An Investigation of 435 Sequential Homicides in Victoria: The Implication of Psychosis, Motive for Offending, Substance Abuse and Gender

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Abbreviations

ABS	Australian Bureau of Statistics
AIC	Australian Institute of Criminology
CTO	Community Treatment Order
CI	Confidence Interval
DHS	Department of Human Services
DSM-III-R	Diagnostic and statistical manual of mental disorders
ICD-10	International Classification of Diseases
KSA	Known Substance Abuse
LEAP	Law Enforcement Assistance Package
NGMI	Not Guilty by Reason of Mental Impairment
NHMP	National homicide monitoring program
OR	Odds Ratio
PTSD	Post Traumatic Stress Disorder
RAPID	Redevelopment of Acute and Psychiatric Information Directions
RR	Relative Risk
SES	Social economic status
SMHWB	National survey of mental health and well being of adults
SPSS	Version 17.0, 2007
UR	Unique Record number
VPCR	Victorian Psychiatric Case Register

Abstract

Homicide, and the characteristics of those who perpetrate it, has long been of interest to researchers and, indeed, the general public. Any differences in the characteristics of female homicide offenders in particular have largely been ignored. However, many examinations of the relationship between mental illness and serious violence, substance abuse, criminality and motivation have been encumbered by methodological limitations.

This research aimed to overcome some of the methodological limitations that have characterized much of the previous literature and gain a more comprehensive clarification regarding differences between genders, differences in the impact of co-morbid substance abuse, number of mental health contacts, prior offending and differences in motivation and victim selection for homicide offenders who have a psychotic illness and those who do not.

These data linkage studies utilized an entire population of homicide offenders from 1997-2005 (N=435) in Victoria, Australia. Murder-suicide offenders were also included. Police data were linked to a state wide register of public mental health contacts and rates of mental health diagnoses (particularly psychosis), prior mental health contacts, known substance abuse, criminal convictions and other index offence characteristics such as motive and victim selection were established. Identical methodology was used to compare rates of psychotic illness, substance abuse and prior offending in two randomly selected community

samples. Substance abuse and prior offending were also compared with a non-offending schizophrenia group.

Of the homicide offenders in total, 38 (8.7%) were diagnosed with schizophrenia and 24 (5.5%) were diagnosed with affective disorders; they were 13.4 times more likely than comparisons to have schizophrenia and female offenders (n=55) were 43 times more likely than their comparison group. Only one woman killed during the first episode of psychosis; those female offenders diagnosed with a psychotic illness had received their diagnosis on average 7.15 years previous to the offence; a relatively long prior history of mental illness. Of the male offenders (n=380), 43.3% of those with diagnosed schizophrenia (n=30) committed their offence during first episode. Of the entire sample, 117 (26.9%) had some prior mental health contact.

Although homicide offenders' rate of known substance abuse was higher than in the general community, and among schizophrenia comparisons after cases with a criminal history were excluded, there was no difference between those offenders with schizophrenia and other homicide offenders or those with schizophrenia in the community. A similar pattern emerged in the comparison of prior offending history between those with and without schizophrenia and their relative comparison groups. Homicide offenders with schizophrenia had higher rates of prior offending than the general community comparisons and those comparisons that had schizophrenia but had not committed homicide. Homicide offenders with schizophrenia were less likely to kill a stranger

but were 2.17 times more likely to kill a relative and 2.6 times more likely to be motivated by revenge than those without schizophrenia.

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Declaration for thesis based or partially based on conjointly published or unpublished work

General Declaration

In accordance with Monash University Doctorate Regulation 17/ Doctor of Philosophy and Master of Philosophy (MPhil) regulations the following declarations are made:

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 submitted to peer reviewed. The core theme of the thesis is homicide and mental illness. The ideas, development and writing up of all the papers in the thesis were the principal responsibility of myself, the candidate, working within the doctorate of clinical psychology (forensic) under the supervision of Professor James Ogloff and Professor Paul Mullen. 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 3, 4 and 5 my contribution to the work involved the following: Product design (in consultation with my supervisors); review of appropriate literature; designing a coding sheet for both police data and mental health data; reviewing police data bases, reviewing the Department of Human Services RAPID data base; coding items; conducting data analyses; and writing papers. Supervisors provided input into completed manuscript drafts.

Thesis chapter	Publication title	Publication status*	Nature and extent of candidate's contribution
2	Prevalence of schizophrenia and characteristics of offending in a population of homicide offenders.	Submitted	As above
3	A study of psychotic disorders among female homicide offenders.	In press (Psychology, Crime & law)	As above
4	Schizophrenia disorders, substance abuse and prior offending in a sequential series of 435 homicides.	Submitted	As above

I have / have not (circle that which applies) renumbered sections of submitted or published papers in order to generate a consistent presentation within the thesis.

Signed: ……

Date: ……

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INTRODUCTION

0.1 Thesis outline

This thesis reports a comprehensive study of mental illness and homicide. The investigation was based on three studies of a sequential population of 435 homicide offenders from 1997—2005 in Victoria, Australia. The thesis comprises six chapters which includes one journal article (in press) and two articles submitted to peer reviewed journals for publication.

Chapter one provides a brief review of the literature on mental illness and serious offending and, in particular, the examination discusses the methodological difficulties that have hampered much of the research to date. Several associations between serious offending and mental illness are then reviewed, including co-morbid substance abuse, prior offending, first episode psychosis, and motive for offending.

Chapter two is a detailed description of the study's methodology that provides detail beyond that which is possible to include in a journal article. Further, ethical considerations in the design of this study are considered.

Chapter three reports the first study of the thesis. The study is a retrospective, data linkage study that examines an entire sample of homicide offenders for the prevalence of mental illness. Differences are observed between the schizophrenia and no schizophrenia groups in homicide characteristics, principally motivation and type of relationship between offenders and their victims. The paper submitted from the study is then presented.

Chapter four reports the second study of the thesis. This study is a data linkage study that specifically examines rates of psychotic illness in an entire population of female homicide offenders over an eight-year period. Motive, histories of mental health contact, and prevalence of first episode in relation to their offence are examined in particular. Murder-suicide offenders are included in the sample. The findings are compared with data from two comparison groups drawn randomly from the general population. The paper (in press) from the study follows.

Chapter five reports the final data linkage study of the thesis, examining a sequential sample of homicide offenders of both genders. This paper specifically challenges the view that homicidal behaviour by those with a psychotic illness can be accounted for, in most cases, by a co-morbid substance abuse disorder or by a prior offending history. Rates of mental illness, substance abuse and prior offending within the sample are compared with a random sample from the community using identical methodology to that used to ascertain rates within the sample.

Finally, Chapter six is an integrated discussion in which the findings of the three articles are jointly considered with respect to their broader implications, such as treatment and prevention from serious offending for those with schizophrenia. Included in this chapter are the collective results.

0.2 Research aims

This thesis sought to add to the extant literature on links between mental illness and homicide offenders and particularly female homicide

offenders. The aims were three-fold and were each addressed in three studies and are discussed in chapters three, four and five of the thesis. The intention was to overcome some of the methodological limitations that have characterized much of the previous literature that has examined the link between mental illness and violence. Recurrent approaches have had their own advantages and limitations and researchers reliably vary in their methods of sample selection, in their specification for mental illness classifications, in which behaviours constitute 'serious offending' and in the statistical interpretation of results. Consequently, meaningful comparisons between studies have been difficult to determine.

0.2.1 Research aim one:

The first aim was to study the rates of mental disorders in an entire population of homicide offenders. The focus was rates of schizophrenia and psychosis and whether or not these rates differed between genders. Links between female homicide offenders and mental illness has largely been ignored and data between time of diagnosis and offence date was of particular interest.

0.2.2 *Research aim two:*

An additional objective was to seek a more comprehensive clarification regarding differences in prior offending rates and the impact of substance abuse between those homicide offenders who have schizophrenia or a psychotic illness and those who do not. A current, popular point of view is that schizophrenia and co-morbid substance abuse, along with criminogenic factors, increase the individual's risk of violent behaviour

rather than factors inherent simply to the schizophrenic process, such as social dislocation.

0.2.3 Research aim three:

The final goal was to consider homicide offenders' motives and whether or not their offending tended to be more instrumental or reactive and if these characteristics differed significantly between those offenders with and without a psychotic illness. Other offending characteristics such as victim selection differences (the relationship, if any, connecting the offender and victim) between the delusionally disordered and non disordered were also of interest.

0.2.4 Potential significance

The potential significance of this research is that it may affect the services of three areas that have extensive interactions with the mentally ill. Firstly, it may allow those health services that manage mentally ill populations a more informed approach to policy, practice and initiatives in the management of clients. Secondly, it may allow the individual clinician a better understanding of treatment options in the prevention of serious offending by those with a psychotic illness, and in consequence guide a focus for best therapeutic efforts. Finally, members of the police force are more often than not the first port of call for family members of those with a psychotic illness who are concerned for either their own safety or the safety of him or her with the illness. Police members are also burdened with the investigation of homicide and the identification of an offender's motive. Findings in this study should highlight for law enforcement critical risk

factors for the likelihood that a person suffering a psychotic illness will commit a serious, violent act in the near future.

If the issues for those with schizophrenia or a psychotic disorder are wider than co-morbid substance abuse and/or antisocial dispositions, then ascertainment of these wider issues is critical to identifying those most at risk of committing a violent offence. If, in fact, aspects inherent to social dislocation are equally significant to the risk of future offending as factors such as co-morbid substance abuse or a history of offending, treatment ought to be targeted toward improving the client's ability to form and maintain familial and social relationships. If most homicides by offenders suffering from a psychotic illness are planned and reflect a discordant relationship that gives rise to feelings of revenge then, at least in theory, some future violent offending could be prevented.

There is an opportunity for police to make use of the finding regarding women who have been diagnosed with a psychotic illness years before their respective offences. Any police communications with this group requires careful consideration of how best to proceed and, for mental health services and clinicians, any mental health referral at any point in the lifetime of a female psychosis patient requires cautious treatment and management.

CHAPTER 1: LITERATURE REVIEW

1.1 Introduction

Generally, examination of any link between mental illness and serious offending has reflected the ebb and flow of the legal, political and sociological forces of their time. In earlier studies, the criminality rate of mentally ill patients was found to be the same as, or even lower, than that in the general population (Cohen & Freeman, 1945). In the 1970s studies emerged reporting a higher criminality rate of mentally ill patients in the general population (Sosowsky, 1978; Zitrin, Hardesty, Burdock, & Drossman, 1976). Even so, broad opinion at that time supported the notion that mental abnormality by itself contributes little to the prediction of violent behaviour. Indeed, the social dislocation associated with mental illness was widely held to be a confounding factor (Mullen, 1984).

More recently, an evaluation of an Australian population cohort (Wallace et al., 1998) indicated that individuals who developed major mental disorders in adulthood were significantly more likely than non-disordered persons to commit crimes and even more likely to commit crimes of violence. This idea has been widely echoed internationally (Eronen, 1995; Swanson, Holzer, Ganju, & Jono, 1990; Taylor & Gunn, 1999).

The three studies reported in chapters 3-5 in this thesis each include a relevant literature review that, generally, will not be duplicated here. Instead, this chapter provides an overview of pertinent research regarding the exploration of links between mental illness and serious offending, including the presently limited exploration of female homicide, and

critiques the various methodological approaches to the task. It will be argued that methodological difficulties such as definitions of violent offending, information and selection bias and other confounding factors have led to limiting results.

Although disorders such as psychopathy and anti-social personality disorder have also been linked to increased risk of serious offending, the objective of this thesis is to investigate the relationship between psychotic disorders and homicide. Thus, this chapter will focus on psychotic illness and violence and also discuss some other variables that others have proposed may play in mediating the link between serious offending and major mental illness, such as dual diagnoses of schizophrenia and substance abuse. The chapter is divided into two parts. The subject of the first part is the three predominant methodological approaches to investigating mental illness and violence and the remainder of the chapter is devoted to a consideration of various characteristics that may differentiate between the psychotically disordered and non disordered offender such as motive for committing homicide, or that may differentiate between genders for the disordered offender such as rates of psychotic illness.

1.2 Prevalent methodologies

To date, researchers have largely employed three specific methodological approaches in assessing any link between mental illness and violence. One method is community sampling (determining the presence of mental illness and the level of violence within a population pool and then ascertaining associations between the two variables). The

second approach is to compare rates of offending for people with a mental illness with rates of offending from a community sample. Finally, researchers have compared rates of mental disorder among an offender population. Each of these will be discussed briefly below.

1.2.1 Community samples

The community sample approach explores a general population from a specific area and time period, determines the presence of mental illness and the level of violence within that group and then ascertains associations between the two variables. The major advantage of this methodology is that these studies encompass large populations and that the samples are unselected. A limitation of this approach is that it rarely includes salient details such as the method of homicide, relationship of the victim to the offender and so forth.

Utilising such a birth cohort sample (1944—1947) (N = 335,990), Brennan and colleagues (2000) determined that there is a relationship between mental illness and violence. This study compared a birth cohort drawn from the Danish general community and compared data on arrest records for violence and hospitalisations for a major mental disorder. Diagnostic groups differentiated between schizophrenia, organic brain syndrome, affective psychoses and other psychoses and “Subjects were assigned to a diagnostic group based on a hierarchy of diagnoses (from highest to lowest)” (p. 495). A secondary diagnose of substance abuse (drug and/or alcohol) was also recorded. Brennan and colleagues defined violence as the violation of the Danish Penal Code offences of murder, attempted murder, rape, violence against authority, assault, domestic

violence and robbery. They found that even when the effects of gender, marital status, socioeconomic status (SES), personality disorder and substance abuse were controlled for, major mental disorders are associated with an increase in the likelihood of arrest for violence. For men, the highest risk for violence was among those with organic brain syndrome (1.9%) and for women, the highest risk was for those diagnosed with schizophrenia (7.1%).

Likewise, in Northern Finland, Tiihonen et al. (1997) studied a large general community sample (N = 12,058) for associations between major mental disorders and criminality in an unselected birth cohort (1966 – 1992). Tiihonen and colleagues assessed hospital records according to DSM III-R criteria. Accordingly, they assigned subjects to the following categories: schizophrenia, schizophreniform and schizoaffective disorders, mood disorders with psychotic features, organic brain syndromes and disorders, paranoid and other psychoses and no mental disorder. This study distinguished between offenders who had committed at least one crime, offenders who had committed at least one violent crime, and male offenders who had committed a crime against property. For the classification of 'at least one violent crime', this study utilized similar offence classifications to Brennan and colleagues: homicide, assault, robbery, arson and violation of domestic peace. Various demographic and SES data were controlled for and "alcohol problems" were also recorded. The criteria for assessing an individual as suffering from an alcohol problem are unclear. Nevertheless, Tiihonen and colleagues found that men with a diagnosis of schizophrenia and co-morbid alcohol abuse had a

history of committing a violent offence (27%) as compared with male patients with schizophrenia and no alcohol abuse (3%) who had committed at least one violent offence; similar to findings by Mullen et al. (2000).

Meaningful comparisons between studies are difficult to determine because different jurisdictions variously define offence elements. Even within one jurisdiction, the interpretation of the elements of assault can vary widely. For example, in Victoria, the offence of assault is applicable to a wide range of situations and behaviours; if a person threatens violence to another (whether or not he or she actually intends to commit it), and if the victim is in fear (believing the offender is in a position to carry out that threat), the elements of the offence are proven; no actual physical assault need take place. While this situation would doubtless attract a lesser penalty than if the assault had actually included physical contact, the resulting charge of 'assault' applies in both situations (Crimes Act, 1958).

Methodological problems are also evident in uncorroborated self-reporting surveys utilised in community samples. Swanson et al. (1990) examined the relationship between violence and the mentally ill in the community, based on response to self-report surveys (N = 10,059). Major mental disorders were divided into 11 categories including a category of schizophrenia or schizophreniform disorder and cannabis abuse or dependence was distinguished from alcohol and/or other drug abuse of dependence. They report that both male subjects (21.08%) and female subjects (21.70%) with alcohol or drug use disorders were more than twice as likely as both males (11.30%) and females (10.03%) with schizophrenia to report violent behaviour. However, violent behaviour was determined by

utilizing the diagnostic sections of the DSM III for antisocial personality disorder items 1 – 4. Thus, a criterion for violence was met if, in the preceding 12 months, an individual for such behaviour acknowledged the following: “Did you ever hit or throw things at your wife/husband/partner? [If so] Were you ever the one who threw things first, regardless of who started the argument? Did you hit or throw things first on more than one occasion?” (p. 763). It is difficult to assess the validity of these findings for two reasons. Firstly, the veracity of self-report surveys is questionable given that some subjects surveyed are doubtless inclined to modify interpretations of their past behaviour and/or are less inclined to disclose acts of violence. Further, even though it is typical for different studies to vary regarding which behaviours constitute serious offending, the criteria for violent behaviour in Swanson and colleagues’ study are remarkably restrained.

