of them would be enough to fuck up your average person. Having them both at the same time is an extra challenge." (P2)
	Stigma	"... back 11 years ago and you know, in a rural area, mental health was not mentioned very much at all and I was embarrassed for many years to have any mental health issues and didn't tell anyone, it was a big secret." (P10)
Theme 4: Life-role and self-harm threats, and supportive others were help-seeking catalysts	A threat to a cherished social role	"I'd be lying if I said I always gave as much shit about myself as I could, as I should. But I could see the impact that ...it was having on wife and then my children ...I had a responsibility to the people around me to deal with this." (P2)
	Recommendation of a medical practitioner treating them for a different condition	"My husband found me on the couch pretty much nearly in a comma, he couldn't get me up, I was not responding, he dragged me to the doctor. I saw another GP because [my regular GP] wasn't availableI had this really bad pain in my head like I've never had ...they ended up putting me in the hospital, just the local hospital ...So that's when [my regular GP] came back to see me and said ...you need to go and see a psychiatrist" (P12)
	Advice or insistence of an authority figure or family members	"My employer ...they basically asked for things to get done, you know, they said, you're not quite right "participants name", you've got health issues. They didn't say to get over it, it was more, let's fix it. Let's get you fixed, OK? So that's where [the GP], the others all started to come in and form a team" (P3)
	Self-harm	"I can't remember exactly how it happened. I did want to kill myself. Like I had um like razor things. I didn't really do it ...I was just ...I don't know, I just had that real urge to die I think. And um, I don't know if I rang someone or...went and saw a doctor? I can't remember how the CATT [crisis assessment and treatment team] team got involved. So I went and saw them" (P9)
	Without crisis, the catalyst was the participant's insight about their mental health	"That was the worst ever. And um, so when [the baby] was born, there was ...I was ...that's sort of why I knew. I was like Okay, here we go. Let's not get back to where ... cos that's where it's going. Ha. Yeah. That's why I knew, cos I'd sort of had insight and experience." (P11)

Mental health service costs were important for nine participants and were described as a “*huge issue*”. Helpful professionals suggested how to access subsidized services. Many participants only accessed psychotherapy services via mental healthcare treatment plans developed by GPs which provide referrals for ten subsidized therapeutic sessions annually (Pirkis et al., 2011). Many used these Medicare subsidized service allotments early in the year.

Several participants valued local services, especially when specialist mental healthcare was available in GPs’ clinics, “...*like they were actually ...in the centre, so I didn’t have to go anywhere else (P9).*” It was difficult for people who did not live in cities to obtain local services, “*there’s not much around home ...everything is in Melbourne (P12).*”

Helpful healthcare professionals accommodated patients’ immediate, ongoing and sometimes intense needs, “*I had to see “the psychiatrist” everyday ...and I got over it [the crisis] (P1)*”. Knowing that treatment remained available if needed was important.

All participants described helpful healthcare professionals’ deep engagement with them, attentive listening, commitment to their wellbeing, and ability to identify participants’ needs, “*He [profession?] was the one that spoke to me and got to the root of the problem (P1).*”

Four participants talked about the importance of therapist rapport.

“You have to find a therapist that you have a rapport with, someone that you can trust and say these things to them because saying them first of all ... It’s almost impossible to say them to yourself, you know, um because you’ve hidden them away so deeply (P1).”

Two participants reported that, as children, they were abused and therefore feeling safe during therapy was important. One described this feeling as, “*I’m just completely myself with him and ...it feels ok (P12)*”. Two participants conveyed that the relaxed and gentle approach

taken by their healthcare professionals made them feel safe, like “*going to a friend’s place and having a chat where I did all the talking (P5)*”.

Therapists demonstrated responsiveness to patients’ needs by attending to issues associated with medication. Ten participants spoke about how healthcare professionals helped them manage their medication regime. For some it was difficult to commence taking medication. One said, “*...I just sort of had this sense that because I was on medication ...that I... it was a bit of a cop out ...that you should be able to get over things through therapy (P10)*.” Healthcare professionals provided reassurance about medication, for example, through normalization: “*My GP sort of says to me ...if you’re a diabetic, you’d be taking insulin ...so why not?(P10)*”

Seven participants described how helpful healthcare professionals adjusted their therapy in response to specific issues associated with the clients’ situations. For one participant, a nurse facilitated an escape route from an abusive partner. Two participants conveyed how they appreciated their clinicians’ ability to help them make sense of their situation: “*She [GP] will listen to what I have to say and help me sort that out (P4)*.” The same participant (P4) also talked about the helpfulness of good communication about her among her clinician team.

9.3.2 Theme 2: Group therapies and online support tools helped some with depression.

All participants had experienced non one-to-one therapies. Nine had received group-based mindfulness meditation training. All agreed maintaining a meditation practise was difficult but probably beneficial, “*...I was never good at mindfulness and I probably still need to work on it (P12)*.” At the time of the interviews none of the participants had a regular meditation practise.

Four participants spoke about the therapeutic benefits of self-help books. One was helped by a cognitive behavioural therapy book. Another collected and used relaxation techniques described in various books.

Seven participants mentioned the *beyondblue website*¹. Three were aware of it but never used it. Two accessed the site but did not find it helpful. One had received a referral to headspace² and helpful clinicians because of accessing the beyondblue website. One participant experienced relief after reading about depersonalization on this website, learning that others also experienced this symptom. Two participants used *moodgym*³. One did not find it helpful whereas another said:

“The first time you do it you’re like, whatever, like you don’t get it. But then the more insight you gain and the more you know about it all, it becomes a bit more helpful. (P8)”

Five participants referred to the Smiling Mind App⁴. One participant noted that he got bored when he tried to use it. Another said: *“it’s been like the closest thing to get me to meditate and try and work on my mindfulness (P6)”*.

9.3.3 Theme 3: Depression symptoms, co-existing stressors and stigma delayed seeking help from healthcare professionals.

While there was some variation, most participants experienced a substantial gap between the emergence of depressive symptoms and receipt of therapy perceived as effective (Table 9.3). Some of the reasons for this delay will be described.

¹ beyondblue is an Australian national initiative designed to raise awareness and motivate action aimed at depression prevention. Further information at: (Dunt et al., 2010)

² headspace is an Australian nationally funded set of mental health services designed specifically for adolescents. Further information at: (Jorm, 2015)

³ moodgym is an on online self-directed cognitive behavioural therapy program. Further information at: (Calear, Christensen, Mackinnon, Griffiths, & O’Kearney, 2009)

⁴ Smiling Mind guided meditation app. Further information at: <https://www.smilingmind.com.au/about-us>

Participants indicated that depressive symptoms were a help-seeking barrier. Nine spoke about exhaustion. Participants described difficulties leaving their beds when depressed and feeling overwhelmed, *“Imagine trying to run a marathon and then trying to get from your front door to your shower, times ten, that was what it was like getting up to get into the shower (P6).”* Others had difficulty leaving their homes, *“I don’t think I left the house for about 3 months (P5).”*

Help-seeking required social interaction. However, three participants withdrew from social interaction because they believed they were not worth interacting with:

“When you get into that real clinical depression, that’s when it’s really hard to motivate yourself. Because you know, you just feel like you’re ...you’re a hopeless case, and you ...you know, no one can help you, and who would want to talk to you anyway (P10).”

When acutely depressed, several participants reported being incapable of the self-reflection necessary to realize they needed help, *“My sense of perspective is broken. I cannot trust my own sense of what’s ok, when I’m out of control (P2).”*

Participants contended with multiple health and/or personal stressors. These triggered and worsened depression and added an element of chaos to their lives. Such stressors sometimes masked depression because the distinction between a “non-clinical” response to the stressors and “clinical depression” was not clear. Regarding the impact of accumulated stressors, a participant said, *“It started at a time when I was really, really busy at work, so there was sort of extra pressure. And usually it’s stress that brings on you know...really brings about ...a real strong feeling of depression (P10).”*

Six participants described how serious medical conditions impacted on their perception of depressive symptoms. When speaking about his recovery, one participant said; *“It’s been*

a dual journey of understanding the physical things that are wrong with me but also understanding the things that up here (taps head) that are wrong (P2)."

Alongside depression, nine participants had co-morbid mental health conditions. Six experienced what they referred to as "anxiety", two had panic attacks, post-traumatic stress disorder and drug and alcohol issues, and one had autism, hoarding issues and borderline personality disorder. Some participants were unable to differentiate the effects of different conditions, *"It's a combination of depression, but there's also some anxiety factors as well (P2)."*

Stigma played a substantial role in discouraging participants from seeking help. Many participants were concerned about negative consequences at work if it became known they were depressed, *"I definitely wouldn't want it being public knowledge (P6)."* Some participants conveyed that taking antidepressants was particularly stigmatized.

9.3.4 Theme 4: Life-role and self-harm threats, and supportive others were help-seeking catalysts.

A catalyst is a person or thing that precipitates an event or change. We identified 41 catalysts, in 5 categories, that led participants to seek treatment (see Table 9.4). The most common catalyst was a threat to a cherished role. When participants were affected by these catalysts, desperation was associated with their help-seeking. Four sought help upon realizing how their mental state impacted on their parenting. For two participants this occurred when they had newborns:

"My husband had to go back to work, four days after I'd given birth so I was alone, my parents live [interstate] ...I thought I can't do this without getting help (P11)."

Two participants sought help from professionals when they realized poor mental health was making it increasingly difficult to work. Failing or near-failing university courses triggered four participants' help-seeking.

Table 9.3

Time between the participants' first experience of depressive symptoms and their receipt of helpful therapy

Time	Participant specific descriptions
A few months (4 participants)	<p>P11 received help for postnatal depression within a few days of its onset. She received advice from her GP whose work was often focused on mental health issues, who had previously treated her for an anxiety disorder, who connected her with a helpful, free national helpline operated by Perinatal Anxiety and Depression Australia (see https://www.panda.org.au/).</p> <p>Fortuitous circumstances resulted in P10 accessing helpful services a few months after she experienced symptoms of anxiety and depression: <i>"I thought that a student counsellor would just tell you about what subjects to do, but ...I happened upon a guy who was actually a gestalt therapist."</i></p> <p>Despite professional insight into the healthcare industry, there was an element of luck in P5 quickly finding a helpful GP, <i>"I think I just fell over them. It was when we first moved to [suburb]" and they were bulk billing [i.e., no out-of-pocket fee payable] at the clinic opposite ...and I went in and she was the first doctor available."</i></p> <p>P9 had repeatedly and quickly accessed various mental health services</p>
5-6 years (2 participants)	<p>P8 first experienced depression during secondary school but received no mental health services. Five years later she sought and obtained helpful therapy. She said, <i>"I put it off for a long time."</i></p> <p>P4 also experienced depressive symptoms during secondary school and received helpful services five years after her first experience of depression. However, this participant had previously and unsuccessfully attempted to obtain effective help from two psychologists, one counsellor, one psychiatrist and seven GPs.</p>
Between 10-20 years (4 participants)	<p>Despite experiencing symptoms of bipolar disorder for 15 years, it was only in the last three years that P2 received a diagnosis of bipolar disorder and helpful therapy. This was despite previously seeing a psychiatrist for 12 months.</p> <p>Nineteen years passed between a depression diagnosis and helpful therapy for P3.</p> <p>P6 believed his first episode of depression arose from being bullied early in secondary school. He sought help 11 years later, when he was <i>"in a massive hole"</i>.</p>

A few months after his first depressive symptoms P7 presented to a GP without much benefit. Fifteen years later a therapist suggested he undertake “talking therapy”, which he found helpful. Regarding this long delay before receiving help, he said, *“I wish I could have it [time] back ...there are some amazing people out there, and it’s taken me this long to find them.”*

Over 20 years (2 participants)	<p>P1 first experienced depression when 18 years old. Despite receiving treatment for various other health conditions, she first received helpful mental health treatment from a psychiatrist when 47 years old.</p> <p>P12 had a traumatic childhood and could not remember a time when she was not experiencing depression and anxiety. She found a supportive GP who referred her to helpful services when 33 years old.</p>
-----------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Table 9.4

Categories of the catalysts

Categories of Catalysts	How many participants were affected by this type of catalyst N=12	How many times was the category Referred to by participants N=45*	Did such a catalyst require the participants to be mainly active or passive	Did the catalyst result from a crisis?
A threat to a cherished social role	10	13	Active	Yes
Recommendation of a medical practitioner treating them for a different condition	7	10	Passive	Yes
Advice or insistence of an authority figure or family members	6	10	Passive	Yes
Self-harm	6	7	Active	Yes
Without crisis, the catalyst was the participant's insight about their mental health status	4	5	Active	No

*Note: Four of the 41 catalysts were described using two categories, thus in all, the five categories were applied 45 times.

For seven participants the recommendation of a medical practitioner who was treating them for another condition led to mental health service use. For example, one participant became aware he was depressed while receiving care as a partner of someone with post-natal depression.

Authority figures, such as university supervisors, workplace supervisors and school staff, encouraged some participants to use mental health services. Family members, such as parents and spouses, were also instrumental in getting participants to mental health services. One participant said: *“I was you know, sobbing my eyes out and ...telling her I’m scared, and all this. And like any mother would do ...Okay, off to the doctor (P11).”*

On seven occasions participants received mental health services because they expressed an intention (4/12) or had (3/12) self-harmed. For example, one participant’s brother took him to their family GP when he started talking about possibly hurting himself. Another participant twice received mental health services after intentionally overdosing.

On five occasions participants obtained mental healthcare for themselves without a crisis. Two participants accessed services via employee assistance programs. Another, using the internet, identified a mindfulness course, and the course trainer’s advice allowed him to identify supportive clinicians. These participants had previously experienced depression and had considerable insight into their mental health status.

9.4 Discussion and conclusion

We examined the service use pathways and experiences of Australians who had received treatment for depression. The nature of depression, the impact of multiple health and personal stressors, and stigma were all things that delayed help-seeking. While there is an

extensive literature on the impact of multiple stressors (Avenevoli, Swendsen, He, Burstein, & Merikangas, 2015; Harrison et al., 2012; Jolles, Haynes-Maslow, Roberts, & Dusetzina, 2015) and stigma (Campbell, 2013; Kitchen et al., 2013; Zhao, Lustria, & Hendrickse, 2017) on service use, less has been written about how depressive symptoms influence it.

Participants highlighted three symptoms of depression that impacted on help-seeking: exhaustion, withdrawal from others, and a distorted self-perspective. We conducted a narrative review on help-seeking and service use among people with depression and found no reference to how withdrawal from others impacts on healthcare access among people with depression. However, within this literature, the effects of exhaustion on service use have been noted (Gensichen et al., 2012), as have the impact of a distorted perspectives [i.e., feeling undeserving of doctor's time; (Gask, Rogers, Oliver, May, & Roland, 2003)], lack of the necessary confidence and assertiveness (Lester, Tritter, & Sorohan, 2005), and diminished self-worth and feelings of hopelessness (Farmer, Farrand, & O'Mahen, 2012).

To equip people to help individuals with depression access services, targeted interventions are needed, including general community education. As an example, mental health first aid training (Rosenberg, 2011) provides lay people with skills to recognise mental health issues and support individuals in accessing healthcare services. By 2018, however, only 2% of Australians had completed mental health first aid training (Jorm & Kitchener, 2018). In contrast, during a three-year period 11% of Australians completed general first aid training (Jorm & Kitchener, 2011). If the penetration of mental health first aid training approached that of general first aid training perhaps the delay between depressive symptoms onset and service use could be reduced. Another initiative which aims to promote discussion

of mental health issues among the general community is the “RU OK initiative⁵” (RU OK?, 2018, 11 May). If evaluation of this initiative proves positive, extending this program may be another way to promote mental health education and encourage people who are experiencing depression to access professional services.

It is important to support people with depression who have engaged with services to remain engaged until they recover. Similarly, people who are experiencing a depressive relapse but are not currently engaged with services may benefit from support to re-engage with services. Existing research suggests that some form of case management (Gensichen et al., 2012), or contact with peer support workers, may promote sustained mental health services use (Gillard, Gibson, Holley, & Lucock, 2015; Jacobson, Trojanowski, & Dewa, 2012). We propose developing an intervention where individuals with a history of depression are offered access to a “peer support worker” who would contact the client periodically to determine if they needed help engaging with service providers.

A positive relationship with a healthcare professional was critical in the recovery process of participants in this study. Three categories emerged which described such relationships: first, helpful healthcare professionals were available (financially, geographically and temporally); second, they had deep, empathetic, thoughtful and trusting relationships with their patients; and third, helpful therapists were responsive to the patient. In Australia, one way to increase the availability of services for people with depression would be to increase the number of subsidized therapy sessions available through the national health insurance scheme, Medicare. Short term therapies are appropriate for individuals who have acute conditions, however, depression is often a chronic condition (Scott, 2006). An

⁵ RU Okay? is an Australian initiative which aims to promote connection between people by encouraging conversations about mental health, for further information see <https://www.ruok.org.au/>.

international review of mental health services designed to treat depression as a chronic condition may yield valuable insights about how to supplement services focussed on the provision of acute care.

We found that helpful healthcare professionals had deep, empathetic, thoughtful and trusting relationship with their patients, consistent with earlier findings (Badger & Nolan, 2005; Kravitz et al., 2011; Percival, Donovan, Kessler, & Turner, 2017). Like others, we found that helpful healthcare professionals were responsive to the individual needs of patients with depression. For example, a systematic review found that recovery from depression was facilitated by healthcare professionals who “individualized components of care” (Richardson & Barkham, 2017).

A difficulty for many participants was locating therapists with whom they could build therapeutic relationships. Participants often invested substantial time, money and emotional energy to determine whether a healthcare professional was compatible with their needs, and an element of luck was often involved in finding someone helpful. To help alleviate this problem a database which includes mental healthcare provider characteristics could be developed and evaluated. In Australia, the Australian Psychological Society hosts an internet accessible “find a psychologist” service (Rogers, 2018). While this service is limited because it is discipline specific, it provides a useful model of what is achievable. It would be feasible to include information in a multi-disciplinary database relating to the availability of mental healthcare professions (see Table 9.5). It might be more difficult, because of its subjective nature, to capture information relating to the nature of the relationships that therapists had the capacity to develop and therapist’s responsiveness to individual needs. Nonetheless, responses to the other questions in Table 9.5 may be informative.

Table 9.5

Healthcare providers information that may help people with depression choose compatible providers

Logistics	Costs
	Do you bulk bill? *
	What is the usual length of sessions?
	What is the cost per session?
	Is there any flexibility in this pricing?
	<i>Physical location</i>
	Where are your clinic/s located?
	Do you or are you prepared to use any technology to link with patients, i.e., video conferencing, face time etc.
	<i>Availability</i>
	How long do patients generally have to wait to get their first appointment?
	Do you have the resources to see patients daily if necessary?
	Are you available for emergency appointments?
	Are you prepared to meet with the family/friends/supporters of your patients?
Health professional personal characteristics	Age Gender Any specific mental health training? Any specific mental health interests?
Service characteristics	Do you regularly work with other mental health care professionals? If so who?

*Note: If an Australian attending a medical practice is bulk billed, it means that they assign your right to the Medicare benefit (a government paid subsidy) to the health professional and the patient themselves do not pay any fees.

For approximately 90% of occasions, participants' entry into mental healthcare services was triggered by a crisis in the form of a threat to a cherished identity, a medical complication of another condition, or an episode of self-harm (see Table 9.4). Similarly, Shin (2002) found that "most participants [with depression] arrived at mental health centres involuntary, sometimes near death, after much suffering due to their illness" (p. 472). A challenge in reducing the burden of depression is to create circumstances where help-seeking is not delayed until the point of crisis, yet it is unclear how to do this and further research is required in this area.

9.4.1 Strengths and limitations.

Although the sample of 12 complied with the recommended size for qualitative studies (Hill et al., 2005), more participants may have provided additional novel data. Combined use of in-depth qualitative interviews and flowchart modelling was an innovative way of obtaining insights into the help-seeking of individuals with depression. Modelling allowed member checking to occur during the interview. The flow charts were a memory aid for participants and interviewers. Several participants commented on the helpfulness of the modelling process, however, one found it somewhat confronting to see her mental health history depicted visually. Thus, it was important to continually query how participants felt about the modelling process.

9.4.2 Conclusion.

Many people with depression suffer because they do not access effective treatments. This study revealed that significant barriers to health service use were depressive symptoms (i.e., exhaustion, reduced ability and desire to interact with others, and compromised self-perception). At times, participants were unable to overcome these barriers on their own. Therefore, interventions to equip the general population with information and skills to assist

individuals with depression in accessing care are needed. There was often an element of luck in finding helpful healthcare providers. Availability of information, including mental healthcare providers' costs, physical location and availability, may help people with depression to identify compatible, helpful therapists. Implementation of recommendations arising from this study could improve pathways to helpful mental health services for individuals with depression, thereby reducing its burden.

Chapter 10: General Discussion

My overall aim in this dissertation was to increase knowledge about issues to do with the delivery and receipt of mental illness information in the Australian context. I focused on this because the existing evidence, which I summarised in chapters one and two, suggested that receipt of mental illness information may help people with mental illness manage their condition and may also help carers of people with mental illness. I thought that if we understood more about the delivery of mental illness information this knowledge could be used to improve our delivery of such information, thereby reducing the burden associated with mental illness. In this chapter I integrate the findings from the various analyses to draw overall conclusions; discussion of implications, strengths and limitations; and directions for future research.

10.1 Synthesis of key findings

10.1.1 Further evidence supporting the argument that efforts to deliver mental illness information in Australia are warranted.

In Chapter 4 I reported that 66% of Australians and 54% of Australians with a mental illness did not recall receiving mental illness information during the year before the 2007 National Survey of Mental Health and Wellbeing. So, in 2007, even in a wealthy country such as Australia where there have been extensive efforts to distribute information relating to mental illness, many have not received this information.

I also reported that just over half (51%) of all Australians who received mental illness information found the received information helpful, while 67% of Australians with any mental illness and 77% (Chapter 6) of people with depression found the mental illness information they received helpful. Other researchers describing evidence arising from the Perceived Need for Care Questionnaire (PNCQ) have suggested that one out of every 20

community members are conscious of a need for mental illness information during a twelve month period (Meadows, Burgess, et al., 2000; Meadows & Burgess, 2009; Sunderland & Findlay, 2013) and between a third to half of people with mental illness perceive a need for mental illness information during a twelve month period (Dezetter et al., 2015; Meadows & Bobevski, 2011; Prins et al., 2011; Prins et al., 2009).

So, the current evidence suggests first, large segments of the community are not receiving mental illness related information, second that large proportions of the population are conscious of a need for mental illness information and third that more than half of the people who receive such information find it helpful. Taken together, these findings strengthen the argument that it is worthwhile investing further in the provision of mental illness related information in Australia.

10.1.2 Bench marks against which to evaluate continued efforts to deliver mental illness information.

While there has been extensive published work examining the need for mental illness information in clinical samples, and a smaller body of working examining the need for such information in the general population, the estimates presented within this dissertation are the first nationally representative estimates of receipt of mental illness information and its perceived helpfulness (see Table 10.1). These are important as they provide a benchmark which can be used to evaluate future efforts to deliver mental illness information, both in Australia and internationally.

Table 10.1

Nationally representative estimates of Australians' receipt of mental illness information and its perceived helpfulness

Population of interest	Did you receive mental illness information in the year before the 2007 National Survey of Mental Health and Wellbeing?		% of the people who received such information who found the information helpful
	Yes	No	
All Australians	34%	66%	51%
All Australians with a mental illness	46%	54%	67%
All Australians with depression	55%	45%	77%

10.1.3 We need to target information interventions carefully because the evidence suggests that the “knowledge gap” exists in relation to the receipt of mental illness information in Australia.

The “knowledge gap hypothesis” predicts widening disparities in knowledge of publicised issues, such as mental health, among different socioeconomic groups (Jenssen Anders, 2013). The suggestion is that highly educated, well connected and wealthy individuals receive more benefit from the provided information than do others in the community (Gaziano, 2017; Hwang & Jeong, 2009). Australians who were less likely to recall receiving mental illness information were less educated, socially disadvantaged, older and non-English speakers (see Chapter 4). Australians with depression, (67% who had major depression, 20% who had moderate depression and 5% with minor depression, see Table Appendix B1), who were less likely to receive mental illness information were less educated, less likely to have accessed mental health services, and less likely to believe they had mental health needs (see Chapter 6). Combined, these results support the notion that disparities in the

impact of information suggested by the “knowledge gap hypothesis” operate in relation to receipt of mental illness information in the Australian context. Thus, it is not enough to simply provide mental illness information. The design of mental illness information campaigns needs to ensure that people in lower socio-economic groups can receive and use the information, particularly as it is likely that prevalence of mental illness is higher among people in disadvantaged groups (Meyer, Castro-Schilo, & Aguilar-Gaxiola, 2014).

Community members would have greater access to mental illness information if there was a greater saturation of mental illness information, and, if issues to do with both the presentation and the channel that was used to deliver such information were carefully considered the information may have an increased impact. Bas and Grabe (2015) compared knowledge retention when information was presented as cold-hard facts (i.e. in the format of traditional news) and when the same information was presented as testimony of people who had experienced the issues (i.e. an emotion provoking format). They found that the use of an emotion provoking format was associated with smaller knowledge gaps (Bas & Grabe, 2015). If reduced knowledge gap is observed when mental illness related information is presented in an emotion provoking format it may be both appropriate and feasible to use this mode of delivery.

Innovative methods have been used to disseminate health information to more marginalised groups and such methods may be required to effectively deliver mental illness related information. For instance, an entertainment-based channel was successfully used to increase awareness of breast cancer in the American Hispanic community when a breast cancer story line was broadcast as part of a popular American Hispanic soap opera. A commercial containing a public service announcement about a breast cancer phone counselling service was screened during the program (Wilkin et al., 2007). It may prove

worthwhile to explore the feasibility of introducing a mental illness related story line into popular Australian soap operas such as Home and Away or Neighbours, in conjunction with advertising for mental health services.

10.1.4 People with depression may need help accessing therapy because symptoms of depression are barriers to service use.

In Chapter 9, I presented a qualitative study examining the help-seeking behaviours of twelve Australians who had been treated by mental health care professionals for depression. In chapter 7, I described an empirically derived model of mental health service use for Australians with depression. Depicted in this model was the positive relationship between social connections and service use: people with depression who reported more social connections were more likely to have received mental health services. Some of the results from the qualitative study allow us to understand something more about why this connection exists. I found that symptoms of depression - specifically, exhaustion, reduced ability and desire to interact with others, and compromised self-perception - were barriers to service use. At times during their illnesses people with depression could not overcome these barriers alone. They needed the support of the people around them to help them access mental health services. Service providers need to ensure that there are pathways in place that allow their clients to keep accessing services even when their depression is at its most extreme and the symptoms of depression pose a strong barrier to service use.

10.1.5 The content of mental illness related information that would help those with depression

While the material presented in this thesis highlights the importance of mental illness related information particularly to those with a mental illness. It is not immediately apparent what information is helpful and when during an illness it is best delivered. More research needs to be conducted exploring these issues. Those with different mental illness may benefit

from different information. Some of the work presented in the qualitative study relating to depression begins to address these issues in relation to depression.

All the participants interviewed in the qualitative study had benefited from positive clinical relationships with mental health professionals, but many of them had taken a long time, in some cases decades, to find supportive mental health professionals. Given that the average gap between the onset of symptoms and service use was found to be 8.2 years among Australians with mood disorders (Thompson, Issakidis, & Hunt, 2008) it was unsurprising that for the participants in our study there was a significant gap between onset of symptoms and receipt of helpful services. The participants felt that it was important for those with depression to know that positive clinical relationships with mental health professionals were possible and they should keep trying to seek them out as they could be life changing.

The participants reported that it felt like luck was often involved in their finding of helpful healthcare professionals. Making therapist specific information, such as healthcare provider costs, physical location and availability easily may help those with depression more quickly identify compatible therapists. As was discussed in more detail in chapter 9, in Australia this could be done by extending discipline specific databases such as that maintained by the Australian Psychological Society (Rogers, 2018).