From the above depiction of community samples, it is clear that this methodology benefits considerably by utilising large populations. Nevertheless, data collection from such large populations often requires the arguably subjective information gathered from self-report surveys. Further, meaningful comparisons between studies are made difficult because of the variation in offence classification--which offences constitute serious, violent crime.

1.2.2 Rates of offending for people with a mental illness

A more common methodological approach has been to select a group of mentally ill offenders, calculate rates of those who have committed homicide or serious offences, and then compare those rates with

rates of offending in a community sample (see Brekke et al., 2001; Erb, Hodgins, Freese, Muller-Isbener, & Jockel, 2001; Koen et al., 2004; Modestin & Ammann, 1996; Mullen et al., 2000; Sosowsky, 1978; Steadman et al., 1998; Swanson et al., 2006; Wallace et al., 2004).

The foremost problem with the approach of comparing people with a mental illness with a community sample is establishing a comparison group of 'normal' individuals (i.e., those with no history of mental illness) who share as many characteristics (ethnicity, age, education and so forth) as the mentally ill group from whom precisely comparable information can be obtained. There is a bias in that it is likely that some individuals in the community sample also have a mental illness but they have been categorised as matched 'normal' subjects.

Further, there is a confounding factor when comparing the arrest rates for the mentally ill to individuals who are not mentally disordered. As West and Farrington (1973) point out, the best predictor of offending for 'normal' offenders is previous offending. There is also evidence for this in studies of the mentally ill (Gibbens & Robertson, 1983). As discussed, the current contention is that individuals with a mental illness have higher arrest rates than the general population. Given this, the group of mentally ill with existing offence charge records are predisposed to attract more arrest charges.

Zitrin (1976) compared the arrest rates of 867 patients discharged from a psychiatric hospital with a sample from the community. The arrest period included two years preceding and two years following the patients' inclusion in the study. They report that the discharged patients that had

attracted a diagnosis of schizophrenia had more arrests during that period than individuals in the general population.

In one of the very few studies that generated data based on self report, as well as a collateral information, clinical data and official offence records, Steadman and colleagues (1998) compared 1136 ex-patients from psychiatric hospitals with a sample from the community. The ex-patient group had been discharged from acute psychiatric facilities within the previous year. Census tracts were used to locate a comparison group of residents that resided in analogous neighbourhoods to those within which the patients lived following their discharge. There was no significant difference between ex-patients and the non-disordered group in rates of violence when there were no drug abuse symptoms for either group. However, 57% of the community residents contacted for inclusion in the study refused to take part. Such a substantial rate of omission of possible respondents renders the validity of this study as uncertain.

Rates of offending for people with a mentally illness have also been measured by comparing cohorts of mentally ill individuals from discrete time periods and evaluating the criminal convictions of those cohorts with the convictions of matched community samples. This method is useful for identifying trends over time (see Wallace et al., 2004; Mullen et al., 2000). Notwithstanding conviction rates for offences are underestimated and are subject to qualitative differences, as Mullen and colleagues observe, this methodology rests on the assumption conviction rates “offer reasonably objective data for comparison” (p. 616) when compared to community sample surveys.

In conclusion, studies of rates of offending for people with a mental illness is the more common methodological approach, but establishing a comparison group of 'normal' individuals often encompasses bias—especially when comparing arrest rates between the two groups.

1.2.3 Rates of mental disorder among offenders

A less used methodological approach is to measure the frequency of mental illness in a population of homicide offenders or those who commit serious offences. Those who have undertaken such a methodology (see Joyal et al., 2004; Mouzos, 1999; Schanda et al., 2004; Shaw et al., 2006; Simpson, McKenna, Moskowitz, Skipworth, & Barry-Walsh, 2004; Simpson, Skipworth, McKenna, Moskowitz, & Barry-Walsh, 2006; Tiihonen et al., 1993; Wallace et al., 1998) have varyingly defined mental illness and violence, as have the previously mentioned approaches. The myriad of interpretations, given to both mental illness and to behaviours which constitute serious violence, give rise to conflicting rates of association between mental illness and violence (Shaw et al., 2006; Wessely & Taylor, 1991).

An example of this methodological approach, is a study by Tiihonen and colleagues (1993). Their subjects had been accused of homicide (N = 107) over a one year period. They found that the prevalence of men with schizophrenia within that group were approximately 7.5 times more likely to commit a homicide than were non-disordered men. However, the moderate sample size is restrictive in assessing the validity of the results.

In a similar study of homicide offenders, but one of much grander proportions (*N* = 1498 over 30 years), Simpson and colleagues (2004) found the annual rates of homicide were static over that time and the rates of homicide committed by mentally ill people fell from 19.5% to 5.0%, a rate of 4.2% per year. Taylor and Gunn (1999) also found a reduction (3% per year) in the contribution of mentally ill people to the overall homicide rate. Even so, Simpson et al. drew on secondary data sources varying in quality and by their own admission, were likely to be incomplete. As is also the case with various other methodologies, Wessely and Taylor (1991) note the propensity for information bias: "Information bias occurs whenever the amount of information available to the researcher differs between subjects" (p. 209).

For the very few Australian studies that have examined the prevalence of mental disorder among homicide offenders, a similar partiality appears to exist. Mouzos (1999), in a review of the Australian Institute of Criminology's (AIC) National Homicide Monitoring Program (NHMP), compared mental health data from a total of 2821 homicide offenders in Australia over a nine year period with mental health data from a population survey (Australian Bureau of Statistics (ABS), 1998). She concluded that the 4.4% of homicide offenders recorded as suffering a mental illness was substantially less than the 18% reported by those in the survey. However, the survey consisted of prevalence rates for a range of major mental disorders that did not include psychotic illnesses—one of the illnesses most linked to increased risk of serious offending. Also, as Mouzos accedes, the data for the NHMP study was taken from police

records; a data set that is unreliable in recording accurate information on the existence of mental illness (diagnosed or otherwise). The results are likely to underestimate incidents where a homicide offender has suffered from a mental disorder at the time of his or her offence.

Nielssen and colleagues (2007), in a further Australian study, researched psychotic illness and homicide offenders specifically over a 10 year period and concluded that the first year of illness and the first episode of psychotic illness accounted for 69% of their sample committing their offence. However, their study relies on files and court judgments, not an entire sample of offenders and neither does it differentiate for gender.

In summary, the community sample methodology allows for the use of large samples but can be undermined by self-report information bias. Examination of rates of offending for people with a mental illness is a more common method and likely offers more objective data than the proceeding methodology, but often lacks a robust comparison group for comparison. Studies of rates of mental disorders among offenders often acknowledge or suffer from information bias because of incomplete records. However, even though this methodology has been utilised to incorporate a multitude of interpretations given to both mental illness and violence, it is often given specificity of offence—homicide. Thus, comparisons between studies may be more useful than either the community sample approach or by considering rates of offending for people with a mental illness.

Of interest to researchers is not only the existence of a link between serious violent behaviour and mental illness, but also characteristics of

offending which may differentiate the disordered from the non-disordered or differentiate between genders for the disordered. In the following section some of these characteristics are considered; variables such as a history of previous mental health contact and motive for offending.

1.2.4 Mental health contact and active symptoms

Wallace et al. (1998) stress that it is erroneous to presume that if a person has had contact with mental health services prior to committing a homicide there has necessarily been a failure of risk assessment. This is doubtlessly an accurate appraisal given current risk assessment precepts. However, in their study of convicted serious offenders of interpersonal violence (N = 2153), 30% had also had prior psychiatric contact; hence it seems likely that the current risk assessment measures are lacking.

Nevertheless, the number of previous contacts with mental health services is considerably higher for offenders in those studies where the focus has been schizophrenia and homicide specifically. Shaw et al. (2006) in a study of homicide offenders (N = 1594) in England and Wales that did not differentiate for gender, found just less than half of those with a mental illness at the time of their offence had symptoms of delusions and/or hallucinations. Nielssen and colleagues (2007) reported 45% of their sample of homicide offenders had had contact with mental health services in the two weeks prior to their offence and the most common delusional belief was that the victim planned to killed the subject.

A delusion of persecution is one psychotic symptom which has often been associated with the schizophrenic offender who has committed homicide (Bartels, Drake, Wallach, & Freeman, 1991; Swanson et al.,

2006). Joyal et al.'s (2004) study found that 60% of homicides were considered as the consequence of psychotic symptoms. Swanson and others (2006) agree there is an association between violence and psychosis, but only for those subjects where the characteristic symptoms of the psychosis are "positive" (for example a symptom of grandiosity), as opposed to a "negative" symptom (such as affective flattening).

Simpson et al. (2004), in a New Zealand study, found that 10 % of homicide offenders (N = 1498) had been admitted to hospital during the month prior to the offence and 20 % within the previous year. More recently, Simpson et al. (2006) found that 34 of the 39 persons acquitted on the grounds of insanity over a 13 year time period had a previous diagnosis of a psychotic disorder. For approximately one third of the offenders deemed psychotic at the time of their offence, the index offence was their first hospital admission. Twelve percent of offenders who had received a mental health disposition in regards to their index offence were later diagnosed with a psychotic illness.

1.2.5 Onset time of illness relative to offence time

Even so, the studies that have addressed a link between psychotic illness and violent behaviour focus on males and any such link for women remains largely unexamined. The few studies that have employed large enough samples of female homicides to be of influence have found that for this group the association between major mental illness and committing homicide is significantly stronger than it is for men (Eronen, 1995; Schanda et al., 2004).

There have been some reports that the pattern of offending among persons with schizophrenia differs from that in the general population by starting later (after the onset of active illness) and continuing longer (Wessely, Castle, & Taylor, 1994). Consequently, the hypothesis has been touted that higher rates of violence among persons with schizophrenia are directly related with the symptoms of the illness. Wallace and colleagues (2004) tested this hypothesis, but they found no clear associations emerged between the onset of active illness in schizophrenia and the pattern of offending. Over 60% of subjects with schizophrenia and a criminal conviction for a serious offence had a conviction for such an offence before their first psychiatric contact. No association was found between age and first offence for schizophrenia subjects compared to the matched comparison subjects. Joyal and colleagues (2004) also found that well before the onset of their illness, those with a major mental disorder had a history of violent offending.

Extending the proposal that a significant proportion of violent offenders with schizophrenia are violent well before the onset of the illness, Mullen et al. (2000) found that most of the male patients in their study that had attracted criminal convictions had not only committed their first offence prior to their first psychiatric admission, but had also committed the bulk of their offending history before their initial contact with mental health services.

1.2.6 Gender variant

As previously stated, there are very few firm epidemiological studies that concern female homicidal behaviour and generally samples

have been small (see Eronen, 1995; Schanda et al., 2004). Contributory to this trend is the factor that homicidal behaviour is much less common in women than in men. Regardless that women are responsible for only a fraction of homicides, there do seem to be special subgroups among which the risk of homicidal violence is notably high.

The NHMP 2004-05 data reveal females were responsible for 16% of the total homicides during that period. This gender disparity is consistent with NHMP statistics over the past 16 years and with international homicide research (Brookman, 2005). Dissimilarities in incident patterns are immediately apparent: While men are more likely to kill an acquaintance or friend (32%), women are more likely to kill family members or an intimate partner (66%). Further, females' offending careers tend to start later than males' and cease earlier. The pattern is also quite different regarding rates of offending. Males' offending rates peaked in their early to mid twenties whereas the highest rate of offending for females was for those aged 30-34 years. Of the solved offences that involved a firearm, only one homicide occurred between a female victim and offender (Mouzos & Houliaras, 2006).

A Finnish study of homicidal behaviour concluded that female homicide offenders had more or less a 10-fold higher odds ratio than the general female population for having schizophrenia or a personality disorder (Eronen, 1995). Mullen and colleagues (2000) found that 55% of women with a history of criminal offending had their first conviction prior to their first psychiatric contact. According to Brennan et al. (2000), women are at higher risk of committing violence when they have attracted

a diagnosis of schizophrenia compared to those women without a mental health diagnosis. While this occurrence is the same for men, the highest risk group for this subset was observed to be those diagnosed with organic brain disorder.

Of the 53 females who had a prior history of criminal offending recorded in the study by Tiihonen and others (1997), none of them used alcohol or drugs, only one criminal offender suffered from a major mental illness and only four female subjects diagnosed with schizophrenia had problems with alcohol or drugs.

In one of the few domains that females tally higher rates than males, 45% of female offenders had consumed alcohol prior to their homicide offence as compared to 30% of males in accordance with the 2004-2005 NHMP annual report.

Because genders are rarely differentiated in homicide/mental illness studies, identified trends such as those suffering from a psychotic illness are more likely to kill during their first episode, must be treated with caution. The two principal studies that examine female homicide (see Eronen, 1995; Schanda et al., 2004), do not address time of onset of illness to time of offence, offender motivation or victim selection.

1.2.7 Substance abuse / history of violence

Interactions of co-morbid substance abuse, schizophrenia and patterns of criminal offending have widely been studied, however the precise nature of the links remain unclear (Mueser, Yarnold, & Levinson, 1990; Ogloff, Lemphers, & Dwyer, 2004; Wallace et al., 2004; Wright, Gournay, Glorney, & Thornicroft, 2002). Generally, studies to date concur

with findings by Steadman et al. (1998): For both ex-patients and a community sample, the presence of drug abuse symptoms significantly increased the rate of violence recorded. Ex-patients reported a higher drug use than the non-disordered group.

However, no single variable, including substance abuse, is supported as an explanation of increased risk of committing a serious offence for an individual with schizophrenia. Rather, current studies suggest offending reflects clusters of factors including deficits in social, psychological, and brain function that interact with mental state. These influences are often compounded by homelessness and lack of social supports in which many persons with schizophrenia live (Brennan et al., 2000; Swanson et al., 2006; Wallace et al., 2004).

The effects of habitual drug use, as opposed to intoxication at the time of offending, is not usually examined separately in these studies (Lindqvist, 1989). An exception to this predilection is a study by Mueser and others (2000). Their distinction between substances abuse for hospitalised psychiatric patients reported alcohol as the most common type of substance abuse disorder with rates as high as 28% to 51%. Use of cannabis rated as the next most common substance.

The prevalence of lifetime substance abuse in forensic psychiatric patients has been reported to be as high as 74% (Ogloff et al., 2004). Mullen et al. (2000) found that a co-morbid diagnosis of substance abuse for men with schizophrenia significantly increased the chance of acquiring at least one conviction over a lifetime.

Confirming the findings of others, Tiihonen et al. (1997) found that in an unselected birth cohort (*N* = 12,058) in Northern Finland, both alcohol induced psychosis and schizophrenia with comorbid substance abuse were associated with a higher risk of violent behaviour. Twenty seven percent of the male patients diagnosed with schizophrenia and coexisting alcohol abuse had committed violence compared to 8% of that group that were without alcohol abuse.

Eronen (1996) found that of the 1423 homicides committed over a twelve year period, males who were suffering schizophrenia (but who had no secondary diagnosis of alcoholism) were six times more likely than a non-disordered male to kill whereas males suffering from schizophrenia and alcoholism were 17 times more likely to kill.

It is also unclear whether or not substance abuse triggers certain individuals with schizophrenia to behave violently or if those offenders that abuse substances do so because that is their susceptibility – to offend and/or to use substances, regardless of a coexisting mental illness. Giving credence to this hypothesis are studies that have consistently identified a subgroup of children of mothers with schizophrenia, who present a stable pattern of aggressive and/or antisocial behaviour from a young age (Olin, John, & Mednick, 1995). Hodgins and Janson (2001) found that substance abuse in childhood was a greater risk of later offending than comorbid drug abuse.

Joyal et al. (2004) also suggest that for the homicide offenders with a dual diagnosis of schizophrenia and substance abuse, the use of

substances may be more closely related to antisocial personality disorder rather than a triggering of schizophrenia that begets offending behaviours.

1.2.8 Other characteristics of homicide offences

Other characteristics that may differentiate subgroups of homicide offenders with schizophrenia are the relationship between the offender and the victim (Erb et al., 2001; Nielssen et al., 2007).

Violent acts committed by offenders with a major mental disorder usually occur in a residence instead of a public place (Joyal et al., 2004; Steadman et al., 1998) and, accordingly, between 50% and 60% of the victims are family members (Erb et al., 2001).

1.2.9 Instrumental and reactive offending sub-types

The notion that acts of aggression can be classified as either instrumental or reactive or, indeed a mixture of both has been widely studied and debated (Taylor, Peplau & Sears, 2000). Instrumental aggression refers to violence that ultimately services a consequential goal other than to physically harm another, for example killing another in order to steal or to extract revenge for a professed wrong doing against the subject. The transgression may be one of physical, financial, social, or emotional means. Instrumental aggression has been referred to as ‘cold’. In contrast, ‘hot’ or reactive aggression is violence that is impulsive, an immediate reaction or retaliation to a threat or injustice (perceived or otherwise). Generally, classification systems take into account the existence of anger during the offence, identification of the offender’s

primary goal and whether or not there was evidence of planning (Bushman & Anderson, 2001).