10.1.6 Channels used to deliver mental illness related information

Dutta-Bergman (2004), distinguishes between active and passive communication channels. In chapters 4 and 6 I reported that Australians in general were more likely to have received mental illness information from passive channels (television, radio, newspaper; see Table 3) than channels that required an active search. Thus, to raise levels of mental health literacy in the general community it is important to ensure that mental illness related information continues to be presented via passive channels. I also found that those who

received information from active channels (internet, non-fiction book, fiction books), those who were intentionally seeking mental illness related information, were more likely to find the information that they received helpful. Thus, it is important to ensure that accurate, helpful, well presented mental illness related information continues to be made available via active channels such as the internet.

10.1.7 The association between receipt of mental illness information and service use.

Researchers studying the impact of general health information have suggested that receipt of such information can complement health service use (Dwyer & Liu, 2013; Suziedelyte, 2012) or it can be used as a substitute to service use (Schmid, 2014; Wagner et al., 2017). The participants who were involved in our qualitative interviews (Chapter 9), emphasised the important roles that clinicians had played in helping them find a way to cope with their depression.

In the mental health literature, receipt of mental illness information has generally been found to be associated with increased help-seeking behaviours in clinical samples, and improved attitudes to help-seeking among non-clinical samples (Xu et al., 2018). My findings are consistent with those in the mental health literature as I found that receipt of mental illness information was associated with increased service use when I examined Australians generally, Australians with any mental illness (Chapter 4), and Australians with depression (Chapter 6 and 7). This is important as individuals wishing to promote mental wellbeing via the delivery of mental illness information do not want to inadvertently negatively influence the help-seeking behaviours of people with mental illnesses.

10.2 Limitations

Despite its age, the data from the 2007 National Survey of Mental Health and Wellbeing is still important as it is the most recent national Australian survey from which the

prevalence of common mental illnesses can be estimated. Moreover, it was particularly important for the purposes of this dissertation because the survey included two questions about the receipt and helpfulness of mental illness information. However, the National Survey of Mental Health and Wellbeing data was collected a decade ago and there have been changes in the Australian mental health landscape since this time. For example, there has been a marked increase in dissemination of health information via mobile technologies and substantial efforts have been made to increase mental health literacy in the Australian community (Christensen et al., 2014).

One of the strengths of a survey such as the 2007 National Survey of Mental Health and Wellbeing is its use of the CIDI, which is a standardised instrument. As national surveys using the CIDI have been conducted in at least 28 countries (The World Mental Health Survey Initiative, 2018, 10 May). Further, the CIDI was used in the 1997 Australian National Survey of Mental Health and Wellbeing, as well as in the 2007 National Survey of Mental Health and Wellbeing. This allows researchers to detect changes over time. In contrast, the two questions focusing on receipt and helpfulness of mental illness related information are not part of the CIDI and have not been used in any other surveys either nationally or internationally, meaning there is no directly comparable data by which to contextualise these findings. Further, at this stage, there is only one timepoint for which the data was collected, which limits how much such data can reveal.

Another limitation was the brevity of the questions about information receipt. We can only ask so much with two questions. Much that would be of importance to policy makers and mental health communications researchers was not inquired about. For instance, the questions only inquired about mental illness information. Missing were any questions about information that may have been provided with the aim of promoting mental well-being. Also,

the data derived from these two questions revealed nothing about the content of mental health information that was received or was helpful. In future research, it may be worthwhile including additional questions to capture information relating to a person's motivation to seek mental illness information, the novelty of any mental illness information received, the ease with which information is understood, and any behaviour changes resulting from the receipt of such information.

Embedded in these two questions was a list of mental health information sources. Mental health professionals, however, were not included in this list. Given the association between mental health service use and receipt of mental illness information, future research should include mental health professionals on this list of information sources, along with mobile communication technologies.

10.3 Directions for future research

Since the 2007 Australian National Survey of Mental Health and Wellbeing there have been extensive changes to the Australian mental health informational landscape. The Chief Executive Officer of the Australian National Mental Health Commission, Peggy Brown, wrote in an open letter in January 2017 “the digital mental health sector has grown exponentially in a relatively short period of time” (Brown, 2017). Digital mental health or e-mental health is defined as “the use of the internet or related communication technologies or systems to deliver mental health information service or care” (Eysenbach, 2001). The Australian Government has made substantial investment in the development and dissemination of e-mental health services (Department of Health and Ageing, Commonwealth of Australia, 2012). Given the obvious changes in the informational landscape that have occurred since 2007 it would be beneficial to again survey Australians about their receipt of mental illness information. Comparing the new data with the base-rates

reported in the dissertation would allow researchers to draw further conclusions about how these recent information changes have impacted on the proportion of people accessing mental illness information, and further if these changes are related to changes in knowledge or service use.

10.4 Concluding remarks

The work presented in this dissertation provides more evidence that it is worth continuing to invest in the provision of mental illness information in Australia and to conduct further research on how information delivery and receipt can be improved. First, because in 2007 (when it was last assessed nationally) many Australians, and many Australians with a mental illness, were not receiving such information; second, because when such information is received, large proportions of recipients find it helpful. In the delivery of mental illness information there needs to a specific focus on individuals in lower socio-economic groups as they are less likely to receive and benefit from such information but more likely to have mental illnesses. The findings presented in this thesis relating to the extent of receipt and perceived helpfulness of mental information among Australians provide a useful benchmark which can be used in the evaluation of current and future efforts to deliver mental illness information. Such an evaluation would be particularly useful now as there have been substantial changes in the delivery of mental health information because of the advent of e-mental health; it is critical to determine whether these changes have resulted in a greater proportion of the community receiving mental illness information and in turn whether the increased service use has led to improved outcomes for people with mental illness.

References

- Andersen, R., & Newman, J. (1973). Societal and individual determinants of medical care utilization in the United States. *Milbank Memorial Fund Quarterly*, 51, 95-124.
- Andersen, R. M. (1995). Revisiting the Behavioral Model and access to medical care: Does it matter? *Journal of Health and Social Behavior*, 36(1), 1-10. doi:10.2307/2137284
- Andersen, R. M. (2008). National health surveys and the Behavioral Model of Health Services Use. *Medical Care*, 46(7), 647-653. doi:10.2307/40221718
- Andersson, L. M., Schierenbeck, I., Strumpher, J., Krantz, G., Topper, K., Backman, G., . . . Van Rooyen, D. (2013). Help-seeking behaviour, barriers to care and experiences of care among persons with depression in Eastern Cape, South Africa. *Journal of Affective Disorders*, 151(2), 439-448. doi:10.1016/j.jad.2013.06.022
- Andrade, M. C. R., Slade, M., Bandeira, M., Evans-Lacko, S., Martin, D., & Andreoli, S. B. (2018). Need for information in a representative sample of outpatients with schizophrenia disorders. *International Journal of Social Psychiatry*, 64(5), 476-481. doi:0020764018776350
- Andrews, G., & Henderson, S. (2000). *Unmet need in psychiatry; Problems, resources, responses* Cambridge: Cambridge university press
- Andrews, G., Issakidis, C., & Carter, G. (2001). Shortfall in mental health service utilisation. *The British Journal of Psychiatry*, 179(5), 417-425. doi:10.1192/bjp.179.5.417
- Anker, A. E., Reinhart, A. M., & Feeley, T. H. (2011). Health information seeking: A review of measures and methods. *Patient Education and Counseling*, 82(3), 346-354. doi:10.1016/j.pec.2010.12.008
- Askey, R., Holmshaw, J., Gamble, C., & Gray, R. (2009). What do carers of people with psychosis need from mental health services? Exploring the views of carers, service

- users and professionals. *Journal of Family Therapy*, 31(3), 310-331.
doi:10.1111/j.1467-6427.2009.00470.x
- Royal Australian and New Zealand College of Psychiatrists. (2004). Australian and New Zealand clinical practice guidelines for the treatment of depression. *Australian and New Zealand Journal of Psychiatry*, 38, 389-407.
- Australian Bureau of Statistics. (1998). *Mental health and wellbeing: Profile of adults, Australia*.
- Australian Bureau of Statistics. (2008). *National Survey of Mental Health and Wellbeing: Summary of results, 2007* (4326.0). Retrieved from <http://www.abs.gov.au/>
- Australian Bureau of Statistics. (2009). *2007 National Survey of Mental Health and Wellbeing: Users' guide* (4327.0). Retrieved from <http://www.abs.gov.au/>
- Avenevoli, S., Swendsen, J., He, J.-P., Burstein, M., & Merikangas, K. R. (2015). Major depression in the National Comorbidity Survey–Adolescent Supplement: Prevalence, correlates, and treatment. *Journal of the American Academy of Child and Adolescent Psychiatry*, 54(1), 37-44. e32. doi:10.1016/j.jaac.2014.10.010
- Babitsch, B., Gohl, D., & von Lengerke, T. (2012). Re-revisiting Andersen's Behavioral Model of Health Services Use: A systematic review of studies from 1998-2011. *Psycho-Social Medicine*, 9. doi:10.3205/psm000089
- Badger, F., & Nolan, P. (2005). Attributing recovery from depression. Perceptions of people cared for in primary care. *Journal of Clinical Nursing*, 16(3a), 25-34.
doi:10.1111/j.1365-2702.2006.01581.x
- Bandura, A. (2009). Social cognitive theory of mass communication. In *Media Effects* (pp. 110-140): Routledge.

- Barney, L. J., Griffiths, K. M., & Banfield, M. A. (2011). Explicit and implicit information needs of people with depression: A qualitative investigation of problems reported on an online depression support forum. *BioMed Central Psychiatry, 11*(1), 88.
doi:10.1186/1471-244X-11-88
- Barragan, B., & Palinkas, L. (2014). Mental health service use among trauma-exposed adults: A mixed-methods study. *Journal of Nervous and Mental Disease, 202*(3), 239-246.
doi:10.1097/NMD.0000000000000108
- Bentler, P. M. (2006). *EQS 6 structural equations program manual*. Encino: Multivariate Software, Inc.
- Bettman, J. R. (1979). *An Information Processing Theory of Consumer Choice*: Addison-Wesley Pub.
- Bounsanga, J., Voss, M. W., Crum, A. B., & Hung, M. (2016). The association between perceived health status and health information communication channels. *Journal of Health Communication, 21*(11), 1148-1152. doi:10.1080/10810730.2016.1231726
- Brewin, C., Wing, J., Mangen, S., Brugha, T., & MacCarthy, B. (1987). Principles and practice of measuring needs in the long-term mentally ill: The MRC Needs for Care Assessment. *Psychological Medicine, 17*(4), 971-981.
doi:10.1017/S0033291700000787
- Brown, P. (2017). *National Mental Health Commission submission to the 'your health your say' consultation on the national digital health strategy, January 2017*. Retrieved from <https://conversation.digitalhealth.gov.au/sites/default/files/2017-05/National-Mental-Health-Commission-Your-Health-Your-Say-Submission-2017.pdf>
- Buchthal, O. V., Doff, A. L., Hsu, L. A., Silbanuz, A., Heinrich, K. M., & Maddock, J. E. (2011). Avoiding a knowledge gap in a multiethnic statewide social marketing

- campaign: Is cultural tailoring sufficient? *Journal of Health Communication*, 16(3), 314-327. doi:10.1080/10810730.2010.535111
- Burgess, P. M., Pirkis, J. E., Slade, T. N., Johnston, A. K., Meadows, G. N., & Gunn, J. M. (2009). Service use for mental health problems: Findings from the 2007 National Survey of Mental Health and Wellbeing. *Australian and New Zealand Journal of Psychiatry*, 43(7), 615-623. doi:10.1080/00048670902970858
- Byrne, B. M. (1994). *Structural equation modelling with EQS and EQS/Windows: Basic concept, applications, and programming*: Sage Publications.
- Calear, A. L., Christensen, H., Mackinnon, A., Griffiths, K. M., & O'Kearney, R. (2009). The YouthMood Project: A cluster randomized controlled trial of an online cognitive behavioral program with adolescents. *Journal of Consulting and Clinical Psychology*, 77(6), 1021-1032. doi:2009-22711-002 [pii] 10.1037/a0017391
- Campbell, R. D. (2013). *When money isn't the issue: Socio-cultural factors in help-seeking among black Americans with depression*. (Doctoral dissertation), Retrieved from Dissertation Abstracts International Section A: Humanities and Social Sciences (10-A(E))
- Carragher, N., Adamson, G., Bunting, B., & McCann, S. (2010). Treatment-seeking behaviours for depression in the general population: Results from the National Epidemiologic Survey on alcohol and related conditions. *Journal of Affective Disorders*, 121(1-2), 59-67. doi:10.1016/j.jad.2009.05.009
- Carragher, N., Mills, K., Slade, T., Teesson, M., & Silove, D. (2010). Factor structure of posttraumatic stress disorder symptoms in the Australian general population. *Journal of Anxiety Disorders*, 24(5), 520-527. doi:10.1016/j.janxdis.2010.03.009

- Chien, W. T., Kam, C. W., & Lee, I. F. K. (2001). An assessment of the patients' needs in mental health education. *Journal of Advanced Nursing*, *34*(3), 304-311.
doi:10.1046/j.1365-2648.2001.01759.x
- Chisholm, D., Flisher, A. J., Lund, C., Patel, V., Saxena, S., Thornicroft, G., & Tomlinson, M. (2007). Scale up services for mental disorders: A call for action. *Lancet*, *370*(9594), 1241-1252. doi:10.1016/S01406736(07)61242-2
- Choi, N. G., Kunik, M. E., & Wilson, N. (2013). Mental health service use among depressed, low-income homebound middle-aged and older adults. *Journal of Aging and Health*, *25*(4), 638-655. doi:10.1177/0898264313484059
- Choi, S., Morrow-Howell, N., & Proctor, E. (2006). Configuration of services used by depressed older adults. *Aging and Mental Health*, *10*(3), 240-249.
doi:10.1080/13607860500310591
- Choi, S., Rozario, P., Morrow-Howell, N., & Proctor, E. (2009). Elders with first psychiatric hospitalization for depression. *International Journal of Geriatric Psychiatry*, *24*(1), 33-40. doi:doi.org/10.1002/gps.2064
- Christensen, H., Griffiths, K. M., & Jorm, A. F. (2004). Delivering interventions for depression by using the internet: Randomised controlled trial. *British Medical Journal*, *328*(7434), 265. doi:10.1136/bmj.37945.566632.EE
- Christensen, H., & Petrie, K. (2013). Information technology as the key to accelerating advances in mental health care. *Australian and New Zealand Journal of Psychiatry*, *47*(2), 114-116. doi:10.1177/0004867412471088
- Christensen, H., Proudfoot, J., Woodward, A., Hosie, A., Klein, B., Morgan, C., & Harman, G. (2014). *E-mental health services in Australia 2014: Current and future. Report to the National Mental Health Commission*. Retrieved from

<https://emhalliance.fedehealth.org.au/wp-content/uploads/sites/42/2014/10/e-Mental-Health-in-Australia-2014.pdf>

- Cipriani, A., Furukawa, T. A., Salanti, G., Geddes, J. R., Higgins, J. P., Churchill, R., . . . McGuire, H. (2009). Comparative efficacy and acceptability of 12 new-generation antidepressants: A multiple-treatments meta-analysis. *The Lancet*, *373*(9665), 746-758. doi:10.1016/S0140-6736(09)60046-5
- Clement, S., Schauman, O., Graham, T., Maggioni, F., Evans-Lacko, S., Bezborodovs, N., . . . Thornicroft, G. (2015). What is the impact of mental health-related stigma on help-seeking? A systematic review of quantitative and qualitative studies. *Psychological Medicine*, *45*(01), 11-27. doi:10.1017/S0033291714000129
- Cook, J. A., Burke-Miller, J. K., Grey, D. D., Cocohoba, J., Liu, C., Schwartz, R. M., . . . Cohen, M. H. (2014). Do HIV-positive women receive depression treatment that meets best practice guidelines? *AIDS and Behavior*, *18*(6), 1094-1102. doi:10.1007/s10461-013-0679-6
- Corbin, J., & Strauss, A. (2008). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (Vol. 3e). Thousand Oaks, CA: Sage.
- Cowling, D. (2018). *Social Media Statistics Australia – July 2018*. Retrieved from <https://www.socialmedianews.com.au/social-media-statistics-australia-july-2018/>
- Cuijpers, P. (1997). Bibliotherapy in unipolar depression: A meta-analysis. *Journal of Behavior Therapy and Experimental Psychiatry*, *28*(2), 139-147.
- Cunningham, C. E., Walker, J. R., Eastwood, J. D., Westra, H., Rimas, H., Chen, Y., . . . Group, M. M. R. (2014). Modeling mental health information preferences during the early adult years: A discrete choice conjoint experiment. *Journal of Health Communication*, *19*(4), 413-440. doi:10.1080/10810730.2013.811324

de Boer, A. G., Wijker, W., & de Haes, H. C. (1997). Predictors of health care utilization in the chronically ill: A review of the literature. *Health Policy*, 42(2), 101-115.

doi:10.1016/S0168-8510(97)00062-6

Department of Health and Ageing. Commonwealth of Australia. (2012). E-Mental Health Strategy for Australia Retrieved from

[https://www.health.gov.au/internet/main/publishing.nsf/content/7C7B0BFEB985D0EBCA257BF0001BB0A6/\\$File/emstrat.pdf](https://www.health.gov.au/internet/main/publishing.nsf/content/7C7B0BFEB985D0EBCA257BF0001BB0A6/$File/emstrat.pdf)

Dezetter, A., Duhoux, A., Menear, M., Roberge, P., Chartrand, E., & Fournier, L. (2015).

Reasons and determinants for perceiving unmet needs for mental health in primary care in Quebec. *The Canadian Journal of Psychiatry*, 60(6), 284-293.

doi:10.1177/070674371506000607

Donker, T., Griffiths, K. M., Cuijpers, P., & Christensen, H. (2009). Psychoeducation for

depression, anxiety and psychological distress: A meta-analysis. *BioMed Central Medicine*, 7, 79. doi:10.1186/1741-7015-7-79

Drapeau, A., Boyer, R., & Diallo, F. B. (2011). Discrepancies between survey and

administrative data on the use of mental health services in the general population: Findings from a study conducted in Quebec. *BioMed Central Public Health*, 11, 837.

doi:10.1186/1471-2458-11-837

Dunleavy, V. O., Crandall, L., & Metsch, L. R. (2005). A comparative study of sources of

health information and access to preventive care among low income chronic drug users. *Communication Research Reports*, 22(2), 117-128.

doi:10.1080/00036810500130554

Dunt, D., Robinson, J., Selvarajah, S., & Pirkis, J. (2010). *beyondblue: The National*

Depression Initiative 2005-2010. Retrieved from Victoria: www.beyondblue.org.au

- Dutta-Bergman, M. J. (2004). Primary sources of health information: Comparisons in the domain of health attitudes, health cognitions, and health behaviors. *Journal of Health Communication, 16*(3), 273 - 288. doi:10.1207/S15327027HC1603_1
- Dwyer, D. S., & Liu, H. (2013). The impact of consumer health information on the demand for health services. *The Quarterly Review of Economics and Finance, 53*(1), 1-11. doi:10.1016/j.qref.2012.11.002
- Eaton, W. W., Martins, S. S., Nestadt, G., Bienvenu, O. J., Clarke, D., & Alexandre, P. (2008). The burden of mental disorders. *Epidemiologic Reviews, 30*, 1-14. doi:10.1093/epirev/mxn011
- Ellis, K.-A. (2018). Identifying and addressing barriers to men seeking help for depression. *British Journal of Mental Health Nursing, 7*(3), 130-136. doi:10.12968/bjmh.2018.7.3.130
- Elwy, A. R., Yeh, J., Worcester, J., & Eisen, S. V. (2011). An illness perception model of primary care patients' help seeking for depression. *Qualitative Health Research, 21*(11), 1495-1507. doi:10.1177/1049732311413781
- Enticott, J. C., Lin, E., Shawyer, F., Russell, G., Inder, B., Patten, S., & Meadows, G. (2017). Prevalence of psychological distress: How do Australia and Canada compare? *Australian and New Zealand Journal of Psychiatry, 52*(3), 227-238. doi:10.1177/0004867417708612
- Eysenbach, G. (2001). What is e-healthcare? *Journal of Medical Internet Research, 3*(2). doi:10.2196/jmir.3.2.e20
- Farmer, C., Farrand, P., & O'Mahen, H. (2012). 'I am not a depressed person': How identity conflict affects help-seeking rates for major depressive disorder. *BioMed Central Psychiatry, 12*. doi:10.1186/1471-244x-12-164

- Ferreira-Lay, P., & Miller, S. (2008). The quality of internet information on depression for lay people. *Psychiatric Bulletin*, 32(5), 170-173. doi:10.1192/pb.bp.107.016188
- Fikretoglu, D., Liu, A., Zamorski, M. A., & Jetly, R. (2016). Perceived need for and perceived sufficiency of mental health care in the Canadian Armed Forces: Changes in the past decade and comparisons to the general population. *The Canadian Journal of Psychiatry*, 61(1_suppl), 36S-45S. doi:10.1177/0706743716628855
- First, M. B., Spitzer, R. L., Gibbon, M., & Williams, J. B. (2002). *Structured clinical interview for DSM-IV-TR axis I disorders, research version, patient edition: SCID-I/P*.
- Fishbein, M. (2007). *Prediction and change of health behavior: Applying the reasoned action approach*: Psychology Press.
- Fleury, M.-J., Grenier, G., Bamvita, J.-M., Perreault, M., & Caron, J. (2015). Variables associated with perceived unmet need for mental health care in a Canadian epidemiologic catchment area. *Psychiatric Services*, 67(1), 78-85. doi:10.1176/appi.ps.201400363
- Freimuth, V. S., & Quinn, S. C. (2004). The contributions of health communication to eliminating health disparities. *American Journal of Public Health*, 94(12), 2053-2055. doi:10.2105/AJPH.94.12.2053
- Frojd, S., Marttunen, M., Pelkonen, M., von der Pahlen, B., & Kaltiala-Heino, R. (2007). Adult and peer involvement in help-seeking for depression in adolescent population: A two-year follow-up in Finland. *Social Psychiatry and Psychiatric Epidemiology*, 42(12), 945-952. doi:10.1007/s00127-007-0254-4
- Gagné, S., Vasiliadis, H. M., & Prévile, M. (2014). Gender differences in general and specialty outpatient mental health service use for depression. *BioMed Central Psychiatry*, 14(1). doi:10.1186/1471-244x-14-135

- Gask, L., Rogers, A., Oliver, D., May, C., & Roland, M. (2003). Qualitative study of patients' perceptions of the quality of care for depression in general practice. *British Journal of General Practice*, 53(489), 278-283.
- Gaskill, D., & Cooney, H. (1991). Coping with schizophrenia: What does the spouse need to know? *The Australian Journal of Advanced Nursing*, 9(2), 10-15.
- Gaziano, C. (1997). Forecast 2000: Widening Knowledge Gaps. *Journalism and Mass Communication Quarterly*, 74(2), 237-264. doi:10.1177/107769909707400202
- Gaziano, C. (2017). Knowledge gap: History and development. *The International Encyclopedia of Media Effects*.
- Gelberg, L., Andersen, R. M., & Leake, B. D. (2000). The Behavioral Model for Vulnerable Populations: Application to medical care use and outcomes for homeless people. *Health Services Research*, 34(6), 1273-1302.
- Gensichen, J., Guethlin, C., Sarmand, N., Sivakumaran, D., Jäger, C., Mergenthal, K., . . . Petersen, J. J. (2012). Patients' perspectives on depression case management in general practice – A qualitative study. *Patient Education and Counseling*, 86(1), 114-119. doi:10.1016/j.pec.2011.02.020
- Giacco, D., Luciano, M., Del Vecchio, V., Sampogna, G., Slade, M., Clarke, E., . . . Bording, M. F. K. (2014). Desire for information of people with severe mental illness. *Social Psychiatry and Psychiatric Epidemiology*, 49(12), 1883-1891. doi:10.1007/s00127-014-0901-5
- Gillard, S., Gibson, S., Holley, J., & Lucock, M. (2015). Developing a change model for peer worker interventions in mental health services: A qualitative research study. *Epidemiology and Psychiatric Sciences*, 24(5), 435-445. doi:10.1017/S2045796014000407

- Glanz, K., Hersey, J., Cates, S., Muth, M., Creel, D., Nicholls, J., . . . Zariipheh, S. (2012). Effect of a nutrient rich foods consumer education program: Results from the Nutrition advice study. *Journal of the Academy of Nutrition and Dietetics, 112*(1), 56-63. doi:10.1016/j.jada.2011.08.031
- Goldman, L. S., Nielsen, N. H., & Champion, H. C. (1999). Awareness, diagnosis, and treatment of depression. *Journal of General Internal Medicine, 14*(9), 569-580. doi:10.1046/j.1525-1497.1999.03478.x
- Goldney, Dunn, K. I., Grande, E. D., Crabb, S., & Taylor, A. (2009). Tracking depression-related mental health literacy across South Australia: A decade of change. *Australian and New Zealand Journal of Psychiatry, 43*(5), 476-483. doi:10.1080/00048670902817729
- Goldney, Fisher, & Wilson. (2001). Mental Health Literacy: An impediment to the optimum treatment of major depression in the community. *Journal of Affective Disorders, 64*, 277-284. doi:10.1016/S0165-0327(00)00227-5
- Graham, A., Hasking, P., Clarke, D., & Meadows, G. (2015). How people with depression receive and perceive mental illness information: Findings from the Australian National Survey of Mental Health and Wellbeing. *Community Mental Health Journal, 51*(5). doi:10.1007/s10597-015-9900-6
- Griffiths, K. M., & Crisp, D. A. (2013). Unmet depression information needs in the community. *Journal of Affective Disorders, 146*(3), 348-354. doi:10.1016/j.jad.2012.09.018
- Griffiths, M. K., & Christensen, H. (2005). Website quality indicators for consumers. *Journal of Medical Internet Research, 7*(5), e55.
- Grinshpoon, A., & Ponizovsky, A. M. (2008). The relationships between need profiles, clinical symptoms, functioning and the well-being of inpatients with severe mental

- disorders. *Journal of Evaluation in Clinical Practice*, 14(2), 218-225.
doi:10.1111/j.1365-2753.2007.00836.x
- Grover, S., Avasthi, A., Shah, S., Lakdawala, B., Chakraborty, K., Nebhinani, N., . . .
Khairkar, P. (2015). Indian Psychiatric Society multicentric study on assessment of
health-care needs of patients with severe mental illnesses. *Indian Journal of
Psychiatry*, 57(1), 43. doi:10.4103/0019-5545.148520
- Gulliver, A., Griffiths, K. M., & Christensen, H. (2010). Perceived barriers and facilitators to
mental health help-seeking in young people: A systematic review. *BioMed Central
Psychiatry*, 10(113). doi:10.1186/1471-244X-10-113
- Gulliver, A., Griffiths, K. M., Christensen, H., & Brewer, J. L. (2012). A systematic review
of help-seeking interventions for depression, anxiety and general psychological
distress. *BioMed Central Psychiatry*, 12(81), 12-81.
- Gümüş, A. B. (2008). Health education needs of patients with schizophrenia and their
relatives. *Archives of Psychiatric Nursing*, 22(3), 156-165.
doi:10.1016/j.apnu.2007.06.015
- Hallett, C., Gupta, S., & Priebe, S. (2013). What do outpatients with schizophrenia and mood
disorders want to learn about their illness? *Psychiatric Services*, 64(8), 764-769.
doi:10.1176/appi.ps.201200382
- Harper, M., & Cole, P. (2012). Member checking: Can benefits be gained similar to group
therapy? *The Qualitative Report*, 17(2), 510-517.
- Harris, M. G., Hobbs, M. J., Burgess, P. M., Pirkis, J. E., Diminic, S., Siskind, D. J., . . .
Whiteford, H. A. (2015). Frequency and quality of mental health treatment for
affective and anxiety disorders among Australian adults. *The Medical Journal of
Australia*, 202(4), 185-189. doi:10.5694/mja14.00297