Instrumental and reactive classification is necessarily linked to motive and is undeniably allied with identifying the offender and establishing the prosecution's case. However, police databases do not necessarily include details of an assumed motive at the time of initially recording the offence and often, when a motive subsequently becomes apparent, the database is not updated. Dearden and Jones (2008), in a study of NHMP data, suggested that during the course of 12 months 30% of homicides had been committed apparently without motive. If this were the case, successful prosecution cases would be much less than the 70-80% conviction rate they conventionally achieve. Police databases, as a discrete reference, are not sufficient in accumulating data on motive.

Identifying any significant difference in motivation or instrumental/reactive offending between those homicide offenders with a psychotic disorder and those without such an illness may ameliorate current treatment and prevention models as well as assist with police investigations of homicide.

1.3.0 Summary

Understanding the typology of a population is the keystone of theory building. A considerable amount of research between mental illness and serious offending in general has afforded a current consensus that the rate of serious offending for the mentally ill is higher than that of the general population. However, interactions specifically between psychosis, homicide and mental health service contact have not been widely studied.

Currently, very little is known regarding the percentage of homicide offenders who were, or had been, in care for schizophrenia or other mental illnesses at the time of their offence. Further, whether or not characteristics of mental health services contact may be predictive of those with a psychotic illness that are at most risk of committing homicide has not been comprehensively researched.

As previously stated, studies of the relationship between mental disorders and offending have been largely limited by methodological difficulties. Difficulties include information bias, sample selection and defining both mental illness and serious offending. Although the definition of homicide also varies from one jurisdiction to another, essentially the elements of the offence are the same – the unlawful killing of another (Mouzos & Houliaras, 2006) and hence is more specific than 'serious offending'. To accurately assess the proportion of homicides committed by persons with a psychotic mental illness, the cohort necessarily must include all the homicide offenders within a given period within a given jurisdiction (Erb et al., 2001).

Likewise, violence has often been divided into the categories of instrumental/reactive motivation. However, instrumental/reactive motivation has not been studied in terms of homicide offenders and psychosis. Such accompanying data should provide pertinent information about incident patterns and potential risk markers for homicide offenders and can guide the development of targeted prevention policies and initiatives.

Future research requires the use of non-parametric and parametric measures, as appropriate, to assess these interactions and to subsequently use the results to identify valuable areas of future research. In order to minimise information bias, police records ought to be cross referenced with psychiatric data from both within the public system and within the prison system.

Expansion of validated instruments for the assessment of future violence within the mentally ill population is a worthwhile undertaking. Such research could have implications for appropriate police responses to mental health issues, for those working in other forensic settings, such as treatment facilitators and, for legal decision makers.

In the current study, it was hypothesized that both male and female homicide offenders would have higher rates of psychotic illness than the general population and that female homicide offenders would have a higher rate of psychotic illness than the male offenders. Further, it was envisaged that neither substance abuse nor prior offending rates would differ between the genders nor between those offenders with schizophrenia and those non-schizophrenia offenders but would be higher than general population comparisons. Finally, it was hypothesized that those offenders with schizophrenia would differ significantly in their motivation for committing homicide than the group without schizophrenia.

CHAPTER 2: OVERALL METHODOLOGY

The methodology employed in particular aspects of the studies in this thesis is presented in the method sections of each of the manuscripts. In this chapter, a brief description of method considerations for the studies and the overall methodology will be presented in detail.

2.1 Ethical considerations

Researchers in this area have a responsibility to be judicious in designing their studies and prudent in suggesting causal relationships. The issue of informed consent is also one that requires careful deliberation. Obviously, this study was to include homicide offenders who have been deemed to be suffering a mental impairment at the time of their offence and, presumably, at least some of those offenders would no longer be considered to be mentally impaired to the same degree. It is likely that the process of obtaining permission from those offenders could itself promote the idea that they are once again on trial. This study did not obtain informed consent for the following reasons: The identifying data of name and date of birth for homicide offenders as listed on the police database are data that is also a matter of public record (via media). Further, some of the subjects are now deceased and some, due to mental health issues, were not deemed able to give informed consent. Finally, all the data are presented in a de-identified form, based on group findings. As a result, there is no chance that an individual can be identified in the publications. Ethics approval was obtained from Victoria Police, Monash University, Department of Human Services, the Office of Corrections Victoria, and the Department of Justice.

2.2 Design

The present studies use a retrospective, data linkage approach. An extensive and reliable register for offence particulars and offending history, which is maintained by Victoria Police, was used to employ a sequential series of clearly defined convicted homicide offences including murder, manslaughter, Not Guilty by Mental Impairment (Insanity) and murder-suicide over an eight year period—1997 to 2005. Cases such as manslaughter convictions arising from negligence or convictions arising from driving whilst intoxicated were excluded since they were non-intentional offences.

2.3 Data collection

Homicide offences were initially identified from the database maintained by the homicide squad of the Victoria Police. All suspicious deaths are recorded in this database whether or not an offender is later charged and/or convicted. The names, aliases and dates of birth of the individuals from this record were then cross-referenced with the police database Law Enforcement Assistance Package (LEAP), which records all convictions and court dispositions as well as criminal history and other contacts with police. LEAP data also includes whether the police know the individual has a mental disorder, however this information may have been ascertained (for example, the individual may have informed the police that he or she had a diagnosed mental disorder and this may or may not have actually been the case). In the event data were lacking or obscure, the relevant homicide detective was contacted for clarification. For example, if the relationship between the offender and victim was not known at the time

the relevant homicide offence was originally entered onto the LEAP system, the investigator may not have updated that entry when the relationship later did become known.

For each offender, 32 categorical and numerical characteristics were recorded on a coding sheet devised for that purpose. These categories included details of any prior offending, court disposition and so forth (Appendix I). For the categories of motive and instrumental/reactive/mixed, inter-rater reliability was determined by duplicating the methodology of others' previous research (Woodworth & Porter, 2002). The first author reviewed all cases and categorized the motive as financial gain, sexual attack, sadistic pleasure, argument, revenge and child killing. Revenge encompassed any offence by which the offender was deemed to have retaliated against any injustice, perceived or otherwise, including social, physical, financial or emotional insult. The author's categorisation of revenge assumes that the injury that evoked the revenge occurred some time previously as immediate or rapid retaliation would usually be placed in the argument category. Cases were classed as reactive, instrumental or a mixture of both responses. A quarter of the cases (108, 25%) were coded by a second rater who was blind to the ratings of the first author. Both raters together then reviewed the preceding ratings and a discrepancy was found between both reviews in four cases (96.3% agreement). These conflicting ratings were consequently resolved through discussion and consultation with supervisors. In the discussion of the degree of agreement by raters, it is important to note that not only was

there a high level of agreement, no identifiable pattern emerged regarding the original discrepancy.

Once all LEAP data had been obtained, names, aliases and dates of birth were cross referenced with the Department of Human Services' statewide public psychiatric register (RAPID). If a name and date of birth or an alias and date of birth were matched between LEAP and RAPID, mental health information was documented. For example, details regarding the number of days between the offender's last mental health contact and the offence were noted (Appendix II). RAPID records all contacts with the public mental health services including inpatients, community patients and one off assessments. Mental disorders are recorded according to the International Classification of Diseases (ICD-10). The thesis supervisors, a professor of psychology and a professor of psychiatry reviewed all mental health data. Once a link had been attempted, whether or not a match was found, names were removed from the data set and given a Unique Record (UR) number. All mental health data were coded onto a coding sheet (that had been designed for that purpose) for analysis.

Included in the definition of schizophrenia were schizophrenia, shizoaffective disorder and delusional disorder. Psychotic disorders included all the afore-mentioned plus depression with psychosis. The police data and the mental health data were combined and entered on SPSS and registered by their UR.

There is no possibility that there were any missing cases of homicide on the LEAP database. Regarding RAPID data, it is possible (but very unlikely) that an individual from the homicide sample failed to be

linked to an individual on RAPID due to a delay in registration (the study comprised of offenders between 1997-2005 and RAPID data was not sought until 2008) or overlooked due to a name change (all aliases and dates of birth were checked).

2.4 Comparison groups

A community comparison group was used to compare mental health data with the homicide group. This work was conducted by our research team within the Centre for Forensic behavioural Science (Short et al., in press). A random sample 0f 4830 (males 2392 [49.5%]) was drawn from the electoral rolls in 2007. In Victoria, voting is compulsory and over 93.6% of those over 18 years are registered on the electoral rolls (Victorian Electoral Commission, 2008). An identical methodology was used to establish the rates of mental disorder in the electoral roll sample as for establishing rates within the homicide group.

Likewise, an identical methodology was adopted to establish lifetime histories of prior convictions in a comparison group drawn from a separate random sample of 1022 people registered on the electoral roll; LEAP was utilized to ascertain their criminal histories.

To ascertain information about potential use or abuse of substances, a composite score was developed (KSA; Known Substance Abuse). First, if individual had obtained a diagnosis of substance abuse or dependence disorder, they were considered to have “known substance abuse”. Second, the LEAP database was searched and if individuals had a record of substance-reflected offences, they were considered to have KSA (e.g.,

possession or use of drugs, alcohol related offences such as drunk in a public place and driving in excess of alcohol breath content).

Homicide offenders with schizophrenia (n=38) were compared to homicide offenders without schizophrenia (n=397) and also compared to schizophrenia community comparisons (n=1022) and schizophrenia community comparisons without prior convictions (n=91). Similarly, criminal prior convictions were compared between homicide offenders with schizophrenia and no schizophrenia, the general community and a schizophrenia comparison group.

2.5 Approach to analysis

Analyses were conducted in Stata (version 10.0, StataCorp, Tx, 2007) and SPSS (version 17.0, SPSS Inc, 2007). Continuous data were compared using independent t-tests and categorical variables were cross tabulated using Chi Squared tests of Association. Odds Ratios (OR) and Relative Risk (RR) were calculated, using these cross tabulations to determine the magnitude and direction of comparisons of interest, with 95% confidence intervals (CI) of both ORs and RRs computed using the method described by Miettinen (Kirkwood, 2001).

CHAPTER 3: DIFFERENCES IN HOMICIDE CHARACTERISTICS

3.1 Preamble: Examining differences in homicide characteristics

There is a considerable body of literature examining links between serious offending and mental illness and nearly all of the broad, epidemiological studies have found a link between mental illness and serious offending and between homicide and psychotic illness specifically (see Taylor & Gunn, 1984; Fazel & Grann, 2006; Wallace et al.,1998). However, there has been considerably less literature examining additional characteristics of homicide offenders with schizophrenia, such as motive and victim selection, and whether or not these additional characteristics are significantly different from those homicide offenders without schizophrenia (see Cornell et al., 1996; Woodworth & Porter, 2002). This study found that those with a psychotic illness are more likely to kill a family member and that their offences are more likely to have been instrumental in nature, significantly more likely to kill in revenge, than those homicide offenders without a psychotic illness**.**

Monash University

Declaration for Thesis Chapter 3

In the case of Chapter 3, the nature and extent of my contribution to the work was the following:

Name	% contribution	Nature of contribution
Ms Debra Bennett	60	Literature review, project design, data collection and analysis, writing of paper.
Professor James Ogloff	20	Review of paper drafts and general supervisory input.
Professor Paul Mullen	10	Review of paper drafts and general supervisory input.
Dr. Stuart Thomas	10	Content analysis

Declaration by co-authors

The undersigned hereby certify that:

(1) the above declaration correctly reflects the nature and extent of the candidate's contribution to this work, and the nature of the contribution of each of the co-authors.
(2) they meet the criteria for authorship in that they have participated in the conception, execution, or interpretation, of at least that part of the publication in their field of expertise;
(3) they take public responsibility for their part of the publication, except for the responsible author who accepts overall responsibility for the publication;
(4) there are no other authors of the publication according to these criteria;
(5) potential conflicts of interest have been disclosed to (a) granting bodies, (b) the editor or publisher of journals or other publications, and (c) the head of the responsible academic unit; and
(6) the original data are stored at the following location(s) and will be held for at least five years from the date indicated below:
Crime Department, Victoria Police Headquarters

Date

Signature 1		
Signature 2		
Signature 3		
Signature 4		

3.2 Paper 1: The characteristics of homicides by psychotic and non psychotic offenders: Motives for offending and gender differences.

Bennett, D.J., Ogloff, J.R.P., Mullen, P.E., & Thomas, S. (2009). *The characteristics of homicides by psychotic and non psychotic offenders: Motives for offending and gender differences.* Manuscript submitted for publication.

The characteristics of homicides by psychotic and non psychotic offenders: Motives for offending and gender differences

Bennett, D.J., Ogloff, J.R.P, Mullen, P.E. & Thomas, S.D.M.

Word count of text: 4531

Key words: homicide, psychosis, mental illness

Background
While a relationship between mental illness and offending/violence has been found to exist, less attention has been paid to characteristics of homicide offenders with psychosis.

Aims
To examine whether differences exist in homicide characteristics, specifically motivation, reactive/instrumental offence behaviours and victim selection between homicide offenders with and without psychosis.

Method
This data linkage study examined the population of homicide offenders between 1997—2005 (N=435) in Victoria, Australia. The prevalence of mental illness was ascertained and compared to rates in the general community. Apparent motive for homicide was allocated to one of six classifications and assignation of reactive *versus* planned offence categories and victim selection were determined by review of case material.

Results
Of the 435 offenders, 44 (10.1%) had a diagnosis of psychosis. Homicide offenders were 7.54 (95% CI 5.35-10.63) times more likely than comparisons to have psychosis. Homicide offenders with psychosis were 2.58 (95% CI 1.36 – 4.89) times more likely to kill a relative and 2.41 (95% CI 1.28-4.51) times more likely to be motivated by revenge than those without psychosis.

Conclusions
A disproportionate number of homicide offenders had a psychotic illness and they were more likely to be motivated by revenge and to plan their offences than non psychotic perpetrators. Implications for mental health policy and practice are discussed in light of the findings.

Declaration of interest None

While the notion that there is a link between mental disorder and violent behaviour has attracted vast research literature, the precise relationship between mental illness and such behaviour remains actively debated, largely unknown and regarded as an extremely difficult endeavour.[1] Central to the undertaking of a proper understanding of violence for this group, and a specific understanding of the means for its control, is a requirement to explore the variety and complexity of contributing factors. Although there are several studies in this area, very few have specifically examined patterns and characteristics in homicide offenders who have a psychotic illness. More often than not, researchers have examined the relationship between mental illness and general forms of violent behaviour rather than mental illness and homicide *per se.* [2-6]

Of all the serious mental disorders, psychotic illness has been most strongly linked to increased risk of serious offending.[7, 8] While limited research has further delineated the risk of serious offending among those with various psychotic illnesses, for example schizophrenia, schizo-affective illness and organic brain syndromes,[3,9] most research has focused on schizophrenia *per se*. Although most violence in the community is not attributable to schizophrenia, and the vast majority of individuals with schizophrenia do not commit violence, there is now a body of evidence indicating homicide offenders are more likely to have histories of mental disorder, in particular schizophrenic syndromes, than the general population.[10-13]

Few Australian studies have examined the prevalence of mental disorder among homicide or serious violence offenders with a focus on psychotic illness,[13, 14] instead most research has examined general mental illness broadly. The Australian Institute of Criminology (AIC) has been monitoring homicides in Australia since 1989 and their findings are published in the National Homicide Monitoring Program (NHMP) reviews. The NHMP uses two main sources of data - police and coronial records. Mental health information for offenders is generally garnered from police reports.[15] Mouzos'[16] review of NHMP findings found a total of 2821 homicides were recorded in Australia over a nine year period (1 July 1989 – 30 June 1998). Approximately 4.4% of the 3314 offenders (some incidents involved more than one offender) were recorded as having a mental disorder. The presence of a mental disorder immediately before or at the time of the offence was ascertained from information supplied in the police reports that may or may not have been based on any official medical diagnosis. Mouzos[16] concluded that since psychiatric problems occurred in at least 18% of the 10600 Australians in the 1997 National Survey of Mental Health and Well Being of Adults (SMHWB),[17] the prevalence of mental disorder among homicide offenders is significantly less than the general population. The mental disorders encompassed in the SMHWB included anxiety disorders including agoraphobia, affective disorders, alcohol use disorders and drug disorders; but not psychotic disorders. Given the methodological limitations of the study and, in particular, the ascertainment of possible mental illness among homicide offenders based

on police records and the lack of a comparison group, further research is warranted.