- Harrison, M., Reeves, D., Harkness, E., Valderas, J., Kennedy, A., Rogers, A., . . . Bower, P. (2012). A secondary analysis of the moderating effects of depression and multimorbidity on the effectiveness of a chronic disease self-management programme. *Patient Education and Counseling*, *87*(1), 67-73.
doi:10.1016/j.pec.2011.06.007
- Heckman, J. (1979). Sample selection bias as a specification error. *Econometrica*, *47*, 153-161. doi:10.2307/1912352
- Herrman, H., Patrick, D. L., Diehr, P., Martin, M. L., Fleck, M., Simon, G. E., & Buesching, D. P. (2002). Longitudinal investigation of depression outcomes in primary care in six countries: the LIDO study. Functional status, health service use and treatment of people with depressive symptoms. *Psychological Medicine*, *32*(5), 889-902.
doi:10.1017/S003329170200586X
- Hill, C. E., Knox, S., Thompson, B. J., Williams, E. N., Hess, S. A., & Ladany, N. (2005). Consensual qualitative research: An update. *Journal of Counseling Psychology*, *52*(2), 196. doi:10.1037/0022-0167.52.2.196
- Hill, S. A., & Laugharne, R. (2006). Decision making and information seeking preferences among psychiatric patients. *Journal of Mental Health*, *15*(1), 75-84.
doi:10.1080/09638230500512250
- Hodgson, O., King, R., & Leggatt, M. (2002). Carers of mentally ill people in Queensland: Their perceived relationships with professional mental health service providers: Report on a survey. *Australian e-Journal for the Advancement of Mental Health*, *1*(3), 220-234. doi:10.5172/jamh.1.3.220
- Holgado-Tello, F., Chacón-Moscoso, S., Barbero-García, I., & Vila-Abad, E. (2010). Polychoric versus Pearson correlations in exploratory and confirmatory factor

- analysis of ordinal variables. *Quality & Quantity*, 44(1), 153-166.
doi:10.1007/s11135-008-9190-y
- Hsieh, C. R., & Lin, S. J. (1997). Health information and the demand for preventive care among the elderly in Taiwan. *Journal of Human Resources*, 308-333.
doi:10.2307/146217
- Humfress, H., & Schmidt, U. (1999). Readability of user leaflets. *Psychiatric Bulletin*, 23(5), 272-276. doi:10.1192/pb.23.5.272
- Hwang, Y., & Jeong, S. (2009). Revisiting the knowledge gap hypothesis: A meta-analysis of thirty-five years of research. *Journalism and Mass Communication Quarterly*, 86(3), 513-532. doi:10.1177/107769900908600304
- Institute for digital research and education. (2013). How can I check for collinearity in survey regression? Retrieved from
http://www.ats.ucla.edu/stat/mult_pkg/faq/general/citingats.htm
- Jacobs, P., Yim, R., Ohinmaa, A., Eng, K., Dewa, C. S., Bland, R., . . . Slomp, M. (2008). Expenditures on mental health and addictions for Canadian Provinces in 2003/4. *Canadian Journal of Psychiatry*, 53(5), 306-313. doi:10.1177/070674370805300505
- Jacobson, N., Trojanowski, L., & Dewa, C. S. (2012). What do peer support workers do? A job description. *BioMed Central Health Services Research*, 12(1), 205.
doi:10.1186/1472-6963-12-205
- Janca, A., Robins, L. N., Bucholz, K. K., Early, T. S., & Shayka, J. J. (1992). Comparison of Composite International Diagnostic Interview and clinical DSM-III-R criteria checklist diagnoses. *Acta Psychiatrica Scandinavica*, 85(6), 440-443.
doi:10.1111/j.1600-0447.1992.tb03208.x
- Janz, N. K., & Becker, M. H. (1984). The health belief model: A decade later. *Health Education Quarterly*, 11(1), 1-47. doi:10.1177/109019818401100101

- Jenssen Anders, T. (2013). Widening or closing the knowledge gap? *Nordicom Review*, 33(1), 19. doi:10.2478/nor-2013-0002
- Jessen, R. J., & Jessen, R. (1978). *Statistical survey techniques*: Wiley New York.
- Jolles, M. P., Haynes-Maslow, L., Roberts, M. C., & Dusetzina, S. B. (2015). Mental health service use for adult patients with co-occurring depression and physical chronic health care needs, 2007-2010. *Medical Care*, 53(8), 708-712. doi:10.1097/MLR.0000000000000389
- Jorm, A. F. (2000). Mental health literacy. Public knowledge and beliefs about mental disorders. *British Journal of Psychiatry*, 177, 396-401. doi:10.1192/bjp.177.5.396
- Jorm, A. F. (2012). Mental health literacy: Empowering the community to take action for better mental health. *American Psychologist*, 67(3), 231-243. doi:10.1037/a0025957
- Jorm, A. F. (2015). How effective are "headspace" youth mental health services? *Australian and New Zealand Journal of Psychiatry*, 49(10), 861-862. doi:10.1177/0004867415608003
- Jorm, A. F., & Kitchener, B. A. (2011). Noting a landmark achievement: Mental health first aid training reaches 1% of Australian adults. *Australian and New Zealand Journal of Psychiatry*(45), 808-813. doi:10.3109/00048674.2011.594785
- Jorm, A. F., & Kitchener, B. A. (2018). The truth about Mental Health First Aid Training. *Psychiatric Services*, 69(4), 492-492. doi:10.1176/appi.ps.201800006
- Jorm, A. F., Patten, S. B., Brugha, T. S., & Mojtabai, R. (2017). Has increased provision of treatment reduced the prevalence of common mental disorders? Review of the evidence from four countries. *World Psychiatry*, 16(1), 90-99. doi:10.1002/wps.20388
- Joska, J., & Flisher, A. J. (2005). The assessment of need for mental health services. *Social Psychiatry and Psychiatric Epidemiology*, 40(7), 529-539. doi:10.1007/s00127-005-0920-3

- Jun, G. T., Ward, J., Morris, Z., & Clarkson, J. (2009). Health care process modelling: Which method when? *International Journal for Quality in Health Care*, *21*(3), 214-224. doi:10.1093/intqhc/mzp016
- Kelley, M. S., Su, D., & Britigan, D. H. (2016). Disparities in health information access: Results of a county-wide survey and implications for health communication. *Health Communication*, *31*(5), 575-582. doi:10.1080/10410236.2014.979976
- Kenkel, D. (1990). Consumer health information and the demand for medical care. *The Review of Economics and Statistics*, *72*(4), 587-595. doi:10.2307/2109598
- Kessler, R., Haro, J. M., Heeringa, S. G., Pennell, B.-E., & Üstun, T. B. (2006). The World Health Organization World Mental Health Survey Initiative. *Epidemiologia e Psichiatria Sociale*, *15*(3), 161-166. doi:10.1017/S1121189X00004395
- Kessler, R. C., Andrews, G., Colpe, L. J., Hiripi, E., Mroczek, D. K., Normand, S. L., . . . Zaslavsky, A. M. (2002). Short screening scales to monitor population prevalences and trends in non-specific psychological distress. *Psychological Medicine*, *32*(6), 959-976. doi:10.1017/S0033291702006074
- Kessler, R. C., Barker, P. R., Colpe, L. J., Epstein, J. F., Gfroerer, J. C., Hiripi, E., . . . Zaslavsky, A. M. (2003). Screening for serious mental illness in the general population. *Archives of General Psychiatry*, *60*(2), 184-189. doi:10.1001/archpsyc.60.2.184
- Kessler, R. C., Berglund, P., Demler, O., Jin, R., Merikangas, K. R., & Walters, E. E. (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry*, *62*(6), 593-602. doi:10.1001/archpsyc.62.6.617
- Kessler, R. C., & Üstun, T. B. (2004). The World Mental Health (WMH) Survey Initiative version of the World Health Organization (WHO) Composite International Diagnostic

- Interview (CIDI). *International Journal of Methods in Psychiatric Research*, 13(2), 93-121. doi:10.1002/mpr.168
- Keynejad, R. C., Dua, T., Barbui, C., & Thornicroft, G. (2017). WHO Mental Health Gap Action Programme (mhGAP) intervention guide: A systematic review of evidence from low and middle-income countries. *Evidence-based mental health*, 21, 30-34. doi:10.1136/eb-2017-102750
- Khan, A., Faucett, J., Lichtenberg, P., Kirsch, I., & Brown, W. A. (2012). A systematic review of comparative efficacy of treatments and controls for depression. *Public Library of Science One*, 7(7). doi:10.1371/journal.pone.0041778
- Khechine, H., Pascot, D., & Prémont, P. (2007). Relationship between the use of Internet information for health purposes and medical resources consumption for an English-speaking sample. *The Journal of the American Academy of Business*, 12, 31-37.
- Kitchen, K. A., McKibbin, C. L., Wykes, T. L., Lee, A. A., Catherine P Carrico, & McConnell, K. A. (2013). Depression treatment among rural older adults: Preferences and factors influencing future service use. *Clinical Gerontologist: The Journal of Aging and Mental Health*, 36(3), 241-259. doi:10.1080/07317115.2013.767872
- Kitchener, B. A., & Jorm, A. F. (2002). Mental health first aid training for the public: Evaluation of effects on knowledge attitudes and helping behaviour. *BioMed Central Psychiatry*, 2(10). doi:10.1186/1471-244X-2-10
- Kitto, S. C., Chesters, J., & Grbich, C. (2008). Quality in qualitative research. *The Medical Journal of Australia*, 188(4), 243-246.
- Kohn, R., Saxena, S., Levav, I., & Saraceno, B. (2004). The treatment gap in mental health care. *Bulletin of the World Health Organization*, 82(11), 858-866.

- Kolar, K., & Ahmad, F. (2017). Participant-generated visual timelines and street-involved youth who have experienced violent victimization. In *Handbook of Research Methods in Health Social Sciences* (pp. 1-19). Singapore: Springer
- Kravitz, R. L., Paterniti, D. A., Epstein, R. M., Rochlen, A. B., Bell, R. A., Cipri, C., . . . Duberstein, P. (2011). Relational barriers to depression help-seeking in primary care. *Patient Education and Counseling*, 82(2), 207-213. doi:10.1016/j.pec.2010.05.007
- Kroenke, K., Spitzer, R. L., & Williams, J. B. (2001). The PHQ-9: Validity of a brief depression severity measure. *Journal of General Internal Medicine*, 16(9), 606-613. doi:10.1046/j.1525-1497.2001.016009606.x
- Krogsbøll, L. T., Hróbjartsson, A., & Gøtzsche, P. C. (2009). Spontaneous improvement in randomised clinical trials: Meta-analysis of three-armed trials comparing no treatment, placebo and active intervention. *Biomed Central Medical Research Methodology*, 9(1), 1. doi:10.1186/1471-2288-9-1
- Kulhara, P., Avasthi, A., Grover, S., Sharan, P., Sharma, P., Malhotra, S., & Gill, S. (2010). Needs of Indian schizophrenia patients: An exploratory study from India. *Social Psychiatry and Psychiatric Epidemiology*, 45(8), 809-818. doi:10.1007/s00127-009-0126-1
- Landolt, K., Rössler, W., Burns, T., Ajdacic-Gross, V., Galderisi, S., Libiger, J., . . . Fleischhacker, W. (2012). Unmet needs in patients with first-episode schizophrenia: A longitudinal perspective. *Psychological Medicine*, 42(7), 1461-1473. doi:10.1017/S0033291711002406
- Larwin, K. (2008). Structural equation model examining students' prior mathematics/statistics experiences and self-perception regarding graduate-level statistics coursework: A methodological investigation. *Dissertation Abstracts International Section A: Humanities and Social Sciences*, 68(8-A), 3281.

- Lauber, C., Nordt, C., & Rossler, W. (2005). Recommendations of mental health professionals and the general population on how to treat mental disorders. *Social Psychiatry and Psychiatric Epidemiology*, 40(10), 835-843. doi:10.1007/s00127-005-0953-7
- Leach, L. S., Christensen, H., Griffiths, K. M., Jorm, A. F., & Mackinnon, A. J. (2007). Websites as a mode of delivering mental health information: Perceptions from the Australian public. *Social Psychiatry and Psychiatric Epidemiology*, 42(2), 167-172. doi:10.1007/s00127-006-0138-z
- Ledford, C. J. W. (2012). Changing channels: A theory-based guide to selecting traditional, new, and social media in strategic social marketing. *Social Marketing Quarterly*, 18(3), 175-186. doi:10.1177/1524500412460671
- Lee, C.-J. (2009). The role of Internet engagement in the health-knowledge gap. *Journal of Broadcasting and Electronic Media*, 53(3), 365-382. doi:10.1080/08838150903102758
- Lee, C. J. (2008). Does the internet displace health professionals? *Journal of Health Communication*, 13(5), 450-464. doi:10.1080/10810730802198839
- Lee, S. Y., Poon, W. Y., & Bentler, P. M. (1995). A two-stage estimation of structural equation models with continuous and polytomous variables. *British Journal of Mathematical and Statistical Psychology*, 48(Pt 2), 339-358. doi:10.1111/j.2044-8317.1995.tb01067.x
- Lester, H., Tritter, J. Q., & Sorohan, H. (2005). Patients' and health professionals' views on primary care for people with serious mental illness: Focus group study. *British Medical Journal*, 330(7500), 1122. doi:10.1136/bmj.38440.418426.8F