A limited literature exists in how violent and homicidal acts differ between mentally disordered and non disordered offenders, including victim/offender relationships. Violent acts committed by offenders with a major mental disorder are more likely to occur in a residence rather than a public place[18, 19] and, accordingly, between 50% and 60% of the victims are family members.[19] Simpson and colleagues,[20] in a retrospective study of homicide, found that all but two of the victims killed by a person with a mental illness as deemed by the courts in New Zealand during a 30 year period (n = 93), were killed by people they knew. In a 10 year study of homicides in New South Wales, Australia, Nielssen and colleagues[14] found that at least 88 people charged with 93 homicides were experiencing the acute phase of psychotic illness at the time of their offences and that high rates of drug misuse were implicated. They found that only nine of the victims were strangers and that, generally, delusional beliefs had led those offenders to believe they were in danger.

Motivation

Other than studies that have sought to examine the role of delusions in motivating psychotic homicide offenders[14], limited attention has been paid to whether motivation for committing homicide differs between psychotic and non-psychotic offenders. Even the now well established, though somewhat controversial, distinctions between either reactive and impulsive

behaviour or planned and instrumental behaviour have only been systematically studied in terms of psychopathy and not psychosis.[21-23] Moreover, any differences in motive for offending and reactive/planned offence behaviour between genders for the psychotic/non-psychotic groups has been given little consideration. Although there has been some controversy regarding the validity of ascribing motivations to offenders, researchers have recently operationalised these terms in a way that has resulted in a reliable and valid coding scheme. The instrumental classification is commonly characterised by "aggression for goal oriented purposes such as robbery"[21] (p. 783). In contrast, violence is categorised as reactive aggression when the behaviour is deemed to be in response to provocation, for example, a spontaneous, unplanned fight that has resulted from a road rage incident. The usual view is that there are three basic differences between the sub-types: the primary goal of the violence, whether or not anger is present and finally, whether or not there is evidence of planning.[23, 24]

Implicit in the assumptions about delusionally driven homicide is that it arises on the basis of pre-existing beliefs but whether this results in potentially instrumental violence has not been systematically examined. Against the above background, the aim of this study was to investigate the motivations, victim choice and instrumental/reactive actions in psychotic and non psychotic homicide offenders.

Method

Samples

A sequential series of all homicides in the State of Victoria, Australia, between 1997-2005 were identified using the police's Law Enforcement Assistance Package (LEAP). This database identified information on all contacts with the Victoria police, and of relevance to this study, all reported homicides, subsequent charges, court decisions and disposals. If the data available were unclear or undetermined the relevant police investigator was contacted personally. For example, when a homicide case was originally entered onto the LEAP system, the existence of a co-offender may not have been known; however, this information may have subsequently become apparent but investigators had failed to update the database.

Included were all murder, manslaughter and infanticide convictions together with findings of legal insanity (mental impairment) plus all cases in which a coronial inquiry had deemed were a murder/suicide. Convictions arising from dangerous or intoxicated driving and negligent manslaughter were excluded. To determine those offenders with a known substance abuse history, all police convictions for alcohol or drug related charges as well as psychiatric data that included any known diagnosis of mental illness or substance abuse, were collected.

Homicide offence history

LEAP and the homicide squad database provided the names, aliases and dates of birth of the subjects and 32 variables, concerning their offending backgrounds and homicide offences. These variables included the manner of death, relationship (if any) of the offender to the victim and the details of any convicted co-offender. Also recorded were the subjects' offence histories, including age at first conviction, and number and nature of prior offending. Only criminal offence history for the State of Victoria was recorded.

Motivation and Reactive *versus* Instrumental offending

The first author reviewed the narrative summary for each case and documented the offender's motive (usually acknowledged by the offender during the police interview but may have subsequently become apparent even if the offender had denied culpability). Each homicide offence was further catalogued as planned or as one that appeared to be more reactive (i.e., an impulsive reaction to a conflict or perceived threat).

The methodology employed in this study to describe the primary motivation for the homicides was based on that utilized by Woodworth and Porter.[22] Scoring criteria and protocols were established by the research team. The first author reviewed the characteristics all the homicide files and coded them into categories of financial gain, sexual attack, sadistic pleasure, argument, revenge and child killing and also whether or not the offence was Reactive, Instrumental or Mixed Reactive-

Instrumental/Instrumental-Reactive. Revenge was employed to designate a range of states that share the wish to harm someone who is believed to have harmed them, be that by physical, financial, social, or emotional means. The authors' categorisation of revenge assumes that the injury that evoked the revenge occurred some time previously as immediate or rapid retaliation would usually be placed in the argument category.

Inter-rater reliability was examined by having a second rater independently review a random sample of 108 (25%) cases which were also coded by the first author. All coding was completed prior to accessing the mental health data. Both raters together subsequently reviewed the ratings and a discrepancy was found in four cases (96.3% agreement). The inconsistencies were resolved through discussion and consultation with supervisors.

Mental health contact

Psychiatric information was gathered from the Victorian Psychiatric Case Register (VPCR), a statewide register of contacts with public mental health system, which has existed in various forms for over forty years.[10] This register provides excellent data on psychotic disorders though is less comprehensive for non psychotic conditions.[25] This is because most people with high prevalence disorders are treated by private practitioners (general practitioners, psychiatrists, psychologists) and therefore do not get registered in the public mental health system database. By contrast, virtually everyone with schizophrenia is seen in the public mental health

system. Based on the VPCR data, the cohort of homicide offenders was divided into groups of psychotic or non psychotic. Included in the psychotic group were all individuals who had received a diagnosis and treatment for schizophrenia, schizoaffective disorders, delusional disorders and psychotic affective disorders. The full details of ascertainment are available in prior publications.[10, 13, 25, 26]

Population Comparison Group

Mental health data in the homicide group was compared to a community comparison group.[25] A random sample of 4830 (males 2392 [49.5%]) was drawn from the electoral rolls in 2007. In Victoria, voting is compulsory and over 93.6% of those over 18 years are registered on the electoral rolls.[27] An identical methodology was used to establish the rates of mental disorder in the electoral roll sample as for establishing rates within the homicide group.

Likewise, an identical methodology was adopted to establish lifetime histories of prior convictions in a comparison group drawn from a separate random sample of 1022 people registered on the electoral roll; LEAP was employed to ascertain their criminal histories.

Data Linkage

Personal identifiers from LEAP were matched with recorded entries on the VPCR. When a data match was made, information was collected on 26 variables including the dates and nature of the contacts, and any diagnoses.

Ethical issues

Ethical approval

Ethical approval for this study was obtained from the Ethics Committees of the Victoria Police, Monash University, and the Department of Human Services.

Results

Homicide Offence

A total of 569 homicides were investigated in Victoria for the period from 1997-2005 (including multiple victims of the one offender and multiple victims of multiple offenders acting in concert). A total of 435 offenders were subsequently convicted of murder (n=197), manslaughter (n=159), infanticide (n=22), found not guilty because of mental impairment (n=26) or were deemed murder/suicide offenders (n=24). Sixty-four homicide offences remained unsolved because an offender had not been charged or was charged but not convicted.

The cohort included 380 (87.4%) male offenders, 276 (72.6%) of whom were convicted as sole perpetrators, and 104 (27.3%) of whom committed their offence with a co-offender. Fifty-five (12.6%) women were convicted, 40 (72.7%) of whom committed their offences alone, 11 (20%) of whom committed their offence with a male, and four (7%) who offended with another female.

Age of Offenders at Index Offence

The men's ages ranged from 17-84 years (mean 34.5 years, s.d.=12.44). There was no significant difference on age for those men who committed homicide alone as compared to those who acted in concert with one or more accomplices. The women's ages ranged from 18-80 years (mean 38 years, s.d.=14.15). However, those women who committed their offences with an accomplice were significantly younger (mean 27.8 years, s.d.=8.97) than those who did not (mean 42 years s.d.=13.84) t (53)=-3.69, two-tailed p<0.001). Offenders with a psychotic disorder had a mean age of 36.9 years (s.d.= 11.24) compared to the non psychotic group mean age of 34.8 years (s.d.= 12.84) (p=0.299). There was no difference in age at index offence for males with psychosis, mean of 34.8 years (s.d.=0.66), compared to those without a psychotic illness, mean of 34.5 years (s.d.=12.6). There was no difference in age for females between the psychotic group (mean 44.0, s.d.=10.7) and non-psychotic group (mean 37.0, s.d.=14.5) (p=0.157).

Prior Offending

Homicide offenders, more frequently than the general population comparisons, had prior criminal convictions (280 (64.4%) *v*. 98 (9.6%) OR 17.03, CI 13.19—21.98 p<0.001) and violent convictions in particular (179 (41.1%) *v*. 29 (2.84%) OR 23.94, 95% CI 17.43—32.89, p<0.001). The chances of having been convicted previously of any offence, including a violent offence, did not differ between homicide offenders with or without a psychotic disorder (28 (63.6%) *v*. 252 (64.6%) p=0.898).

Characteristics of the Homicide

Reactive *versus* Planned offences

A review of case material prepared by the investigators revealed that 158 (36.3%) of the homicides were predominantly reactive or impulsive. In 236 (54.3%) cases there were clear elements of planning and a pre-existing intention to harm. In 41 (9.4%) cases there was a mixture of both reactivity and planning/intention. Homicide offenders with a psychotic illness were significantly more likely to have had some pre-existing intention and a plan to harm the victim (32 (72.7 %) *v.* 204 (52.2%), OR 2.44 95% CI 1.22-4.89, *p*=0.009) and less likely for it to have been a spur of the moment reaction than offenders without psychosis (OR=0.48, 95% CI 0.23 – 1.01, p=0.048) (Table 1).

Motivation

The motives for the homicides, which emerged from a review of the material available, were classified under a number of broad headings (Table 2). Financial gain was rarely a motive for homicide among the psychotic disorder offenders, and no psychotic offenders committed the homicide as part of a sexual attack. Offenders with psychotic illness were more likely to be motivated by revenge than other offenders (23 (52.3%) *v*. 122 (31.2 %) OR 2.41, 95% CI 1.28-4.51, *p*=0.005). Psychotically motivated offences, or offences driven by hallucinatory experience or persecutory delusion, were reflected in NGMI dispositions. The motive category for this group was assigned according to the explanation the

individual gave at police interview or the motivation presented to the court by way of police evidence (whether or not that rationale incorporated a hallucinatory experience, etcetera, at the time of the offence).

While drug and/or alcohol intoxication at the time of the homicide offence may have contributed to an offender's decreased inhibition to commit the offence (whether actively psychotic, diagnosed with a psychotic disorder or non-disordered offender) motive categories were allocated according to the rationale given at police interview or the motivation presented to the court by way of police evidence. It is likely that the excess of planned and revenge homicides in the psychotic group is a reflection of psychotic symptoms or associated experiences whether those symptoms were active at the time of the homicide or not.

Victims

Strangers were less likely to be found among the victims of homicides committed by those with psychosis (4 (9.1%) *v*. 57 (14.6%) OR 0.59 (95% CI 0.20—1.70), p=0.320) and relatives more frequently (27 (61.4%) *v*. 149 (38.1%) OR 2.58 (95% CI 1.36-4.89), p=0.003). This difference remained prominent when partners were removed from the relative category (14 (31.8%) *v*. 68 (17.4%) OR 2.22, (95% CI 1.95-4.34), p=0.020) (See Table 3). All of the four women who committed murder-suicide also killed their own child. One did not have any previous public mental health contact while the other three had prior contact with services but received no diagnosis. Among the nine women who killed their own children and were subsequently charged with the offence, two had no prior contact with

mental health services, three had contact but no diagnosis, only one was known to have had treatment for psychosis, another two for adjustment disorder and one woman was diagnosed with mild depressive disorder.

Among the men, 16 had killed their own children. Of those, 11 had no contact with mental health services and of the five who had contact, two had received a diagnosis—one of depressive episode and the other accentuation of personality traits. Three of those offenders committed murder-suicide, none of whom had contact with mental health services. A total of 20 men committed murder-suicide, 19 of whom had no contact with mental health services. The one man who had contact had not received a diagnosis.

Mental Disorder

Diagnoses

If the police learn that an individual may have a mental illness—however ascertained—they can enter that information into the LEAP database. For this sample, only thirteen offenders (3%) were recorded on the LEAP database by police as having a history or current diagnosis of a mental illness (that may or may not have been based on any formal diagnosis). Of course, the police have no access to the public mental health database (the VPCR).

By contrast to the data available on the LEAP database, the VPCR database revealed that 92 (21%) men had contact with public mental health

services prior to the offence. Twenty-seven (29%) of those had contact but had not had a diagnosis recorded. The VPCR database registered sixty-five (17.1%) of the male offenders as having received a diagnosis of some kind. Schizophrenia had been diagnosed in 30 (7.9%) men and depression with psychosis in four (1.1%), thus 34 (8.9%) received a diagnosis of a psychotic illness. Other diagnoses for male offenders were depression in 11 (2.9%), a primary diagnosis of a personality disorder in six (1.6%), an anxiety disorder in five (1.3%), only three (.8%) men had a substance abuse diagnosis, two (.5%) had a post traumatic stress disorder and finally, three (.8%) had a diagnosis of malingering.

Thirty-five (64%) women had contact with the mental health services prior to the offence of whom 12 (27%) had not received a recorded diagnosis. Nine (16%) were diagnosed with schizophrenia either pre or post offence. Seven (14.6%) women had received that diagnosis before the offence, and two after—one woman five months after and the other five years after the killing. Given the passage of time between the offence and diagnosis for the latter woman, she is not considered to fall within the schizophrenia grouping. Two women (3.6%) received a diagnosis of depression with psychosis prior to their respective offences. Thus, 10 (18.2%) women received a diagnosis of a psychotic illness. Other diagnoses for female offenders include seven (12.7%) women with depression, three (5.5%) with anxiety disorders, one (1.8%) with a brain disorder, one (1.8%) with a personality disorder and one (1.8%) with a childhood conduct disorder. None had a substance abuse disorder recorded (see Table 4). The chance of

finding psychosis among combined gender homicide offenders was 7.54 times more likely (95% CI 5.63-10.63) than among comparisons (44/435 vs. 71/4830) (see Table 5).

Discussion

Psychosis was over seven times more commonly found in the homicide offender group as compared to the general population. Of note, those offenders with a psychotic disorder were two and a half times more likely to kill a relative and more than twice as likely to have been motivated by revenge as compared to homicide offenders without this diagnosis.

This study utilized an entire population of homicide offenders over an eight-year period in one jurisdiction and included those who committed murder—suicide, a group often ignored. The homicide characteristics were collected from police records and although this data source may often be undermined by incomplete entries, the gravity of homicide offences ensures the related data are more complete and accurate than what may be recorded for lesser crimes. Importantly, all equivocal information was resolved by interviewing the investigating police officer. Further, the mental health data were collected from a register that is virtually complete for psychotic disorders with 1.5% (1.1% for males, 0.4% for females) of the population being registered with a psychotic illness. In addition, both a professor of psychology and a professor of psychiatry evaluated all diagnoses independently. Identical matching protocols were utilized to determine mental health diagnoses within the general population, drawing

on data from a study of just under 5,000 people drawn from the electoral roll for Victoria that were linked to the VPCR.[25]

Rates of psychosis were considerably higher for homicide offenders than some international studies[7, 20] but comparable to others.[8, 28] However, the range of methods employed to ascertain psychosis in both the homicide offender group and the general population often reflects methodological limitations—examining court records and verdicts as well as clinicians' files have all been alternative, limited sources of data collection.

The discrepancy in rates of mental illness between this study and other Australian findings drawn from the NHMP study may be explained in part because Mouzos'[16] comparison figures for mental disorder in the general population employ a different range of major mental disorders (anxiety disorders, affective disorders and substance abuse disorders) that does not include psychotic disorders. Also, identification of mental illness among the homicide offenders was ascertained solely from police records. As non-clinicians collected the data, cases of mental disorder are likely to have been missed and the contribution of people with mental disorder to homicide may be underestimated. Indeed, the current study revealed that only 13 (3%) offenders were recorded on the LEAP database as having a mental illness. If these data were accepted (without linking with the public mental health database), the apparent rate of mental disorder among homicide offenders would have been significantly under-estimated. This,

therefore, adds to the methodological sophistication adopted in this study and the subsequent accuracy of prevalence estimates reported.

Some reports have argued that there are also limitations in attributing motive to an offence—a difficult task because motive can be complex and varied.[15] The NHMP[15] records that around 30% of homicides committed in Australia during 2006-2007 were apparently without motive. This figure is extraordinarily high and a likely explanation is that the preliminary police reports may have recorded "no apparent motive" because initially that appeared to be the case. However, it is also probable that the investigators have not updated the relevant database if a motive subsequently became apparent or, indeed, if the offenders were convicted and matters were identified during the trial, they may not have been recorded. In the present study, as noted, the investigators were interviewed to determine motivation if it was not recorded in the police reports. Future research in this area needs to follow up "no apparent motive" homicides with further enquiries. If it was the case that 30% of homicides actually concluded as "no apparent motive" on prosecution briefs of evidence, investigations would not have anywhere near the clean up rate that they currently enjoy.