- Leung, P. P. Y. (2010). Autobiographical timeline: A narrative and life story approach in understanding meaning-making in cancer patients. *Illness, Crisis and Loss, 18*(2), 111-127. doi:10.2190/IL.18.2.c
- Liebherz, S., Tlach, L., Härter, M., & Dirmaier, J. (2015). Information and decision-making needs among people with affective disorders—results of an online survey. *Patient Preference and Adherence, 9*, 627. doi:10.2147/PPA.S78495
- Liebherz, S., Tlach, L., Härter, M., & Dirmaier, J. (2017). Information and decision-making needs of psychiatric patients: The perspective of relatives. *PeerJ, 5*, e3378. doi:10.7717/peerj.3378
- Lindsey, M. A. (2003). Social network influences on African-American adolescents' use of mental health services. *Dissertation Abstracts International Section A: Humanities and Social Sciences, 63*(10-A), 3730.
- Lindsey, M. A., Korr, W. S., Broitman, M., Bone, L., Green, A., & Leaf, P. J. (2006). Help-seeking behaviors and depression among African American adolescent boys. *Social Work, 51*(1), 49-58. doi:10.1093/sw/51.1.49
- Lustria, M. L., Noar, S. M., Cortese, J., Van Stee, S. K., Glueckauf, R. L., & Lee, J. (2013). A meta-analysis of web-delivered tailored health behavior change interventions. *Journal of Health Communication, 18*(9), 1039-1069. doi:10.1080/10810730.2013.768727
- Mackinnon, A., Griffiths, K. M., & Christensen, H. (2008). Comparative randomised trial of online cognitive-behavioural therapy and an information website for depression: 12-month outcomes. *British Journal of Psychiatry, 192*(2), 130-134. doi:10.1192/bjp.bp.106.032078
- Macpherson, R., Varah, M., Summerfield, L., Foy, C., & Slade, M. (2003). Staff and patient assessments of need in an epidemiologically representative sample of patients with

- psychosis. *Social Psychiatry and Psychiatric Epidemiology*, 38(11), 662-667.
doi:10.1007/s00127-003-0669-5
- Manierre, M. (2016). Examining the Relationship Between Flexible Resources and Health Information Channel Selection. *Health Communication*, 31(1), 22-34.
doi:10.1080/10410236.2014.930770
- McCracken, C., Dalgard, O. S., Ayuso-Mateos, J. L., Casey, P., Wilkinson, G., Lehtinen, V., & Dowrick, C. (2006). Health service use by adults with depression: Community survey in five European countries. Evidence from the ODIN study. *The British Journal of Psychiatry*, 189, 161-167. doi:10.1192/bjp.bp.105.015081
- McCusker, J., Karp, I., Cardin, S., Durand, P., & Morin, J. (2003). Determinants of emergency department visits by older adults: A systematic review. *Academic Emergency Medicine*, 10(12), 1362-1370. doi:10.1197/S1069-6563(03)00539-6
- McFarlane, W. R. (2016). Family interventions for schizophrenia and the psychoses: A review. *Family Process*, 55(3), 460-482. doi:10.1111/famp.12235
- McFarlane, W. R., Dixon, L., Lukens, E., & Lucksted, A. (2003). Family psychoeducation and schizophrenia: A review of the literature. *Journal of Marital and Family Therapy*, 29(2), 223-245. doi:10.1111/j.1752-0606.2003.tb01202.x
- McLuhan, M., & Lapham, L. H. (1994). *Understanding media: The extensions of man*: MIT press.
- Meadows, G., Burgess, P., Fossey, E., & Harvey, C. (2000). Perceived need for mental health care, findings from the Australian National Survey of Mental Health and Well-being. *Psychological Medicine*, 30(3), 645-656. doi:10.1017/S003329179900207X
- Meadows, G., Enticott, J., & Rosenberg, S. (2018). *Three charts on: why rates of mental illness aren't going down despite higher spending*. Retrieved from

<https://theconversation.com/three-charts-on-why-rates-of-mental-illness-arent-going-down-despite-higher-spending-97534>

- Meadows, G., Harvey, C., Fossey, E., & Burgess, P. (2000). Assessing perceived need for mental health care in a community survey: development of the Perceived Need for Care Questionnaire (PNCQ). *Social Psychiatry and Psychiatric Epidemiology*, 35(9), 427-435. doi:10.1007/s001270050260
- Meadows, G. N., & Bobevski, I. (2011). Changes in met perceived need for mental healthcare in Australia from 1997 to 2007. *British Journal of Psychiatry*, 199(6), 479-484. doi:10.1192/bjp.bp.110.085910
- Meadows, G. N., & Burgess, P. M. (2009). Perceived need for mental health care: Findings from the 2007 Australian Survey of Mental Health and Wellbeing. *Australian and New Zealand Journal of Psychiatry*, 43(7), 624-634. doi:10.1080/00048670902970866
- Meyer, O. L., Castro-Schilo, L., & Aguilar-Gaxiola, S. (2014). Determinants of mental health and self-rated health: A model of socioeconomic status, neighborhood safety, and physical activity. *American Journal of Public Health*, 104(9), 1734-1741. doi:10.2105/AJPH.2014.302003
- Mindmatters. (2012, September 24). Retrieved from <http://www.mindmatters.edu.au/>
- Möller-Leimkühler, A. M. (2002). Barriers to help-seeking by men: A review of sociocultural and clinical literature with particular reference to depression. *Journal of Affective Disorders*, 71(1), 1-9. doi:10.1016/S0165-0327(01)00379-2
- Mueser, K. T., Bellack, A. S., Wade, J. H., Sayers, S. L., & Rosenthal, C. K. (1992). An assessment of the educational needs of chronic psychiatric patients and their relatives. *The British Journal of Psychiatry*, 160(5), 674-680. doi:10.1192/bjp.160.5.674

- Murray, C., & Lopez, A. (1996). *The Global Burden of Disease*. Washington: World Health Organisation.
- Murray, C. J., & Lopez, A. D. (1997). Global mortality, disability, and the contribution of risk factors: Global burden of disease study. *The Lancet*, 349(9063), 1436-1442. doi:10.1016/S0140-6736(96)07495-8
- National Centre for Clinical Excellence. (2004). *Depression: Management of depression in primary and secondary care*. Retrieved from <https://www.nice.org.uk/guidance/cg23>
- National Collaborating Centre for Mental Health. (2010). *Depression: The treatment and management of depression in adults (updated editions)* Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/22132433>
- National Collaborating Centre for Mental Health. (2014). *Psychosis and Schizophrenia in Adults: Treatment and Management*. Retrieved from <http://www.nice.org.uk/guidance/cg178/>
- National Health Medical Research Council. (2007). *National statement on ethical conduct in human research*. Retrieved from <https://www.nhmrc.gov.au/guidelines-publications/e72>
- Neergaard, M. A., Olesen, F., Andersen, R. S., & Sondergaard, J. (2009). Qualitative description—the poor cousin of health research? *BioMedical Central Medical Research Methodology*, 9(1), 52. doi:10.1186/1471-2288-9-52
- Nicholson, W., Gardner, B., Grason, H. A., & Powe, N. R. (2005). The association between women's health information use and health care visits. *Women's Health Issues*, 15(6), 240-248. doi:10.1016/j.whi.2005.05.004
- Ochoa, S., Haro, J., Usall, J., Autonell, J., Vicens, E., & Asensio, F. (2005). Needs and its relation to symptom dimensions in a sample of outpatients with schizophrenia. *Schizophrenia Research*, 75(1), 129-134. doi:10.1016/j.schres.2004.06.002

- Oh, E., Jorm, A. F., & Wright, A. (2009). Perceived helpfulness of websites for mental health information: A national survey of young Australians. *Social Psychiatry and Psychiatric Epidemiology*, 44(4), 293-299. doi:10.1007/s00127-008-0443-9
- Parente, S. T., Salkever, D. S., & DaVanzo, J. (2005). The role of consumer knowledge of insurance benefits in the demand for preventive health care among the elderly. *Health Economics*, 14(1), 25-38. doi:10.1002/hec.907
- Percival, J., Donovan, J., Kessler, D., & Turner, K. (2017). 'She believed in me'. What patients with depression value in their relationship with practitioners. A secondary analysis of multiple qualitative data sets. *Health Expectations*, 20(1), 85-97. doi:10.1111/hex.12436
- Perkins, A., Ridler, J., Browes, D., Peryer, G., Notley, C., & Hackmann, C. (2018). Experiencing mental health diagnosis: A systematic review of service user, clinician, and carer perspectives across clinical settings. *The Lancet Psychiatry*. doi:10.1016/S2215-0366(18)30095-6
- Pescosolido, B. A., & Kronenfeld, J. J. (1995). Health, illness, and healing in an uncertain era: Challenges from and for medical sociology. *Journal of Health and Social Behavior*, 5-33. doi:10.2307/2626955
- Phelan, M., Slade, M., Thornicroft, G., Dunn, G., Holloway, F., Wykes, T., . . . Hayward, P. (1995). The Camberwell Assessment of Need: The validity and reliability of an instrument to assess the needs of people with severe mental illness. *The British Journal of Psychiatry*, 167(5), 589-595. doi:10.1192/bjp.167.5.589
- Pirkis, J., Ftanou, M., Williamson, M., Machlin, A., Spittal, M. J., Bassilios, B., . . . Harris, M. (2011). Australia's Better Access initiative: An evaluation. *Australian and New Zealand Journal of Psychiatry*, 45(9), 726-739.

- Pollack, L. E. (1995). Informational needs of patients hospitalized for bipolar disorder. *Psychiatric Services*.
- Pothier, L., Day, R., Harris, C., & Pothier, D. D. (2008). Readability statistics of patient information leaflets in a Speech and Language Therapy Department. *International Journal of Language and Communication Disorders*, 43(6), 712-722.
doi:10.1080/13682820701726647
- Powell, J., & Clarke, A. (2006). Information in mental health: Qualitative study of mental health service users. *Health Expectations*, 9(4), 359-365. doi:10.1111/j.1369-7625.2006.00403.x
- Prins, M., Meadows, G., Bobevski, I., Graham, A., Verhaak, P., van der Meer, K., . . . Bensing, J. (2011). Perceived need for mental health care and barriers to care in the Netherlands and Australia. *Social Psychiatry and Psychiatric Epidemiology*, 46(10), 1033-1044. doi:10.1007/s00127-010-0266-3
- Prins, M. A., Verhaak, P. F., Bensing, J. M., & van der Meer, K. (2008). Health beliefs and perceived need for mental health care of anxiety and depression--the patients' perspective explored. *Clinical Psychology Review*, 28(6), 1038-1058.
doi:10.1016/j.cpr.2008.02.009
- Prins, M. A., Verhaak, P. F., van der Meer, K., Penninx, B. W., & Jozien, M. B. (2009). Primary care patients with anxiety and depression: Need for care from the patient's perspective. *Journal of Affective Disorders*, 119(1), 163-171.
doi:10.1016/j.jad.2009.03.019
- Prochaska, J. O., & Velicer, W. F. (1997). The transtheoretical model of health behavior change. *American Journal of Health Promotion*, 12(1), 38-48. doi:10.4278/0890-1171-12.1.38

- Raftery, A. E. (1995). Bayesian model selection in social research. *Sociological Methodology*, 25, 111-163. doi:10.2307/271063
- Rains, S. A., & Ruppel, E. K. (2016). Channel complementarity theory and the health information-seeking process further investigating the implications of source characteristic complementarity. *Communication Research*, 43(2), 232-252. doi:10.1177/0093650213510939
- Ramsey, I., Corsini, N., Peters, M. D., & Eckert, M. (2017). A rapid review of consumer health information needs and preferences. *Patient Education and Counseling*, 100(9), 1634-1642. doi:10.1016/j.pec.2017.04.005
- Reavley, N. J., Cvetkovski, S., & Jorm, A. F. (2011). Sources of information about mental health and links to help seeking: Findings from the 2007 Australian National Survey of Mental Health and Wellbeing. *Social Psychiatry and Psychiatric Epidemiology*, 46(12), 1267-1274. doi:10.1007/s00127-010-0301-4
- Reavley, N. J., & Jorm, A. F. (2011). The quality of mental disorder information websites: A review. *Patient Education and Counseling*, 85(2), e16-25. doi:10.1016/j.pec.2010.10.015
- Reavley, N. J., & Jorm, A. F. (2012). Public recognition of mental disorders and beliefs about treatment: Changes in Australia over 16 years. *The British Journal of Psychiatry*, 200(5), 419-425. doi:10.1192/bjp.bp.111.104208
- Reavley, N. J., Mackinnon, A. J., Morgan, A. J., Alvarez-Jimenez, M., Hetrick, S. E., Killackey, E., . . . Jorm, A. F. (2012). Quality of information sources about mental disorders: A comparison of Wikipedia with centrally controlled web and printed sources. *Psychological Medicine*, 42(8), 1753-1762. doi:10.1017/s003329171100287x
- Richards, L., & Morse, J. M. (2012). *Readme first for a user's guide to qualitative methods*: Sage.