This study found that those offenders with a psychotic disorder were significantly more likely to plan their homicide offences and to kill in revenge than non psychotic offenders. Often, though, the planning or revenge was based on irrational thinking. One woman with a diagnosed psychotic disorder believed her mother showed favoritism for the

offender's siblings and that this warranted her mother's death. On the day that she intended to murder her mother and prior to the actual offence, she purchased a rail ticket for a destination far from her home intending to produce the ticket as alibi evidence to investigators. Another offender with a psychotic disorder killed his friend, believing the victim had spoken badly of him to mutual acquaintances. He lay in wait for the victim and killed him in a surprise attack. A possible explanation for revenge to be a widely held motivation in the psychotic group is that paranoia associated with that illness might feed the desire for revenge.

Determining motivation is a significant step in attributing an instrumental/reactive category to a homicide. Numerous other researchers have employed various analogous terms, such as 'affective' and 'predatory', to describe aggressive behaviour in the context of measures of an individual's psychopathy.[29] Semantics aside, the concepts and findings are analogous; there is extensive agreement in psychiatric literature that characteristics of violence can be reliably distinguished and that such distinction is a necessary component of deciding upon treatment options and an individual's future risk of violence. However, confounding factors are apparent: often violent offenders have histories of both types of aggression,[21] the influence of drugs and/or alcohol may not be controlled for[24] and further, institution records may be incomplete.

Certainly, it is unlikely that investigators will accurately determine the precise motive and emotional state of every homicide offender and thus by

necessary extension it is unlikely that researchers will accurately determine every offence as instrumental or reactive. However, as demonstrated in the present study and many others, it is possible to determine motivation in most homicide cases.[22]

Finally, as for previous research,[18] this study suggests that those offenders with a psychotic illness are more likely to kill a relative than the non psychotic group. This is not surprising given that many people with a psychotic disorder are likely to be socially isolated and dependant on family for their care and therefore, as for other violence committed by those with schizophrenia, their victims are more likely to be closer to home.

Limitations

It is possible, but unlikely, that homicide offenders had sought private mental health care for a psychotic disorder or other mental illness prior to their index offence and thus were not registered on the public mental health register. If that were so, the rate of psychotic illness obtained may have been under estimated in this study. It is certainly the case that the rates of high prevalence disorders identified (e.g. depression) are under estimates of the actual prevalence of the disorders.

Clinical and research implications

Targeted preventions

In light of the above discussion, people with a psychotic disorder are at significantly higher risk of committing homicide than the general population. It appears that for this group, the perception of having been wronged in some way is a potential risk marker for planning and committing a serious offence in the context of revenge and this could provide some guidance in the development of targeted preventions, policies and initiatives. Further education for mental health professionals is necessary regarding instances of clients with a psychotic disorder reporting that they are fearful of family members or reporting a desire for revenge for a wrong-doing against them (perceived or otherwise). This sub-group of clients with psychosis requires the mental health practitioner to undertake proactive intervention and treatment.

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Table 1 – Nature of the Offence

	Psychotic Disorder (n= 44)	**Non Psychotic Disorder (n= 391)**	**OR**	**95% Confidence Interval**	***p***
Impulsive (Reactive)	10 (22.7 %)	148 (37.9 %)	0.48	0.23 – 1.01	*p*=0.048
Planned (Instrumental)	32 (72.7 %)	204 (52.2 %)	2.44	1.22 – 4.89	*p*=0.009
Mixture Planned Impulsive	2 (4.5 %)	39 (10 %)	0.43	0.10 – 1.84	*p*=0.242

Table 2 – Apparent Motivation

	Psychotic Disorder (n=44)	**Non Psychotic Disorder (n= 391)**	**OR**	**95% Confidence Interval**	***p***
Financial gain	1 (2.3 %)	59 (15.1 %)	0.13	0.02 – 0.72	*p*=0.019
Sexual attack	0	9 (2.3 %)	-	-	*p*=0.309
Sadistic pleasure	1 (2.3 %)	8 (2.0 %)	1.11	0.14 – 8.58	*p*=0.920
Argument	17 (39.5 %)	168 (43.0 %)	0.84	0.45 – 1.56	*p*=0.582
Revenge	23 (52.3 %)	122 (31.2 %)	2.41	1.28 – 4.51	*p*=0.005
Child killing	1 (2.3%)	24 (6.1 %)	0.35	0.05 – 2.52	*p*=0.296

Table 3 – The Victims

	Psychotic Disorder (n= 44)	**Non Psychotic Disorder (n= 391)**	**OR**	**95% Confidence Interval**	***p***
Stranger	4 (9.1 %)	57 (14.6 %)	0.59	0.20 – 1.70	*p*=0.320
Partner	13 (29.5 %)	81 (20.7 %)	1.61	0.80 – 3.21	*p*= 0.177
Child	1 (2.3 %)	24 (6.1 %)	0.36	0.05 – 3.76	*p*=0.308
Any Relative	27 (61.4 %)	149 (38.1 %)	2.58	1.36 – 4.89	*p*=0.003
Killed Relative not Spouse	14 (31.8 %)	68 (17.4 %)	2.22	1.95 – 4.34	*p*=0.020
Acquaintance	13 (29.5 %)	185 (47.3 %)	0.47	0.23 – 0.92	*p*=0.025

Table 4 – Comparison of pre-offence diagnoses of mental disorders between genders

	Males (n=380)	**Females (n=55)**
Any Diagnosis	65 (17.1%)	23 (41.8%)
Schizophrenia	30 (7.9%)	8 (14.5%)
Depression	11 (2.9%)	7 (12.7%)
Depression + psychosis	4 (1.1%)	2 (3.6%)
Anxiety	5 (1.3%)	3 (5.5%)
Personality disorder	6 (1.6%)	1 (1.8%)
Substance abuse	3 (.8%)	-
Post traumatic stress disorder	2 (.5%)	-
Malingering	3 (.8%)	-
Childhood conduct disorder	-	1 (1.8%)
Brain disorder	-	1 (1.8%)

Table 5 – Comparisons of Diagnoses to the General Population

	Males			**Females**			**Total**		
	Homicides (*n*=380)	**General population (*n*=2392)**	**OR (95% CI)**	**Homicides (*n*=55)**	**General population (*n*=2438)**	**OR (95% CI)**	**Homicides (N=435)**	**General population (*n*=4830)**	**OR (95% CI)**
Psychosis	34 (8.9%)	42 (1.8%)	5.50 (3.59 – 8.42)	10 (18.2%)	29 (1.2%)	18.46 (10.30 – 33.07)	44 (10.1%)	71 (1.5%)	7.54 (5.35 – 10.63)
Any Mental Health contact	165 (43.4%)	279 (11.7%)	5.81 (4.62 – 7.30)	39 (70.9%)	241 (9.9%)	22.22 (14.38 – 34.30)	204 (46.9%)	520 (10.8%)	7.32 (6.12 – 8.76)

CHAPTER 4: FEMALE HOMICIDE OFFENDERS

4.1 Preamble: Female Homicide Offenders

There is now a great deal of support for the notion that there are sub-groups of people with a mental illness that are more at risk of committing a violent offence than others with a mental illness (see Monahan et al., 2001; Nielssen, Westmore, Large & Hayes, 2007). By far the greatest attention has been given to male or mixed gender homicide offenders; fewer studies have examined this association in women. It is generally supported that those with a mental illness, specifically a psychotic illness, are more at risk of committing a violent offence than those without such an illness, and that this risk is increased for women (see Eronen, 1995; Schanda et al., 2004). Also, there has been some support for the view that a large percentage of homicide offenders with a psychotic illness commit their offences in the period of first episode (Nielssen, et al., 2007). Other characteristics of female homicide offenders remain largely unexplored. This study aimed to link a police data base of female homicide offence characteristics with the state mental health data base and to examine such characteristics as rate of psychosis, the offence date relative to the offenders' onset time of illness, history of prior criminal convictions and motivation for offending. The findings revealed a significantly higher rate of psychotic illness among female homicide offenders than both the general population and male homicide offenders. However, rather than commit their offences in the first episode of psychosis, nearly all of the women had protracted mental health histories.

Monash University

Declaration for Thesis Chapter 4

In the case of Chapter 4, the nature and extent of my contribution to the work was the following:

Name	% contribution	Nature of contribution
Ms Debra Bennett	60	Literature review, project design, data collection and analysis, writing of paper.
Professor James Ogloff	20	Review of paper drafts and general supervisory input.
Professor Paul Mullen	10	Review of paper drafts and general supervisory input.
Dr. Stuart Thomas	10	Content analysis

Declaration by co-authors

The undersigned hereby certify that:

(1) the above declaration correctly reflects the nature and extent of the candidate's contribution to this work, and the nature of the contribution of each of the co-authors.
(2) they meet the criteria for authorship in that they have participated in the conception, execution, or interpretation, of at least that part of the publication in their field of expertise;
(3) they take public responsibility for their part of the publication, except for the responsible author who accepts overall responsibility for the publication;
(4) there are no other authors of the publication according to these criteria;
(5) potential conflicts of interest have been disclosed to (a) granting bodies, (b) the editor or publisher of journals or other publications, and (c) the head of the responsible academic unit; and
(6) the original data are stored at the following location(s) and will be held for at least five years from the date indicated below:
Crime Department, Victoria Police Headquarters

		Date
Signature 1		
Signature 2		
Signature 3		
Signature 4		

4.2 Paper 2: A study of psychotic disorders among female homicide offenders.

Bennett, D.J., Ogloff, J.R.P., Mullen, P.E., & Thomas, S. (in press). A study of psychotic disorders among female homicide offenders. *Psychology, Crime & Law.*

RESEARCH ARTICLE

A study of psychotic disorders among female homicide offenders

Running title: Female homicide offenders

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Abstract

Though a considerable body of evidence has now accumulated about the link between psychotic illness and violent behaviour, fewer studies address this association in women. This data linkage study examined an entire population of female homicide offenders (N=55) in Victoria, Australia, over an eight-year period. Offence variables such as prior offending history and motivation for the offence were established by using police databases. The data were subsequently linked to a state-wide public mental health database and histories of prior mental health contact and relevant diagnoses, particularly psychosis, were obtained. Findings were compared to a comparison group from the general population. Of the 55 offenders, 11 (20%) had been diagnosed with a psychotic illness, 9 prior to the offence and 2 after (9 [16%] with schizophrenia). The chance of finding psychosis among female homicide offenders was 20.77 times higher than among comparisons, while for schizophrenia the odds ratio was 43.17. Most of the mentally ill homicide offenders had a relatively long prior history of mental illness. The prevalence of known substance abuse did not differ for female homicide offenders with or without a psychotic illness but was higher than for controls.

Key words: female, homicide, psychosis, mental illness, substance abuse

A study of psychotic disorders among female homicide offenders

The existing literature on the relationship between homicidal behaviour and psychotic disorders has focussed on males with little attention to females. In part, this is a product of the relative infrequency of homicidal behaviour in women. The two existing studies with large enough samples of female homicides for meaningful analysis reported a significant association between having major mental disorder and homicidal behaviour among the women (Eronen, 1995; Schanda et al., 2004). In addition, the studies found higher rates of mental disorder among female than male homicide perpetrators. Both of these studies used entire populations of homicide offenders over extensive periods and relied on psychiatric examinations of offenders' pre-trial and court dispositions of insanity. However, they both compared rates of schizophrenia to the general population using US data because they were unable to determine sufficient local statistics. Both studies excluded murder-suicide offenders. Finally, they did not report further characteristics of the homicide offenders, such as motivation, victim choice, etc.

Schanda and colleagues (2004) suggested the disparity between men and women might reflect a greater leniency in applying mental state defences to women rather than a real difference. Others have agreed that biases in the criminal justice system, in terms of more readily applying a psychiatric label to violent female offenders, may reflect a propensity to define women as 'mad' rather than 'bad' (Lamb & Grant, 1983; Teplin, 1984). A study of arrest decisions found that, at least at the arrest stage, police officers tend to be more lenient with female offenders (Visher,

1983). Although there is a paucity of literature on the subject, 'chivalry' may extend to determination of sentencing.

Higher rates of schizophrenic and other psychosis have been reported for females compared to males in studies of violent offending in general (Brennan, Mednick, Sarnoff & Hodgins, 2000; Coid et al., 2006; Wallace, Mullen & Burgess, 2004).

Studying homicide offenders has advantages. In most jurisdictions the clear up rates in homicide exceed 80%. Cases are not lost by diversion, or the discretion not to prosecute, which contrasts to most offences where only a highly selected subsection of offenders make it all the way from committing the crime to trial and conviction. Nevertheless, homicide is uncommon, particularly in women, and the offences included under homicide vary with jurisdiction and may include, for example, causing death by dangerous or intoxicated driving, and fatalities from breaches of work safety regulations. Studies sometimes fail to clarify the inclusion criteria for their homicide cohort other than by the legal outcome (Taylor & Gunn, 1999). Another problem is that homicide offenders who commit suicide at the time are often ignored (Eronen, 1995; Schanda et al., 2004; Taylor & Gunn, 1999).

Those accused of homicide offences, unlike most other offenders, are often subjected to psychiatric evaluation prior to trial. Researchers often employ these evaluations as the major, or sole, information base for the ascertainment of mental disorder (Eronen, 1995; Nielssen, Westmore, Large & Hayes, 2007; Schanda et al., 2004). Such evaluations are, however, subject to a range of complicating and sometimes confounding

influences given the fate of the accused may well depend on the outcome. Even in the best of services providing court evaluations, the objectivity both of the information and its interpretation may be influenced by the context. The use of court decisions and disposals as the primary method of ascertaining mental disorder can therefore be problematic.

Further, the methods used to establish rates of psychosis and or violent behaviour in a control group often result in flawed data. Studies of the association between mental disorders and violent offending nearly all use comparison figures for mental disorder and/or offending from the general population (even from different countries) which have been generated by entirely different methods to those employed for the cases, or they fail to compare rates of mental illness in the general population entirely (Fazel & Grann, 2004; Large, Smith, Swinson, Shaw & Nielssen, 2008). The rates of violent offending and/or psychosis in the general population are often calculated by dividing the known number of relevant offences or disorders by the base population, with or without age restrictions (Klassen & O'Connor, 1988; Monahan et al., 2001). This produces an estimate with no missing cases, other than from errors in census data or identification of disorders and violent offending. Research has often linked the presence of psychosis and violent offending by widely differing methodologies; the use of court verdicts, court reports, record searches and self report (Douglas & Ogloff, 2003). Thus the ascertainment of a link between psychosis and offending is usually less complete than the ascertainment in comparison groups.

The role of substance abuse in explaining away, or mediating, violent behaviour in psychotic states has taken centre stage in the current literature (Monahan et al., 2001). The ascertainment of substance abuse in existing studies varies in its likely scope from the broadly defined and meticulously examined to a dependence on clinicians' records of comorbid conditions. Rates in comparison groups are equally variable and not always based on identical methodologies (Wallace et al., 2004).

Some studies have reported homicides occur significantly more often in the first psychotic episode (Meehan et al., 2006; Nielssen, Westmore, Large & Hayes, 2007), however, other studies are equivocal (Fazel & Grann, 2006; Laajasalo & Häkkänen, 2006). "First episode psychosis" is widely regarded to be that period of time between the onset of the illness and the period of first remission, but there is no clear definition within the existing literature. The retrospective evaluation of whether a patient is in a first or subsequent episode of psychotic illness is difficult, particularly when no history of prior episodes is volunteered or an effective method of checking records is available (Hafner & Boker, 1982).

The present study attempted both to overcome some of the methodological limitations which have characterised much of the previous literature, and to focus on the largely ignored area of female homicide. A sequential series of all clearly defined homicide offences by women over an eight year period, which included those where the presumed offenders committed suicide, was employed. The ascertainment of mental disorder was from a database recording all contacts with the public mental health services over the individual life time. The rates of psychosis in the female

homicide offenders were compared to rates among women in the general population within the same jurisdiction, and ascertained using an identical methodology.

Method

Sample

Victoria is a largely urbanised state in Australia with a population of 3,449,638 that were aged over 20 years in 2002. All homicide offenders between 1997-2005 (N=435) were identified using the police's Law Enforcement Assistance Package (LEAP) in the State of Victoria, Australia. This provides information on all contacts with the police, and of relevance to this study, all reported homicides, subsequent charges, court decisions and disposals. Further information was extracted from the homicide squad's files and database. Included were all murder (males n=183, females n=14), manslaughter (males n=141, females n=18) and infanticide (males n=13, females n=9) convictions together with findings of insanity (mental impairment) (males n=20, females n=6) plus all cases that a coronial inquiry had deemed were a murder/suicide (males n=20, females n=4). Convictions arising from dangerous or intoxicated driving and manslaughter convictions arising from negligence were not included as there was no established intent to kill. If the available data were unclear or undetermined, the relevant police investigator was contacted personally. For example, when a homicide case was originally entered onto the LEAP system the motive for the offence may have been recorded as "unknown". If this was the case, the investigator was interviewed to determine if the

motive had subsequently become apparent but the supplement information had not been added to the database.

Criminal offence history

Information from the LEAP and homicide squad database was coded to provide the names, aliases and dates of birth of the subjects and 17 variables relating to their offending history and index offence. These variables included the manner of death, relationship (if any) of the offender to the victim and motive (usually acknowledged by the offender during the police interview but may have subsequently become apparent even if the offender had denied culpability).

Mental health contact

Psychiatric information was gathered from the statewide Victorian Psychiatric Case Register (VPCR), which has existed in various forms for forty years now. All contacts with public mental health services in Victoria, as an inpatient, community patient, or one-off assessment are recorded on the VPCR. The date, nature of the contact, duration of contact, diagnosis if made, and treatment, if any, are recorded.

Data linkage

Personal identifiers from LEAP were matched with recorded entries on VPCR. When a data match was made, VPCR information was collected on 13 variables including the dates and nature of the contacts, and whether there had been a compulsory admission or a Community Treatment Order (CTO) under the Mental Health Act.

Mental disorders are recorded according to International Classification of Diseases (ICD-10). This register is virtually complete for schizophrenic

disorders with 0.7% (1% for males, 0.4% for females) of the population registered as having schizophrenia (Short, Thomas, Luebbers, Ogloff & Mullen, in press; Wallace et al., 2004). The elevated contact for psychotic disorders is explained by the absence of the ability to admit compulsorily to private beds and the lack of rehabilitative and community support programs outside the public system. Non-psychotic conditions, and in particular high prevalence disorders such as affective illnesses, are usually treated (if treated at all) by general practitioners or private psychiatrists and psychologists in the community. Only a minority of these therefore appear as primary diagnoses on the register. This situation is also the case for substance abuse as the drug and alcohol services, public and private, do not report to VPCR (Wallace et al., 2004).

Rates of psychosis and substance abuse within a comparison population

Substance abuse as a primary problem is inconsistently recorded on VPCR and even the rate of comorbid abuse is under reported. Nevertheless, the VPCR contains robust data on the prevalence of schizophrenia for both genders and is consistent with the data for two recent analyses (Short et al., in submission; Wallace et al., 2004). To compare rates of schizophrenia and psychosis among the homicide offenders with that of the general population, data were utilised from a study by Short and colleagues (in submission). That study employed identical matching protocols in 5,000 people drawn from the electoral roll in Victoria which were linked to the VPCR. Voting in Australia is mandatory for all people aged 18 years and older and captures 93.6% of the state's eligible voters (Victorian Electoral Commission, 2008).

To obtain a more thorough ascertainment of substance abuse within the sample, the criminal database LEAP was searched for records for convictions for possession or use of drugs and alcohol related offences (e.g., driving under the influence). These data were subsequently combined with psychiatric records to acquire a composite rate of substance abuse, a rate that we termed Known Substance Abuse (KSA). The composite KSA measure for the general population was obtained from a random community sample of 390 females (also drawn from the electoral roles) and their rates of KSA were calculated in the exact same manner—by combining psychiatric records and criminal records to obtain the composite (Wallace et al, 2004). Although the composite KSA measure is doubtless still an under representation of actual substance abuse, because the ascertainment of the KSA composite was identical for both the homicide and control group, it is possible to obtain valid between sample differences. The rate of KSA obtained, however, will not represent accurate prevalence data.

Ethical issues

Ethical approval for this study was obtained from the Ethics Committees of the Victoria Police, Monash University, and the Department of Human Services. The primary ethical concern was the issue of the researchers accessing identifying data (subjects' names and dates of birth) without their consent. Ethical approval was given on the basis that all identifying data was removed once the police and mental health data had been linked. Therefore, there was no risk that individual subjects' identifying information would be revealed.

Results

Homicide offence

The overall number of homicides investigated for the period 1997-2005 was 569 (including multiple victims of the one offender and multiple offenders acting in concert). A total of 435 (76%) offenders were subsequently convicted, found not guilty by virtue of mental impairment (NGMI), or were deemed murder/suicide offenders by the coroner.

The cohort included 55 (12.6%) female offenders, six of those who committed suicide immediately after the homicide. They were convicted as sole perpetrators in 40 instances, 11 committed their offence with a male and four with another female co-offender. The women's ages ranged from 16-80 years (mean 38.29 years, SD=14.03). Those women who committed their offences with an accomplice were significantly younger (mean 27.8 years, SD=8.97 vs. mean 42 years SD=13.84, t (53) = 3.69, two-tailed, $p<0.001$). A prior offence history was recorded in 30 (54.5%) of whom 16 (31%) were convicted for violence. The mean number of prior offences in the sample was 2.5.

Female offenders killed their partner in 20 cases (36.4%), another relative including children in 13 cases (23.6%) and a friend or acquaintance in 20 cases (36.4%). Only 2 (3.6%) killed strangers.

Motive

The women's predominant motive for murder was recorded as the result of an argument in 24 (43.6%) cases, revenge in 13 (23.6%) cases, financial gain in 7 (12.7%), a sexual offence that ended in homicide in 1 (1.8%) case, and for sadistic pleasure in 1 (1.8%). A further 9 (16.3%) killed their

own child/children. The women with a psychotic illness killed as the result of an argument in 6 cases, one killed for financial gain (the same woman that killed a stranger), one killed her own child, and two killed in the context of revenge. For those women who committed murder-suicide, four of them killed their own child/children, one killed as an act of revenge and the other following an argument with their partner.

Number of victims and means of committing homicide

Three cases involved multiple homicides and in every case the victims were the offenders' children. A knife was the most common means of committing homicide (40%) followed by assault with a blunt instrument and asphyxiation in equal proportions (20%). A firearm was used in four deaths (7%) and likewise for assault without a weapon. Death by drowning occurred in 2 cases (4%) and death by fire in one (2%).

Mental disorder

The results of these analyses are set out in Tables 1 and 2. Thirty-eight (69.1%) female homicide offenders had contact with the mental health services at some point in time; this was significantly higher than for controls (241/2438, 9.9%, OR = 20.38, 95% CI 13.36 – 31.08). Of these, contact was recorded prior to the homicide offence for 25 (45.5%) and after the offence for 13 (23.6%). Overall there were 9 (16.4%) homicide offenders diagnosed with schizophrenia. This compared to 11/2438 (0.45%) of female controls (OR = 43.17, 95% CI 24.54 – 75.94). Eleven (20%) females were diagnosed with psychosis, significantly higher in comparison to the 29/2438 (1.2%) controls (OR 20.77, 95% CI 12.03-35.86. In contrast, 30 (7.9%) male homicide offenders were diagnosed with

schizophrenia compared to 24/2392 (1.0%) of male controls (OR = 8.46, 95% CI 5.29—13.53).

Infanticide and murder—suicide

The four women who committed murder-suicide also killed their own child; three had prior mental health contact but no diagnosis and one had no prior mental health contact. Another nine women killed their own children and of those two had not had any contact with mental health services, three had contact but no diagnosis, only one was known to have had treatment for psychosis, another two for adjustment disorder and one woman was diagnosed with mild depressive disorder.

The mean age for those females with psychosis did not differ significantly from the non-psychotic offenders (41.45years SD 13.19 vs. 37.5 SD 14.26). There was no significant difference between the mean number of previous convictions for non-psychotic homicide offenders (4.16, SD= 6.36) and the mean for those women with psychosis (4.73, SD=10.67), the apparent difference being attributable to a single psychotic woman with 36 prior convictions.

Of the women diagnosed with a psychotic illness, 6 killed a partner, one killed a friend, three others killed relatives, and one a stranger. This did not differ significantly from the pattern in non psychotic women. Women in the psychotic group used a knife in four instances, three a blunt instrument, two asphyxiation and one a firearm—a pattern similar to non psychotic women.

First or subsequent episode of illness

For the nine female offenders with a diagnosis of psychosis prior to the offence, the mean time period between first diagnosis and the index offence was 7.15 years (SD=4). One further female is the only woman to have killed in first episode of psychosis. The relationship between first presentation and the homicide is set out in Figure 1. For male homicide offenders diagnosed with schizophrenia (n=30), 43.3% committed the homicide during first episode of psychosis.

Known substance abuse

Nineteen (34.5%) of the female homicide offenders had known substance abuse, and four of the 11 (36.4%) of those with a psychotic disorder were known substance abusers. Female homicide offenders were significantly more likely to have KSA than female controls (OR = 67.91, 95% CI 31.78—145.1).

Prior offence history

As shown in table 3, the histories of psychotic and non psychotic female offenders were compared. There were no significant differences across offence type. Taken together a small majority of offenders, irrespective of diagnoses, had an offence history. Less than one third of the offenders had a previous history of violent offending.

Court disposal

Five women with a diagnosis of schizophrenia prior to the homicide were found not guilty be reason of mental impairment. The remaining two were found guilty of manslaughter. The one woman who was diagnosed with schizophrenia after the homicide offence was found guilty of murder. For

the two women diagnosed with depression with psychosis, one was convicted of manslaughter, the other murder. Finally, one elderly woman who had previous mental health contact with a diagnosis of an "Unspecified organic or symptomatic mental disorder" was also found not guilty by reason of mental impairment. Only one woman (12%) was considered to have committed her offence within the period of first episode of schizophrenia.

For those male homicide offenders who were found not guilty by reason of mental impairment, 18 had been diagnosed with a psychotic illness prior to their offence, and two were diagnosed immediately post offences. Five offenders diagnosed post offence received murder convictions and three were convicted of manslaughter. Five offenders who received their diagnosis before the offence were convicted of murder and one offender received a manslaughter conviction. Fifteen male offenders (43.3 % of offenders with psychosis) were considered to have committed their offence during the period of a first episode of schizophrenia or depression with psychosis.

Discussion

This is the third study to focus on psychotic disorders among female homicide offenders. While female homicide investigation has been limited to two European studies (Eronen, 1995; Schanda et al., 2004), it is a valuable focus of research and so far we have been largely uninformed as to whether or not the international data generalize to the population of Australia.

Like the previous studies, we found a higher rate of psychosis among females than reported for male homicide offenders (Eronen, 1995; Schanda et al., 2004). As for those earlier analyses, the main strength of this study is that it is an entire population from one jurisdiction with reliable records. However, unlike those studies, this research ascertained psychosis in female offenders entirely independently of the legal process (with the exception of one case) and thus the method of ascertainment is likely more valid. This analysis includes lifelong psychiatric histories and characteristics of homicides not found in the previous papers (for example, method of killing) and therefore offers a richer description. A strength of this study's methodology is that the data do not depend on diagnosis considered by one or more court experts after a homicide has occurred but on psychosis diagnosed and treated in the public mental health system, independent of the court process. The temporal characteristics of diagnosis-to-time-of offence allows for a more accurate estimation of the presence of a first psychotic episode.

The finding of a 20% rate of psychosis and 16.4% rate of schizophrenia in our sample of female offenders is higher than previously reported for violent offending in male and mixed gender samples of 8% (Fazel, Gulati, Linsell, Geddes & Grann, 2009). The rate is also higher than for our own sample of 380 males homicides of whom 8.9% were psychotic (Bennett, et al., submitted). The odds ratio for female homicide offenders having a psychotic illness, compared to the general population, is 20.77 (95% CI 12.03 to 35.86), whereas for males and mixed gender

cohorts it is reported in Fazel and colleagues meta analysis to be 19.5 (95% CI 14.7 – 25.8).

The reasons for the discrepancy between rates of psychotic homicide between females and males cannot be attributed to those women who killed their children as only one (7.7%) of those 13 cases received a diagnosis of psychosis. Four of those who killed their children also killed themselves at the time and, although they had not received a diagnosis for a psychotic illness (three had had contact but no diagnosis), the presence of such a disorder at the time cannot be excluded—a possibility acknowledged in the coronial verdict on each case. If these women had been added to the psychosis count an even more dramatic disparity with males would have emerged. Of the four females who committed suicide after killing, three had contact with mental health services, but none had received a diagnosis. Typically, those with contact with the public mental health services who do not have a recorded diagnosis fall into two groups. The largest group are those seen in the emergency room in crisis for whom no follow-up is arranged. The other group are seen in a domiciliary visit or out patient appointment and fail to turn up for their subsequent appointment. The lack of a specific diagnosis when seen does not exclude the possibility that these women developed an unrecognised psychosis, or severe depressive illness, immediately prior to the killings. It is important to note, however, that only one additional woman was diagnosed with psychosis following the homicide yet all of the women who survived were subsequently assessed by mental health professionals. An increased rate of psychosis among domestic as compared to non domestic homicide might

explain some of the differences in this study as males killed more strangers (15% vs. 9%) and fewer close relatives (38% vs. 61%).

Those with a psychosis did not differ significantly from the rest of the female homicide offenders in age, prior criminality, relationship to victim, or method of killing. Of note, the rates of substance abuse did not differ between psychotic and non-psychotic female homicides (36.4% vs. 34.1%) nor was it significantly lower than in our cohort of male homicide offenders.

For those studies where the focus has been schizophrenia and homicide specifically, the percentage of offenders with previous contact with mental health services is considerably less than the current study. Shaw et al. (2006) in a study of homicide offenders (N = 1594) in England and Wales, found that 282 (17.7%) offenders had had some mental health contact over their lifetime and for those subjects who were psychotic at the time of their offence, the majority had been in contact with mental health services at some time in the past. However, psychiatric reports were only available for 73% of the people in the sample. Thus, mental health contact for the offenders in this study may be under reported. Meehan and colleagues (2006) reported that of those that committed homicide (N=1,594) 24 offenders (28%) with schizophrenia (n=85) had never had contact with mental health services. Neither of these studies differentiated for gender.

In this current study, 38 (69.1%) female offenders had contact with mental health services before their offence and those with a prior diagnosis of psychosis nearly all killed after a protracted history of mental illness and

mental health contact. Except for the one offender that was diagnosed shortly after her index offence, the briefest period of time for any of that group to have been diagnosed prior to her offence was four years. This does not support speculations about the importance of first episode of illness, at least among female homicide offenders and has clear implications for prevention among this sub-group.

The prevalence of co-morbid substance abuse is high among mentally ill offenders and some studies suggest that such co-morbidity is intricately linked for those with a psychotic illness who commit serious violence (Elbogen & Johnson, 2009; Fazel et al., 2009; Ogloff et al., 2004). Given that complete substance abuse data for the current sample was not available, this study obtained a composite measure that includes substance abuse registered with the public mental health database and any prior conviction of substance abuse. These data confirmed the high rates of coexisting substance abuse in psychotic offenders compared to controls and non-offending psychotic patients. There was, however, no difference in known substance abuse rates between homicide offenders with a psychotic illness and those without. Nonetheless, levels of substance abuse in the psychotic group in this study are most likely modest given the reported rates in previous studies (Mullen, Burgess, Wallace, Palmer & Ruschena, 2000; Ogloff, Lemphers & Dwyer, 2004; Tiihonen, Isohanni, Rasanen, Koiranen & Moring, 1997). The measure of substance abuse for all offenders in this sample is conservative given the method of ascertainment; however, the data are nevertheless informative as a base level—precise levels can only be elevated.

Interestingly, no significant differences were found regarding offence histories for psychotic versus non psychotic offenders. This is contradictory to the general literature on mental illness and offending that has found a higher rate of criminal history for the mentally ill (Wallace et al., 2004). However, the research that is specific to female homicide offenders (Eronen, 1995; Schanda et al., 2004) has not included prior criminal history data. The finding in the present study has important implications for the assessment and management of patients. Clinicians often dismiss concerns regarding a patient's future likelihood of violence if the client has no formal history of violent behaviour or offending. It may be the case that the behaviour of women with histories of care in the mental health system, as was the situation with all but one of the women with a psychotic illness in the present study, is contained under most circumstances. As such, clinicians need to consider the range of factors related to violent offending (e.g., static and dynamic risk factors), rather than considering the presence or absence of past violent offending.

Whether the finding that women are over represented for NGMI dispositions reflects a real difference in mental state between male and female offenders, or the difference is a result of applying a chivalrous attitude to female offenders, needs further exploration.

Limitations

Only 55 females, of whom 11 were psychotic, were reported in this study and subsequently caution should be employed regarding the generalisability and significance of any conclusion. A key compensation for this limited number of subjects is that the cohort has specificity of

offence category and the method of data collection is robust; an entire population has been observed and access to mental health diagnosis was available prior to and after the offence. It is possible that an offender had a psychotic illness diagnosed by a private mental health professional only and thus was not registered on the state mental health database. However, they are unlikely to have escaped notice either on reception into prison (where every woman is assessed by both a psychiatric nurse and general practitioner) or over the subsequent months and years in contact with the public mental health system.