- Richardson, K., & Barkham, M. (2017). Recovery from depression: A systematic review of perceptions and associated factors. *Journal of Mental Health*, 1-13.
doi:10.1080/09638237.2017.1370629
- Ricketts, T. (1996). General satisfaction and satisfaction with nursing communication on an adult psychiatric ward. *Journal of Advanced Nursing*, 24(3), 479-487.
doi:10.1046/j.1365-2648.1996.02157.x
- Rickwood, D. J. (2011). Promoting youth mental health: Priorities for policy from an Australian perspective. *Early Intervention in Psychiatry*, 5 Suppl 1, 40-45.
doi:10.1111/j.1751-7893.2010.00239.x
- Rickwood, D. J., Deane, F. P., & Wilson, C. J. (2007). When and how do young people seek professional help for mental health problems? *Medical Journal of Australia*, 187(7 Suppl), S35-39.
- Rogers, S. (2018). Increase in online find a psychologist service searches. *InPsych: The Bulletin of the Australian Psychological Society*, 40(1), 58.
- Rosenberg, L. (2011). Mental health first aid: A "radical efficiency" in health promotion. *The Journal of Behavioral Health Services & Research*, 38(2), 143-145.
doi:10.1007/s11414-011-9236-0
- Rosenman, S. (2012). Cause for caution: Culture, sensitivity and the World Mental Health Survey Initiative. *Australas Psychiatry*, 20(1), 14-19.
doi:10.1177/1039856211430149
- Rothì, D. M., & Leavey, G. (2006). Mental health help-seeking and young people: A review. *Pastoral Care in Education*, 24(3), 4-13. doi:10.1111/j.1468-0122.2006.00373.x
- RU OK? (2018, 11 May). Retrieved from <https://www.ruok.org.au/>

- Ruppel, E. K., & Rains, S. A. (2012). Information sources and the health information-seeking process: An application and extension of channel complementarity theory. *Communication Monographs*, 79(3), 385-405. doi:10.1080/03637751.2012.697627
- Sabanciogullari, S., & Tel, H. (2015). Information needs, care difficulties, and coping strategies in families of people with mental illness. *Neurosciences*, 20(2), 145. doi:10.17712/nsj.2015.2.20140713
- Sandelowski, M. (2000). Whatever happened to qualitative description? *Research in Nursing and Health*, 23(4), 334-340. doi:10.1002/1098-240X(200008)23:4<334::AID-NUR9>3.0.CO;2-G
- Sandelowski, M. (2010). What's in a name? Qualitative description revisited. *Research in Nursing and Health*, 33(1), 77-84.
- Sareen, J., Cox, B. J., Afifi, T. O., Clara, I., & Yu, B. N. (2005). Perceived need for mental health treatment in a nationally representative Canadian sample. *Canadian Journal of Psychiatry*, 50(10), 643-651. doi:10.1177/070674370505001011
- Satorra, A., & Bentler, P. (2001). A scaled difference chi-square test statistic for moment structure analysis. *Psychometrika*, 66(4), 507-514. doi:10.1007/bf02296192
- Saver, B. G., Van-Nguyen, V., Keppel, G., & Doescher, M. P. (2007). A qualitative study of depression in primary care: Missed opportunities for diagnosis and education. *The Journal of the American Board of Family Medicine*, 20(1), 28-35. doi:10.3122/jabfm.2007.01.060026
- Sawamura, K., Ito, H., Koyama, A., Tajima, M., & Higuchi, T. (2010). The effect of an educational leaflet on depressive patients' attitudes toward treatment. *Psychiatry Research*, 177(1-2), 184-187. doi:10.1016/j.psychres.2010.02.002

- Scharer, K. (2002). What parents of mentally ill children need and want from mental health professionals. *Issues in Mental Health Nursing*, 23(6), 617-640.
doi:10.1080/01612840290052758
- Schmid, C. (2013). *Identification of supplier-induced demand: What kind of consumer information matters?* Retrieved from Department of Economics, Universität Bern:
<http://hdl.handle.net/10419/76739>
- Schmid, C. (2014). Consumer health information and the demand for physician visits *Health Economics*. doi:10.1002/hec.3117
- Schoenberg, Kruger, Bardach, & Howell. (2013). Appalachian women's perspectives on breast and cervical cancer screening. *Rural and Remote Health*, 13(2452).
- Schwarz, G. (1978). Estimating the dimension of a model. *Annals of statistics*, 6, 461-464.
doi:10.1214/aos/1176344136
- Scott, J. (2006). Depression should be managed like a chronic disease: Clinicians need to move beyond ad hoc approaches to isolated acute episodes. *British Medical Journal*, 332(7548), 985. doi:10.1136/bmj.332.7548.985
- Seekles, W., Cuijpers, P., Van de Ven, P., Penninx, B., Verhaak, P., Beekman, A., & Van Straten, A. (2012). Personality and perceived need for mental health care among primary care patients. *Journal of Affective Disorders*, 136(3), 666-674.
doi:10.1016/j.jad.2011.10.009
- Shim, H., Ailshire, J., Zelinski, E., & Crimmins, E. (2018). The health and retirement study: Analysis of associations between use of the Internet for health information and use of health services at multiple time points. *Journal of Medical Internet Research*, 20(5).
doi:10.2196/jmir.8203
- Shin, J. K. (2002). Help-seeking behaviors by Korean immigrants for depression. *Issues in Mental Health Nursing*, 23(5), 461-476. doi:10.1080/0161284029005264 0

- Slade, M. (2015, 1 July). Camberwell Assessment of Need (CAN). Retrieved from <https://www.researchintorecovery.com/can>
- Slade, T., Johnston, A., Oakley Browne, M., Andrews, G., & Whiteford, H. (2009). 2007 National Survey of Mental Health and Wellbeing: Methods and key findings. *Australian and New Zealand Journal of Psychiatry, 43*(7), 594-605.
doi:10.1080/00048670902970882
- Smith, C. L., & Shochet, I. M. (2011). The impact of mental health literacy on help-seeking intentions: Results of a pilot study with first year psychology students. *International Journal of Mental Health Promotion, 13*(2), 14-20.
doi:10.1080/14623730.2011.9715652
- Solorio, M. R., Milburn, N. G., Andersen, R. M., Trifskin, S., & Rodriguez, M. A. (2006). Emotional distress and mental health service use among urban homeless adolescents. *The Journal of Behavioral Health Services and Research, 33*(4), 381-393.
doi:10.1007/s11414-006-9037-z
- Sørensen, C. W., Bæk, O., Kallestrup, P., & Carlsson, J. (2017). Integrating mental health in primary healthcare in low-income countries: Changing the future for people with mental disorders. *Nordic Journal of Psychiatry, 71*(2), 151-157.
doi:10.1080/08039488.2016.1245784
- StataCorp. (2005). *STATA survey data, reference manual, release 9*: A Stata Press publication
- StataCorp. (2009). *STATA Base reference manual: Release 11*. Texas A Stata Press publication
- Steel, Z., Marnane, C., Iranpour, C., Chey, T., Jackson, J. W., Patel, V., & Silove, D. (2014). The global prevalence of common mental disorders: A systematic review and meta-analysis 1980–2013. *International Journal of Epidemiology*. doi: 10.1093/ije/dyu038

- Stein, J., Pabst, A., Weyerer, S., Werle, J., Maier, W., Heilmann, K., . . . Wiese, B. (2016). The assessment of met and unmet care needs in the oldest old with and without depression using the Camberwell Assessment of Need for the Elderly (CANE): Results of the AgeMooDe study. *Journal of Affective Disorders, 193*, 309-317. doi:10.1016/j.jad.2015.12.044
- Stevens, A., & Raftery, J. (1994). *Health care needs assessment—the epidemiologically based needs assessment reviews*. Oxford: Radcliffe Medical Press.
- Stiffman, A. R., Striley, C., Horvath, V. E., Hadley-Ives, E., Polgar, M., Elze, D., & Pescarino, R. (2001). Organizational context and provider perception as determinants of mental health service use. *The Journal of Behavioral Health Services and Research, 28*(2), 188-204. doi:10.1007/BF02287461
- Sunderland, A., & Findlay, L. C. (2013). *Perceived need for mental health care in Canada: Results from the 2012 Canadian community health survey-mental health*. Ottawa: Statistics Canada.
- Suziedelyte, A. (2012). How does searching for health information on the Internet affect individuals' demand for health care services? *Social Science and Medicine, 75*(10), 1828-1835. doi:10.1016/j.socscimed.2012.07.022
- Tay, J. L., Tay, Y. F., & Klainin-Yobas, P. (2018). Effectiveness of information and communication technologies interventions to increase mental health literacy: A systematic review. *Early Intervention in Psychiatry*. doi:10.1111/eip.12695
- The World Mental Health Survey Initiative. (2018, 10 May). WMH Participating Collaborators. Retrieved from <https://www.hcp.med.harvard.edu/wmh/>
- Thompson, A., Issakidis, C., & Hunt, C. (2008). Delay to seek treatment for anxiety and mood disorders in an Australian clinical sample. *Behaviour Change, 25*(2), 71-84. doi:10.1375/bech.25.2.71

- Thompson, A. E., Goldszmidt, M. A., Schwartz, A. J., & Bashook, P. G. (2010). A randomized trial of pictorial versus prose-based medication information pamphlets. *Patient Education and Counseling*, 78, 389-393. doi:10.1016/j.pec.2010.01.010
- Tlach, L., Wüsten, C., Daubmann, A., Liebherz, S., Härter, M., & Dirmaier, J. (2015). Information and decision-making needs among people with mental disorders: A systematic review of the literature. *Health Expectations*, 18(6), 1856-1872. doi:10.1111/hex.12251
- Tong, A., Sainsbury, P., & Craig, J. (2007). Consolidated criteria for reporting qualitative research (COREQ): A 32-item checklist for interviews and focus groups. *International Journal of Quality in Health Care*, 19(6), 349-357. doi:10.1093/intqhc/mzm042
- Uebelacker, L. A., Smith, M., Lewis, A. W., Sasaki, R., & Miller, I. W. (2009). Treatment of depression in a low-income primary care setting with co-located mental health care. *Families, Systems, and Health*, 27(2), 161. doi:10.1037/a0015847
- Van de Ven, W. P. M. M., & Van Praag, B. M. S. (1981). The demand for deductibles in private health insurance. *Journal of Econometrics*, 17(2), 229-252. doi:10.1016/0304-4076(81)90028-2
- Van der Voort, T., Goossens, P., & Van Der Bijl, J. (2007). Burden, coping and needs for support of caregivers for patients with a bipolar disorder: A systematic review. *Journal of Psychiatric and Mental Health Nursing*, 14(7), 679-687. doi:10.1111/j.1365-2850.2007.01158.x
- Vigo, D., Thornicroft, G., & Atun, R. (2016). Estimating the true global burden of mental illness. *The Lancet Psychiatry*, 3(2), 171-178. doi:10.1016/S2215-0366(15)00505-2
- Vittengl, J. R., Clark, L. A., Dunn, T. W., & Jarrett, R. B. (2007). Reducing relapse and recurrence in unipolar depression: A comparative meta-analysis of cognitive-

- behavioral therapy's effects. *Journal of Consulting and Clinical Psychology*, 75(3), 475. doi:10.1037/0022-006X.75.3.475
- Von Lengerke, T., Gohl, D., & Babitsch, B. (2014). Re-revisiting the Behavioral Model of Health Care Utilization by Andersen: A review on theoretical advances and perspectives. In *Health Care Utilization in Germany* (pp. 11-28): Springer.
- Wagner, T. H., & Greenlick, M. R. (2001). When parents are given greater access to health information, does it affect pediatric utilization? *Medical Care*, 39(8), 848-855. doi:10.1097/00005650-200108000-00010
- Wagner, T. H., Hibbard, J. H., Greenlick, M. R., & Kunkel, L. (2001). Does providing consumer health information affect self-reported medical utilization? Evidence from the Healthwise Communities Project. *Medical Care*, 39(8), 836-847. doi:10.1097/00005650-200108000-00009
- Wagner, T. H., Hu, T. W., & Hibbard, J. H. (2001). The demand for consumer health information. *Journal of Health Economics*, 20(6), 1059-1075. doi:10.1016/S0167-6296(01)00107-2
- Wagner, T. H., & Jimison, H. B. (2003). Computerized health information and the demand for medical care. *Value in Health*, 6(1), 29-39. doi:10.1046/j.1524-4733.2003.00155.x
- Wagner, V., Bertrand, K., Flores-Aranda, J., Acier, D., Brunelle, N., Landry, M., & Brochu, S. (2017). Initiation of addiction treatment and access to services: Young adults' accounts of their help-seeking experiences. *Qualitative Health Research*, 27(11), 1614-1627. doi:10.1177/1049732316679372
- Wang, W., Aguilar-Gaxiola, S., Alonso, J., Angermeyer, M., Borges, G., Bromet, E., . . . de Girolamo, G. (2008). Delay and failure in treatment seeking after first onset of mental disorders in the World Mental Health Survey Initiative. *World Psychiatry*, 6, 177-185.

- Weich, S., & Araya, R. (2004). International and regional variation in the prevalence of common mental disorders: Do we need more surveys? *The British Journal of Psychiatry*, *184*, 289-290. doi:10.1192/bjp.184.4.289
- Wells, K. B., Sherbourne, C., Schoenbaum, M., Duan, N., Meredith, L., Unutzer, J., . . . Rubenstein, L. V. (2000). Impact of disseminating quality improvement programs for depression in managed primary care: A randomized controlled trial. *Journal of the American Medical Association*, *283*(2), 212-220. doi:10.1001/jama.283.2.212
- Whiteford, H. (2017). Mental health services research in Australia. *Australian and New Zealand Journal of Psychiatry*, *51*(11), 1075-1076. doi:10.1177/0004867417738413
- Wilkin, H. A., Valente, T. W., Murphy, S., Cody, M. J., Huang, G., & Beck, V. (2007). Does entertainment-education work with Latinos in the United States? Identification and the effects of a telenovela breast cancer storyline. *Journal of Health Communication*, *12*(5), 455-469. doi:10.1080/10810730701438690
- Williams, B., & Brown, T. (2012). Exploratory factor analysis: A five-step guide for novices. *Australasian Journal of Paramedicine*, *8*(3), 1-13.
- Wittchen, H.-U. (1994). Reliability and validity studies of the WHO-Composite International Diagnostic Interview (CIDI): A critical review. *Journal of Psychiatric Research*, *28*(1), 57-84. doi:10.1016/0022-3956(94)90036-1
- Wittchen, H. U., Robins, L. N., Cottler, L. B., Sartorius, N., Burke, J. D., & Regier, D. (1991). Cross-cultural feasibility, reliability and sources of variance of the Composite International Diagnostic Interview (CIDI). The multicentre WHO/ADAMHA field trials. *The British Journal of Psychiatry*, *159*, 645-653, 658. doi:10.1192/bjp.159.5.645

- Woodward, S., Berry, K., & Bucci, S. (2017). A systematic review of factors associated with service user satisfaction with psychiatric inpatient services. *Journal of Psychiatric Research*, 92, 81-93. doi:10.1016/j.jpsychires.2017.03.020
- World Health Organization. (1992). *ICD-10 Classifications of mental and behavioural disorder: Clinical descriptions and diagnostic guidelines*. Geneva: World Health Organisation.
- World Health Organization. (2001). *Mental health: A call for action by World Health Ministers*. Retrieved from <http://www.mhinnovation.net/resources/mental-health-call-action-world-health-ministers>
- World Health Organization. (2003). *Investing in mental health*. Retrieved from Switzerland: www.who.int
- World Health Organization. (2005). *Promoting mental health: Concepts, emerging evidence, practice*. Retrieved from Geneva: http://www.who.int/mental_health/evidence/en/promoting_mhh.pdf
- World Health Organization. (2008). *mhGAP: Mental health gap action programme: Scaling up care for mental, neurological and substance use disorders*. Retrieved from <http://apps.who.int/iris/handle/10665/43809>
- World Health Organization. (2011). *Mental health atlas 2011*. Retrieved from Switzerland: www.who.int
- World Health Organization. (2012). *Depression: Fact sheet N°36*. Retrieved from <http://www.who.int/mediacentre/factsheets/fs369/en/>
- Wright, A., Harris, M. G., Wiggers, J. H., Jorm, A. F., Cotton, S. M., Harrigan, S. M., . . . McGorry, P. D. (2005). Recognition of depression and psychosis by young Australians and their beliefs about treatment. *Medical Journal of Australia*, 183(1), 18-23.