Given that the women with psychosis in this study had mostly been within the mental health system for years, what was the trigger for committing the offence, and what, if any, were the potentially recognisable portents of violence? This study suggests that for psychotic women, though youth may be less important the combination of substance abuse, prior offending and a discordant relationship are just as important risk factors as those for non-psychotic offenders. Most of these homicides were planned and reflected a combination of interpersonal and social stresses coloured by the effects of the psychotic illness. As such, in theory at least, many of them may have been prevented; any referral for assessment at any point in the lifetime of a female schizophrenia patient should render the assessing clinician mindful to the possibilities of the patient committing a serious offence.

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Table 1. Rates of mental health diagnoses and contact histories of female homicide offenders and population comparisons

	Female Homicide Offenders (n=55)	Female Controls (n=2438)	OR	95% confidence interval	p
Psychosis	11 (20%)	29 (1.2%)	20.77	12.03 – 35.86	<0.001
Schizophrenia	9 (16.4%)	11 (0.45%)	43.17	24.54 – 75.94	<0.001
Any contact with mental health services	38 (69.1%)	241 (9.9%)	20.38	13.36 – 31.08	<0.001

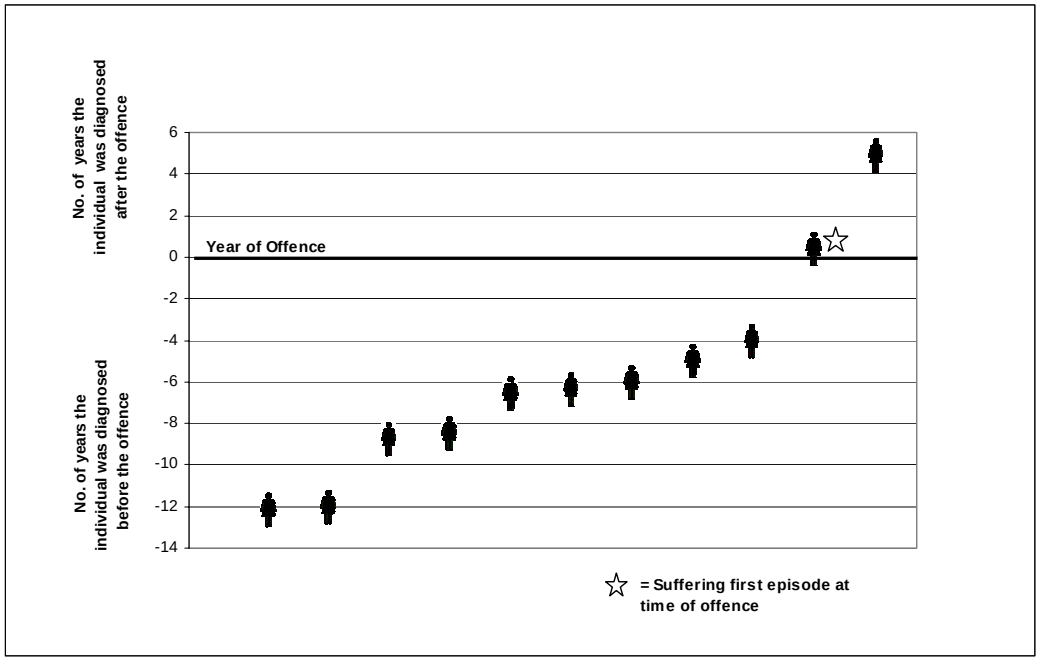
Table 2. Rates of psychosis, and number and nature of mental health contacts.

	Psychosis	No psychosis
No contact with mental health services prior to offence	1	10
Contact with mental health but no diagnosis	0	19
Community managed on first contact	4	23
Hospital admission on first contact	5	7
Had received a CTO previously	6 (range 1—16 counts)	0

Table 3. Number and percent of psychotic and non-psychotic homicide perpetrators with various types of criminal history

Offence Type	Psychotic (N=11) n (%)	Non-Psychotic (N=44) n (%)	P
Any criminal history	6 (54.5%)	23 (52.3%)	0.893
Traffic offences	2 (18.2%)	4 (9.1%)	0.387
Property offences	3 (27.3%)	18 (40.9%)	0.405
Violence offences	3 (27.3%)	14 (31.8%)	0.770

Figure 1. Each figure represents the point in time an individual was first diagnosed with psychosis. Figures that appear below the zero were diagnosed before committing the offence. The mean time of diagnosis before the offence is 7.15 years.


No. of years the individual was diagnosed after the offence
No. of years the individual was diagnosed before the offence
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
Year of Offence
= Suffering first episode at time of offence

CHAPTER 5: SUBSTANCE ABUSE AND PRIOR OFFENDING

5.1 Preamble: Substance Abuse and Prior Offending

Accurate data regarding rates of substance abuse in the community are difficult to attain—at best, current statistics are conservative (see Elbogin & Johnson, 2009). Known substance abuse for those people with schizophrenia is higher than the general population but also likely to be underestimated. A popular perception is that it is the substance abuse combined with schizophrenia that increases the risk of an individual committing a violent offence. Likewise, a prior history of offending coupled with schizophrenia has also been lauded as a risk factor. A contrary theory contends that substance abuse increases the risk of violent behaviour across subject groups, irrespective of the presence of mental illness. In addition, though, factors inherent to the illness of schizophrenia—an often socially debilitating illness that causes significant difficulties in forming and maintaining stable relationships, in achieving meaningful life goals, in attaining sufficient education and often perpetuates paranoia—and not substance abuse or a criminal history *per se*, increase risk among people with mental illness (see Wallace, Mullen & Burgess, 2004). These opposing views potentially impact on professional, public and legal attitudes. This study found that the mentally ill and non mentally ill homicide offenders did not differ in either known substance abuse or prior criminal convictions.

Monash University

Declaration for Thesis Chapter 5

In the case of Chapter 5, the nature and extent of my contribution to the work was the following:

Name	% contribution	Nature of contribution
Ms Debra Bennett	60	Literature review, project design, data collection and analysis, writing of paper.
Professor Paul Mullen	20	Review of paper drafts and general supervisory input.
Dr Stuart Thomas	7.5	Review of paper drafts and general supervisory input.
Professor James Ogloff	7.5	Content analysis
Dr Cameron Wallace	2.5	Provided comparative data
Ms Tamsin Short	2.5	Provided comparative data

Declaration by co-authors

The undersigned hereby certify that:

(1) the above declaration correctly reflects the nature and extent of the candidate's contribution to this work, and the nature of the contribution of each of the co-authors.
(2) they meet the criteria for authorship in that they have participated in the conception, execution, or interpretation, of at least that part of the publication in their field of expertise;
(3) they take public responsibility for their part of the publication, except for the responsible author who accepts overall responsibility for the publication;
(4) there are no other authors of the publication according to these criteria;
(5) potential conflicts of interest have been disclosed to (a) granting bodies, (b) the editor or publisher of journals or other publications, and (c) the head of the responsible academic unit; and
(6) the original data are stored at the following location(s) and will be held for at least five years from the date indicated below:

Location(s)

Victoria Police, Crime Department Headquarters.

		Date
Signature 1		
Signature 2		
Signature 3		
Signature 4		
Signature 5		
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5.2 Paper 3: Schizophrenic disorders, substance abuse and prior offending in a sequential series of 435 homicides

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Schizophrenic Disorders, Substance Abuse and Prior Offending in a Sequential Series of 435 Homicides

Running Title: Schizophrenia in a sequential series of homicides

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Abstract

Objective To examine the relationship between serious violence and having schizophrenia, abusing substances, and criminality.

Methods Case linkage utilised a state wide register of public mental health contacts, and a national database of criminal convictions. The rates of schizophrenic disorders, substance abuse, and criminal convictions were established in a sequential series of homicide offenders. This was compared, using an identical methodology, to the rates of schizophrenic disorders in a random community sample, and to offending and substance abuse among both a general community sample and a sample of patients with schizophrenia.

Results Schizophrenia was found significantly more often among homicide offenders than in the general community. Substance abuse did not differ significantly between homicide offenders with a schizophrenia, and either other homicide offenders, or those with a schizophrenia in the community, but were higher than in the general community and among schizophrenia comparisons after cases with a criminal history were excluded. Schizophrenic disorders without comorbid substance abuse among homicide offenders was over 7 times higher than for all schizophrenias in the general community.

A similar pattern emerged for offending histories with higher rates among homicide offenders with schizophrenia than general community

comparisons and the comparisons with schizophrenia, but with schizophrenic disorders remaining significantly higher among homicide offenders compared to the general community, even when those with prior offences were excluded.

Conclusions The association between homicidal violence and having a schizophrenic disorder cannot be explained away simply on the basis of either comorbid substance abuse or prior offending.

Introduction

The relationship between schizophrenic syndromes and behaving violently still generates conflicting opinions and apparently contradictory empirical data. For example, two major studies recently offered what appear to be diametrically opposed conclusions, one stating "severe mental illness (including schizophrenic) did not independently predict future violent behaviour" (Elbogin & Johnson, 2009, p.152) and the other "schizophrenia was associated with an increased risk of violent crime" (Fazel *et al.* 2009, p.2016). The conflict is partly explained by the methods chosen to ascertain and express the relationship between the measures of violence and of psychosis, in particular with regard to co morbid substance abuse and histories of offending.

There is now ample evidence that at the level of a bivariate analysis there is a significant association between having a schizophrenic illness and behaving violently (Taylor & Gunn, 1984a; Taylor & Gunn 1984b; Swanson *et al.* 1990; Hodgins *et al.*1996; Wallace *et al.* 1998; Brennan *et al.* 2000; Wallace *et al.* 2004; Fazel & Grann, 2006). The question that remains is whether the association is either a product of confounding factors, in particular substance abuse and prior offending, or generated by factors inherent to the schizophrenic process which may be mediated to some extent by substance abuse and other criminogenic factors (Räsänen *et al.* 1998; Mullen, *et al.* 2000; Hodgins, 2001; Steadman *et al.* 1998; Monahan *et al.* 2001; Walsh *et al.* 2002; Grann & Fazel, 2004; Mullen, 2006; Joyal *et al.* 2007; Lidz, *et al.* 2007).

One thing is certain: Comorbid substance abuse is a robust risk factor for violence, not only in the schizophrenias but in almost any group. A risk factor, however, is a statistical correlation between a current state and a future possibility which does not necessarily reflect a causal relationship, or if there is a causal connection the direction of such an influence.

The emerging consensus about the central role of substance abuse in violence among those with schizophrenia can have unfortunate consequences. This transfer of responsibility for the violence from the illness of schizophrenia to the deviant behaviours of abusing substances potentially changes professional, public, and legal attitudes. All too easily the responsibility for the violence becomes attached to personal inadequacies or even viciousness expressed through intoxication, rather than to the depredations of a disabling psychotic illness. The well intentioned attempt to reduce the chances of patients with schizophrenia being stigmatised as violent by shifting the causal assumption to substance abuse may, in practice, backfire. The most vulnerable, particularly among young patients with these disorders, may as a result receive fewer mental health services, consequently offending more frequently, and finish up being imprisoned rather than hospitalised. The high levels of schizophrenic illnesses among prisoners throughout the English speaking world may reflect in part this process. These potentially disastrous outcomes make it essential the link between substance abuse,

schizophrenic disorders and violence be thoroughly investigated and scrutinised before any consensus is allowed to create a premature closure.

A wide range of measures of violence encompassing everything from self report to criminal convictions, and from threatening behaviour to homicide, have been employed to study the link (Monahan *et al.* 2001; Wallace *et al.* 2004; Elbogin & Johnson, 2009; Fazel *et al.* 2009). In theory, though absolute levels will vary widely, all measures should produce similar relative associations between violent behaviour and schizophrenic disorders given that comparisons and cases have been subjected to identical definitions and ascertainment. Unfortunately much of the literature uses different methods to establish comparison rates, for both psychosis and violence, from that which is applied to cases. Further, because different studies employ different definitions for violence, comparisons between studies are difficult to establish.

The study of homicide, despite its infrequency and emotive nature, has advantages. Homicide is defined differently in different jurisdictions and the inclusion criteria employed are often not clear. However, the specificity of the offence is certainly less ambiguous than 'violent behaviour'. Notwithstanding that the rate of convictions are fewer than those charged, 'clearance rates' generally range from 60—80% (see Federal Bureau of Investigation, 2004; Mouzos & Houliaras, 2006;). Homicide cases are not lost by diversion, nor the discretion not to prosecute, which contrasts with most offences, even involving significant violence, where only a selected

and often small sample of offenders travel all the way from offence via identification through to conviction. Homicide studies are also, however, often bedevilled by methodological problems. Homicide rates differ between countries per year per 100,000 inhabitants (England and Wales between 1996-1999, homicides by people without schizophrenia 1.01 vs. homicides by people with schizophrenia 0.06) (Meehan *et al.* 2006) compared to Victoria, Australia 1993-1995, homicides by people without schizophrenia 1.04 vs. homicides by people with schizophrenia 0.06 (Wallace *et al*. 1998) and USA between 1979-1980, homicides by people without schizophrenia 3.25 vs. homicides by people with schizophrenia 0.36 (Wilcox, 1985). Such discrepancies may be attributable to an array of cultural differences such as gang related deaths. Nevertheless, Large and colleagues (2009) recently reported that there is "no evidence that the proportion of homicides by those with schizophrenia is lower in places with higher homicide rates" (p.127).

No matter the country of origin, studies of homicide and mental illness often ignore those offenders who commit suicide at the time, or soon after. Court decisions on responsibility and insanity are sometimes employed as a proxy for a psychiatric diagnosis, when in reality such decisions reflect primarily current legal practice, and the prevailing social climate. Equally problematic is the reliance on evaluations prepared for trial where the objectivity of both the information and interpretation may be influenced by the context.

This study attempted to overcome some of the methodological limitations in much of the literature not only on the relationship of the schizophrenias to homicide but to violence in general. The study aimed to establish the rates of schizophrenic disorders among homicide offenders, how important the roles of substance abuse and prior offending were, and what, if any, were the clinical and social significance of any associations.

Method

Samples

(a) Homicide offenders

All homicides between 1997-2005 in the Australian State of Victoria (population 5 million) were identified using the Police database the Law Enforcement Assistance Package (LEAP). The information on LEAP was augmented from the homicide squad's own database. Included in the sample were all murder, manslaughter and infanticide convictions together with findings of insanity (mental impairment) plus all cases which a coronial inquiry had deemed were a murder/suicide. Excluded from the sample were convictions arising from dangerous or intoxicated driving, or manslaughter convictions arising from negligence.

(b) Community Comparison Groups for Psychiatric Disorder and Offending

In Australia, both voting and registering as a voter are compulsory and enforced by law; as a result 93.6% of those over 18 years are on the rolls (Victorian Electoral Commission, 2008). The mental health data on the

homicide offenders was compared to a random sample of 4830 (males 2392 (49.5%)) drawn from the electoral rolls in 2007.

A comparison group drawn from a separate random sample of 1022, also drawn from the electoral rolls, had their criminal records established on LEAP (Wallace *et al*. 2004; Wallace, 2006).

(d) Comparison Group with Schizophrenia

The rates of criminal offending and known substance abuse among those with schizophrenia in the community was established using all 1022 cases with a diagnosis of schizophrenia who had their first mental health contact in 1995 (Wallace *et al*. 2004; Wallace, 2006).

Mental health histories

Psychiatric information was gathered from a statewide register colloquially known as the Victorian Psychiatric Case Register. The register has existed in various forms for over forty years initially as a research tool but now operating primarily as a service management tool. There are considerable incentives for clinical services to maintain full data entry as it influences funding. All contacts with public mental health services, as an inpatient, community patient or in emergency rooms, including one off assessment, are recorded. Included are those who receive psychiatric care in the prison system and secure forensic services.

The VPCR records the date, nature of the contact, duration of contact, diagnosis if made, and treatment, if any, which was provided. Mental disorders are recorded according to International Classification of Diseases (ICD-10), though clinicians in Victoria predominantly use DSM categories which are translated by records clerks into the relevant ICD code.

The case register reflects the realities of an Australian public mental health service whose priority is major mental illness. The private services do not provide for compulsory admissions, or manage community treatment orders, and make a restricted contribution to ongoing rehabilitation and support services for those with a schizophrenic disorder. As a result almost all people with a schizophrenic illness receive all or part of their care in the public services. In contrast primary substance abuse is often catered for by services which do not report to the VPCR.