Xu, Z., Huang, F., Kösters, M., Staiger, T., Becker, T., Thornicroft, G., & Rüsch, N. (2018).

Effectiveness of interventions to promote help-seeking for mental health problems:

Systematic review and meta-analysis. *Psychological Medicine*, 1-10.

doi:10.1017/S0033291718001265

Zhao, D., Lustria, M. L. A., & Hendrickse, J. (2017). Systematic review of the information

and communication technology features of web- and mobile-based psychoeducational

interventions for depression. *Patient Education and Counseling*, 100(6), 1049-1072.

doi:10.1016/j.pec.2017.01.004

Appendix A: Questions about the receipt of mental illness information from the 2007 National Survey of Mental Health and Wellbeing

1. In the past 12 months have you received information about mental illness, its treatment and available services from any of the sources on this list? IF YES: Which ones? CIRCLE ALL THAT APPLY.

INTERNET

FICTION BOOK(STORY)

NON-FICTION BOOK (FACTUAL ACCOUNT)

NEWSPAPER OR MAGAZINE

TELEVISION

RADIO

PAMPHLET/LEAFLET/BROCHURE

OTHER (PLEASE DESCRIBE)

NONE OF THE ABOVE

2. Which of these gave you information that was helpful to you for problems with your mental health? CIRCLE ALL THAT APPLY.

INTERNET

FICTION BOOK (STORY)

NON-FICTION BOOK (FACTUAL ACCOUNT)

NEWSPAPER OR MAGAZINE

TELEVISION

RADIO

PAMPHLET/LEAFLET/BROCHURE

OTHER. EXAMPLE:

NONE OF THE ABOVE

Appendix B: Supplementary material from Chapter 7, Paper 3

Table Appendix B 1

Frequency distributions of the variables used in Chapter 7, paper 3

Measures	Type of measure	Description
<i>Predisposing Characteristics</i>		
Age	Continuous	The higher the score the older the person at the time of the survey N=451, range 16-85, (M = 42.24, SD = 15.44)
Sex	Dichotomous	1. Male (N=151) 2. Female (N=300)
Marital status	Dichotomous	1. Not married (N=332) 2. Married (N=119)
Education	Dichotomous	1. No university level qualification (N=269) 2. University level qualification (N=182)
Employment status	Categorical	1. Not in the labour force (N=161) 2. Unemployed (N=25) 3. Employed (N=265)
Country of birth	Categorical	1. Non-English-speaking country (n=45) 2. English speaking country other than Australia (N=58) 3. Australia (N=348)
Number of persons in household	Categorical	1. One person (N=162) 2. Two people (N=146) 3. Three or more people (N=143)
<i>Enabling resources (the higher the score the more enabled the person)</i>		
Housing status	Categorical	1. Renter/other (N=208) 2. Owner with a mortgage (N=146) 3. Owner without a mortgage (N=97)
Financial problems	Dichotomous	1. Financial problems (N=169) 2. No financial problems (N=282)
Frequency of contact with family members	Categorical	1. Monthly or less (N=72) 2. Weekly (N=146) 3. Daily (N=233)
Frequency of contact with friends	Categorical	1. Monthly or less (N=111) 2. Weekly (N=168) 3. Daily (N=172)
<i>Needs (the higher the score the greater the need)</i>		
Psychological distress (K-10)	Continuous	The higher the score the higher the level of distress, N=451, range 10-48 (M = 23.5, SD=8.13)
General state (self-assessed mental health)	Categorical	1. Excellent/very good (N=92) 2. Good (N=132) 3. Fair (N=162) 4. Poor (N=65)

General state (general health compared to last year)	Categorical	<ol style="list-style-type: none"> 1. A lot better (N=105) 2. A little/somewhat better (N=77) 3. The same (N=139) 4. A little/somewhat worse (N=73) 5. A lot worse (N=57)
Severity (types of depression i.e., ICD-10 category)	Categorical	<ol style="list-style-type: none"> 1. Minor depression (N=22) 2. Moderate depression (N=126) 3. Major depression (N=303)
Comorbidity of ICD-10 disorder classes in the past 12 months	Categorical	<ol style="list-style-type: none"> 1. Affective disorder only (N=166) 2. Affective and anxiety disorders (N=226) 3. Combination including affective & substance use (N=59)
Number of mental health conditions	Continuous	The higher the score the more mental health disorders an individual had in the 12 months prior to the survey, N=451, range 1-11, ($M = 2.97$, $SD = 1.93$)
<i>Mental health service use (the higher the score the greater the service use)</i>		
Number of mental health consultations with any professional	Categorical	<ol style="list-style-type: none"> 1. None (N=163) 2. 1-9 consultations (N=163) 3. 10 or more consultations (N=125)
Number of medications taken for mental health in the past two weeks	Categorical	<ol style="list-style-type: none"> 1. None (N=248) 2. 1 medication (N=119) 3. 2 medications (N=59) 4. 3 or more medications (N=25)
Type of service accessed for mental health	Categorical	<ol style="list-style-type: none"> 1. None (N=162) 2. Consultation only (N=262) 3. Hospitalisation & consultation (N=27)
<i>Information variables (the higher the score the more likely to receive mental illness information)</i>		
Received mental illness information	Dichotomous	<ol style="list-style-type: none"> 1. Non-information receivers (N=190) 2. Information receivers (N=261)
Received helpful mental illness information	Dichotomous	<ol style="list-style-type: none"> 1. Did not receive helpful information (N=254) 2. Received helpful information (N=197)

Abbreviations: N=number; M =mean, SD =standard deviation; ICD-10= International classification of diseases

Table Appendix B 2

Unique parameters and co-variances of the models depicted in Figure 7.2-part B and C

	The information receivers' model	The information non-receivers' model
Unique Parameters	<p>Co-morbidity of mental health disorders → mental health service use</p> <p>Type of service accessed for mental health → mental health need</p> <p>Financial status → mental health service use</p> <p>No. of mental health consultations → mental health service use</p> <p>Contact with family members → social self</p>	<p>Employment status → mental health service use</p> <p>Contact with family members → mental health need</p>
Unique Co-variances	<p>Financial status & employment status</p>	<p>Employment status & age</p> <p>No. of mental health consultations & self-assessed mental health</p>

Appendix C: Ethics approval for the qualitative study in Chapter 9

Monash University

Human Research

Ethics Committee

Approval Certificate

This is to certify that the project below was considered by the Monash University Human Research Ethics Committee. The Committee was satisfied that the proposal meets the requirements of the *National Statement on Ethical Conduct in Human Research* and has granted approval.

Project Number: 1301

Project Title: Pathways to service use among individuals with depression

Chief Investigator: Dr Penelope Hasking

Expiry Date: 08/12/2021

Terms of approval - failure to comply with the terms below is in breach of your approval and the *Australian Code for the Responsible Conduct of Research*.

1. The Chief Investigator is responsible for ensuring that permission letters are obtained, if relevant, before any data collection can occur at the specified organisation.
2. Approval is only valid whilst you hold a position at Monash University.
3. It is responsibility of the Chief Investigator to ensure that all investigators are aware of the terms of approval and to ensure the project is conducted as approved by MUHREC.
4. You should notify MUHREC immediately of any serious or unexpected adverse effects on participants or unforeseen events affecting the ethical acceptability of the project.
5. The Explanatory Statement must be on Monash letterhead and the Monash University complaints clause must include your project number.
6. Amendments to approved projects including changes to personnel must not commence without written approval from MUHREC.
7. Annual Report - continued approval of this project is dependent on the submission of an Annual Report.
8. Final Report - should be provided at the conclusion of the project. MUHREC should be notified if the project is discontinued before the expected completion date.

9. Monitoring - project may be subject to an audit or any other form of monitoring by MUHREC at any time.
10. Retention and storage of data - The Chief Investigator is responsible for the storage and retention of the original data pertaining to the project for a minimum period of five years.

Thank you for your assistance

Professor Nip Thomson

Chair, MUHREC

Appendix D: Supplementary material Chapter 9, Paper 4

Table Appendix D 1

Consolidated criteria for reporting qualitative studies (COREQ) checklist (Tong et al., 2007)

Domain 1: Research team & reflexivity		
<i>Personal Characteristics</i>	Interviewer 1	Interviewer 2
1. Interviewer	First author: AG	Second author: JB
2. Credentials	BA(Hons), MA, PhD student	BSc(Hons), GradDipPsych, PhD
3. Occupation	Student	Mental health researcher
4. Gender	Female	Female
5. Experience & training	Training in qualitative research methods. Extensive experience in mental health research.	Extensive experience in qualitative research methods and mental health research
<i>Relationship with participants</i>		
6. Relationship established prior to the commencement of the study	Yes, in 2/12 cases (Two participants were known to the interviewer via the network Facebook)	No
7. Participant knowledge of the interviewer	All participants knew that the interviewer was a PhD student	All participants knew that the interviewer was a mental health researcher
8. Interviewer characteristics	This was not addressed	This was not addressed
Domain 2: Study design		
<i>Theoretical framework</i>		
9. Methodological orientation & theory	Qualitative description with grounded theory overtones	
<i>Participant selection</i>		
10. Sampling	Convenience sample	
11. Method of approach	Recruitment via social media (Facebook & Twitter)	
12. Sample size	12	

13. Non-participation	Did not arise
14. Setting of data collection	Interview rooms at a metropolitan hospital or university campus
15. Presence of non-participants	No
16. Description of sample	See Table 1 in the body of the paper
<i>Data collection</i>	
17. Interview guide	Single page interview guide used in all the interviews. All interviews commenced with the same opening questions
18. Repeat interviews	No repeat interviews were conducted
19. Audio/visual recordings	All interviews were audio-recorded. Photographs were taken of the models constructed during the interviews
20. Field notes	Recorded during and after interviews as well as during the coding process
21. Duration	<i>M</i> 92, <i>SD</i> =12.56 minutes
22. Data saturation	No. Sampling continued for as long as resources would allow. Novel findings were still emerging when data collection ceased
23. Transcripts returned	Transcripts were returned to all participants for review
Domain 3: Analysis & findings	
<i>Data analysis</i>	
24. Number of data coders	3 (first three authors)
25. Description of coding tree	No coding tree was included however, table 9.2 illustrates the thematic development and contains the themes, categories and illustrative quotes
26. Derivation of themes	Themes were derived from the data
27. Software	NVivo qualitative data analysis software version 10.
28. Participant checking	Member checking was conducted in two phases. In phase one the model was used during the interviews for member checking. Following the interviews, the reconstructed electronic model and an interview transcript was made available to each of the participants
<i>Reporting</i>	
29. Quotations presented	Yes
30. Data and findings consistent	Yes

31. Clarity of major themes

A clear presentation of major themes is outlined

32. Clarity of minor themes

A clear presentation of the minor themes and categories is outlined

Table Appendix D 2

Questions and prompts used during the interviews

Study aim	Our overarching aim is to understand what led people with depression to engage with mental health services
1 st question	As you know we are really interested to find out how you ended up receiving treatment for depression, can you tell us about this?
Other Prompts/ Questions	<p>How did you feel prior to receiving treatment for depression? Why do you think you felt this way?</p> <p>Did you feel in control? Do you now?</p> <p>What was the situation you found yourself in prior to receiving treatment for depression?</p> <p>How did you cope with what was happening to you?</p> <p>Did anyone suggest you go get treatment? If so who and what did they say?</p> <p>Did anyone suggest you not get treatment? If so who and what did they say?</p> <p>Did you receive any information that influenced you? What was it? From where or who?</p> <p>How did it influence you?</p> <p>Was there anything that stopped your or delayed you getting treatment? Stigma? Location of services? Cost of services?</p> <p>Was there anything that pushed you toward treatment that has not yet been mentioned?</p> <p>What did the people who are important to you make of your situation?</p> <p>Had you had any previous experiences with mental health staff or general medical health staff? What were they? ...</p> <p>What was your experience of treatment this time? Who treated you? Has the treatment finished or is it ongoing?</p> <p>Do you feel that your needs were met by the mental health treatment?... Do you still want help with anything else?</p> <p>How do you think about depression generally? What about your depression? Has that changed since you have received treatment?</p>
Construction of flow chart	<p>During the interview each time the informant mentions a new person or idea or structure one of the interviewers will write a key word describing this onto a magnet</p> <p>When we have two or three of these magnets made we will ask the informant to think about whether there is any relationship between these elements, we may place these magnets on the white board and following the suggestions of the informant draw links between them or place them in a specified order or location.</p> <p>At various stages during the interview process we will revisit the model that we are constructing, asking the informant questions like: Do you think this should go here? Did this happen before or after this? How important was that? Is this model capturing something of what you mean? Or do we need to add something else or change something?</p>

Member checking	<p><i>During the interview</i></p> <p>We will use the model as a tool to facilitate “member checking” during the course of the interview “Was I right in understanding that you felt that was really important because after thishappened.”</p> <p><i>Conclusion of the interview</i></p> <p>Do you feel that the model we have developed accurately represents’ what they have been talking about?</p> <p>Could improve it by adding or changing anything?</p> <p>How did you feel about us constructing this model during our interview?</p>
Concluding the interview	<p>At the end of the interview the interviewer will take a few minutes of briefly summarise the main points that they have heard during the interview. They will say “please feel free to interrupt, clarify or add anything that you feel is needed or would be helpful.” ...Then at the end of the summary they will be asked “is that a reasonable summary of what you have said today?”</p>