Substance Abuse

The case register is a limited source of data on primary substance abuse though far better for comorbid abuse. Therefore, in an attempt to capture a fuller picture of substance abuse we employed a composite measure incorporating both police convictions for alcohol or drug related charges and a diagnosis of primary or comorbid substance abuse on VPCR. If an individual had obtained a diagnosis of substance abuse or dependence disorder, they were considered to have "known substance abuse" (KSA). In addition, the LEAP database was searched and if individuals had a record of substance-reflected offences, they were also considered to have "known

substance abuse" (e.g., possession or use of drugs, alcohol related offences such as drunk in a public place and driving in excess of alcohol breath content).

Data Linkage

The data matching procedures involved first a determinist then a probabilistic approach, extracting exact and potential matches based on iterations of key identifying information taken from the source database (e.g. surname, first names, date of birth, gender). When a data match was made, information was collected on 13 mental health variables including the dates and nature of the contacts, diagnosis entered, medication prescribed, and whether there had been a compulsory admission or a Community Treatment Order (CTO) under the Mental Health Act. Once matched and checked for accuracy, identifying variables were permanently deleted.

Assigning a diagnosis was complicated in some cases where a schizophrenic illness was diagnosed on some occasions but not others. Only cases where at least 2 out of 3 occasions resulted in a diagnosis of schizophrenia were included. For the purposes of this analysis, included in the definition of schizophrenic disorders were: schizophrenia, schizoaffective disorder, and delusional disorders.

Approach to analysis

Descriptive statistics were used to characterise the sample, checking the distributions and frequency of occurrence of variables of interest. Continuous data were compared using independent t-tests and categorical variables were compared using Chi Squared tests of Association. Odds Ratios (OR) and Relative Risk (RR) were calculated, using these cross tabulations to determine the magnitude and direction of comparisons of interest, with 95% confidence intervals of both ORs and RRs computed using the method described by Miettinen (Kirkwood, 2001). Analyses were carried out in Stata (version 10.0, StataCorp, Tx, 2007) and SPSS (version 17.0, SPSS Inc, 2007).

Ethics

Consent was not sought from either cases or comparisons, despite using identifiable information to enable the linkage of the databases. Attempting to obtain consent from potential comparisons leads to both too low an acceptance rate, and therefore too potentially a skewed sample, for meaningful comparisons (Monahan *et al.* 2001). Informed consent from the homicide cohort would have been equally problematic given most are currently incarcerated and some psychotic. However, the study only considered group level data in its analyses and the design enabled links to be broken to personal identifiers as soon as linkage was complete thus eliminating the possibility of the linked data being traced back to any individual case or comparison subject. The Ethics Committees of the

Department of Human Services, Victoria Police and Monash University approved the study.

RESULTS

Homicide Offences

Between 1997 and 2005 there were 569 homicides investigated (including multiple victims of the one offender and multiple offenders acting in concert). A total of 435 (76%) offenders were subsequently convicted, found not guilty by virtue of mental impairment (NGMI), or deemed by the coroner to be the perpetrator of a murder suicide. The sample comprised 55 (12.6%) females and 380 (87.4%) males, the youngest offender was 16 and the oldest 84. No homicide offenders were tried in juvenile courts over the study period. The mean age for males with schizophrenia was 34.87 years (SD 10.66) and was not significantly different to the no schizophrenia group mean age of 34.49 years (SD 12.57). The female schizophrenia group had a mean age of 41.25 years (SD 15.1) and was not significantly different to the mean age of the female no schizophrenia group (mean 37.61 years, SD 14.0, $p<0.05$).

Rates of schizophrenic disorders

Diagnoses were rendered by clinicians utilising the International Code of Diseases (ICD-10). Thirty-eight (8.7%) of the 435 homicide offenders received a diagnosis of schizophrenia, of whom 30 were men and 8 were women. Seven (87.5%) of the women received their diagnosis of schizophrenia prior to their offence and were not considered to be in the

first episode of psychosis compared to male offenders 13 (43.3%) of whom received a schizophrenia (while experiencing first episode of psychosis) diagnosis proximal to the offence date and 17 (56.6%) received a diagnosis of schizophrenia, not first episode). The rate of schizophrenic disorders among homicide offenders was significantly higher than that found among the community comparison group (38 (8.7%) vs. 35 (0.7%); RR=13.11, 95% CI 9.14 – 18.80, p<0.001). (See Table 1)

Substance Abuse

Fifteen of the 38 (39.5%) homicide offenders with schizophrenic disorders had known substance abuse. This did not differ significantly from the rates either in homicide offenders without schizophrenia (169 (42.6%)) or among the 1022 schizophrenic disorders in the community (267 (26.2%)). The community sample of schizophrenic disorders contained individuals with histories of offending (105. 10.27%) including violent offending (44. 4.3%). The differences were significant when the rate of known substance abuse among the schizophrenic homicide offenders was compared to those with schizophrenic disorders in the community who had no convictions for violence [15 (39.5%) vs. 230 (22.5%) OR = 2.25 (95% 1.18-4.30) or no criminal record of any kind (15 (39.5%) vs. 91 (8.9%) OR 6.67 95% CI 3.63-12.24 p<0.001). (Table 2)

When the rate of schizophrenic disorders among homicide offenders excluding cases who also had known substance abuse, was compared to the rate of schizophrenic disorders among the general population comparisons

it still remained significantly higher than would be expected by chance (23 (5.3%) vs. 35 (0.7%) RR=7.30, 95% CI 4.71 – 11.30). (Table 1)

Prior Offending

Rates of offending prior to the homicide were similar in the groups with and without schizophrenia (60.5% vs. 64.7%). Homicide offenders with schizophrenic disorders were more likely to have had prior criminal convictions than the general population comparisons (23 (60.5%) vs. 98 (9.6%) OR=14.46, 95% CI 8.47-24.67) and the comparisons with a schizophrenic disorder in the community (23(60.5%) vs. 255 (24.9%) OR=4.61, 95% CI 2.50 – 8.50).

If those with a prior history of offending were excluded from the group of homicide offenders with schizophrenic disorders the remaining 15 still formed a group significantly larger than for schizophrenic disorders in the normal comparison population [15 (3.4%) vs. 35 (0.7%) OR 4.89 95% CI 2.81-8.52)] (See Table 2)

Discussion

The cohort of homicide offenders contained 38 (8.7%) individuals who had a diagnosis of a schizophrenic disorder; a rate some twelve times higher than in the general population comparisons. This finding is in line with recent studies on homicide offenders (Modestin & Ammann, 1996; Wallace *et al.* 1998; Haller *et al.* 2001; Fazel & Grann, 2004; Nielssen *et al.* 2007). The study provides one more piece of evidence that at a bivariate

level there is a substantial correlation between having a schizophrenic disorder and serious violence.

The potential social implications of such correlations depend firstly on the perspective from which they are viewed. The rates of homicidal violence by those with a schizophrenia equates in our state, which has a homicide rate between 1.5 and 2 per 100,000 per year, to an annual rate of only one in every 4 to 5,000 sufferers. This should not form a basis for prejudice and exclusion, particularly given the rates of all forms of serious violence in groups such as men between 15 and 25 years, and substance abusers without psychotic illness, are even higher. It makes more sense to oppose having adolescent boys living in your street because of violence risk than opposing housing for those with schizophrenia on that basis. Conversely if up to 8% of homicide could be prevented by better focussed mental health care for those with a schizophrenia this is of considerable public interest. Such an initiative would only be of relevance however if the correlation reflects factors inherent to the schizophrenic process. If the link is explained primarily by substance abuse, with or without a criminality factor, then public policy on crime reduction would be better advised to focus on substance abuse in the general community rather than on the care of those with a schizophrenia. A possible limitation of these findings is that there are a number of influencing variables that lead to a homicide conviction. People who commit homicide and are disorganised in their thoughts and behaviours are arguably more likely to be apprehended by police. However, given the high clearance/solve rate for homicides, the

majority of perpetrators are identified and convicted. Nevertheless, people with mental illnesses may be of low income and not able to afford the best legal representation and, as a result, they may have a higher rate of conviction. Also, not all homicides are recorded as such; a small number of victims of homicide may be recorded as a missing person (Davies & Houliaris, 2007) and thus the rates of homicide are under reported in this and other similar research.

In line with recent research the rates of substance abuse were significantly higher among homicide offenders with schizophrenic disorders than among both the general community and those with schizophrenic disorders without histories of offending. Substance abuse is once again demonstrated to be a robust marker for an increased risk of violent behaviour in those with schizophrenic disorders. These results, however, challenge the assumption that substance abuse is a sufficient or even necessary explanation. The majority of homicide offenders with schizophrenic disorders did not have a recorded history of known substance abuse. The rates of comorbid substance abuse among homicide offenders with schizophrenia did not exceed that among non disordered homicide offenders. More importantly, the excess of schizophrenic disorders among homicide offenders remained significant even when schizophrenic disorders with comorbid substance abuse were excluded. This indicates an association between having a schizophrenic disorder and homicidal violence - a part of which is independent of substance abuse. Nevertheless, a limitation of the current study is that rates of known

substance abuse are likely to be underestimated for both the schizophrenia and no schizophrenia groups and thus any conclusions should be cautious.

The apparent conflict between our results and some prior studies of violence largely reflects a different approach to analysis. Studies have often either excluded cases with comorbid substance abuse when calculating the 'true' relationship between having a schizophrenic disorder and violence, or compared rates with comorbid substance abuse to cases without known substance abuse (Elbogin & Johnson, 2009; Fazel *et al.* 2009; Steadman et al. 1998). This, in our opinion, is only statistically and logically acceptable if substance abuse is an independent variable. Given the rates of substance abuse are currently substantially higher among those with schizophrenic disorders it is most unlikely to be entirely independent. If it is a dependent variable it is improper to exclude cases with comorbid substance abuse when estimating the 'true' relationship, or to separate the population with schizophrenia into with and without substance abuse. To do so is to potentially control for aspects of the schizophrenic disorder itself. The problem is not just theoretical. In Elbogen and colleagues study, for example, over 50% of their schizophrenic subjects were ascertained as having comorbid substance abuse, which was itself linked to being young and male. Thus when schizophrenias with and without comorbid substance abuse were compared a group with more young males was compared to an older group with more females. Given age and gender are probably the major correlates of serious violence the outcome of the analysis was virtually predetermined. This is of no problem when

calculating risk factors but troubling when drawing causal conclusions. Even if the comorbid substance abuse were shown to be the central mediator of violent behaviour, given substance abuse is probably, at least in part, a dependent variable, this would not explain the increase but simply transfer the question from 'why greater violence?' to 'why greater substance abuse?'

Prior studies which have examined the relationship between schizophrenia, violence, and substance abuse over time have reported that despite a dramatic increase in rates of comorbid substance abuse in the last 30 or 40 years the rates of violent behaviour have either not increased, or only increased at a similar rate to violence in the general community (Wallace, *et al.* 2004; Vevera *et al.* 2005). Such data suggests that those with a propensity to behave violently moved into substance abuse as their access to alcohol and drugs increased. This could be explained by another factor, or factors, which predispose to both substance abuse and violent behaviour. In our view this should be sought among the developmental problems, personality traits, and social difficulties which characterise some with schizophrenic disorders. These disabilities, which may be in part genetically mediated, often become manifest long before active disturbances of mental state are obvious.

Homicide offenders both disordered and non-disordered had significantly more prior criminal convictions than the normal comparison group. Those comparisons with schizophrenia also had a substantially increased rate of

criminal convictions compared to normal comparisons. This excess could indicate a general factor of criminality independent of having a schizophrenic disorder. This study indicates however, that the excess of schizophrenic disorders among homicide offenders continues to be significant even when those who also have criminal records are excluded from the analysis. The results suggest that, as with substance abuse, criminality in schizophrenic disorders is a substantial risk factor for violence but is unlikely to be a necessary, or entirely independent causal or mediating factor. Clearly, rather than using summary diagnostic categories on case register records, the best way of exploring the issue of substance abuse is to interview the individual client and review clinical records in detail. This is acknowledged to be a limitation of the current study. The lack of difference in prior offending between the schizophrenic and non-schizophrenic homicide offenders does not conceal a difference in type of prior offending.

It would be extraordinary if substance abuse did not play some independent role in causing the violent behaviour. Equally substance abuse probably does mediate between violence and the social dislocation and disadvantage created by chronic disability. Adding to this, in our view, are likely to be aspects of psychopathology in the schizophrenias which predispose to both schizophrenia and substance abuse. To focus therapeutic efforts entirely on substance abuse assuming it to be a variable independent of the schizophrenic process may lead to approaches which are suboptimal. The drivers for substance abuse and criminality may well be in part disorder

specific and at least some effort should be made to elucidate these influences. Of even greater importance if there is to be an informed approach to the prevention of violent behaviour in schizophrenic disorders we need to go beyond simplistic assumptions about the role of substance abuse in particular, and explore those factors in the psychology, neurology and social functioning of some people with schizophrenia which leaves them vulnerable to both abusing substance and to behaving violently. Above all those patients with a schizophrenic disorder and comorbid substance abuse at risk of behaving violently should attract as much therapeutic enthusiasm and treatment resources from the mental health services as their less burdened fellow patients. However objecting, and occasionally objectionable, the patient with a schizophrenia and comorbid substance abuse may be, mental health services have a responsibility not only to manage their illness but to do everything possible to reduce the chances of their acting violently. Improved and reconfigured mental health services for those with a schizophrenia have the potential to deliver better outcomes for those with these disorders and a safer community for all (Mullen, 2006). This can only occur when researchers and clinicians face up to the implications of the link between having a schizophrenia and violent behaviour and stop prematurely ending exploring the issue by assuming its all substance abuse and antisocial predispositions largely unrelated to the schizophrenic process.

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Conflict of Interest

None

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	Homicide Offenders (N=435)	**Community Comparisons (N=4830)**	**RR (95% CI) *p* value**
Schizophrenic Disorders	n=38 (8.7%)	n=35 (0.7%)	13.11 (9.14 – 18.80) p<0.001
Schizophrenic disorders without substance abuse	n=23 (5.3%)	n=35 (0.7%)	7.30 (4.71 – 11.30) p<0.001
Schizophrenic disorders without prior offending	n=15 (3.4%)	n=35 (0.7%)	4.89 (2.81 - 8.52) p<0.001

Table 1: Rates of Schizophrenic Disorders among Homicide Offenders and a Random Sample of the General Community.

The rates in homicide offenders adjusted for the presence of either known substance abuse or prior offending are compared to unadjusted rates in the community. If it has been possible to remove cases of schizophrenic disorders with comorbid substance abuse and criminal histories from the comparison group it would have decreased the number in the comparison group and further elevated the relative rates of schizophrenia in the homicide cohort.

	Known Substance Abuse OR 95% CI *p* value	Criminal Prior Convictions OR 95% CI *p* value
Homicide Offenders with Schizophrenia n=38	n=15 (39.5%)	n=23 (60.5%)
1. Homicide offenders without schizophrenia (397)	n=169 (42.6%) OR 0.88 (0.45 – 1.73) p = 0.712	n=257 (64.7%) OR 0.84 (0.44 – 1.62) p = 0.605
2. General Community (1022)		n=98 (9.6%) OR 14.46 (8.47 – 24.67) p < 0.001
3. All Schizophrenia Community Comparisons (1022)	n=267 (26.1%) OR 1.84 (0.96 – 3.53) p = 0.067	n=255 (24.9%) OR 4.61 (2.5 – 8.50) p < 0.001
4. Schizophrenia Community Comparisons without criminal convictions	n=91 (8.9%) OR= 6.67 (3.63 – 12.24) p < 0.001	

Table 2: The rates of known substance abuse and of having a criminal record in those homicide offenders with a schizophrenic disorder are compared to other homicide offenders, the general community, and patients with schizophrenia in the community.

CHAPTER 6: INTEGRATED DISCUSSION

6.1 Overview of Main Findings

This research included a sample of 435 sequential homicide offences in Victoria over an eight year period. The studies investigated mental illness among offenders as well as characteristics of offending. Research was conducted on the mixed gender sample and the females were also considered separately. To date, female homicide offenders have received only cursory interest by researchers (see Eronen, 1995; Schanda et al., 2004). The nature of any link between mental illness and violence still generates some controversy (Elbogin, 2009; Fazel et al., 2009), and a number of methodological difficulties explain in part some of this impasse—various definitions of serious violent offending and mental illness make studies difficult to compare to one another. Further, in some studies methods of comparison between the general population and the research sample has not always been robust because they either entirely fail to include a comparison group or they use different methods of ascertainment than those used for the research sample (Fazel & Grann, 2004; Large et al., 2008).

Those studies that have examined homicide offenders and schizophrenia specifically have for the most part found that those suffering this disorder are over-represented within the homicide offender category (Schanda et al., 2004; Taylor & Gunn, 1999). Additionally, co-morbid substance abuse and prior offending are widely regarded as additional risk factors for people with schizophrenia committing a violent offence (Monahan et al., 2001). A greater understanding of motivating factors for

the schizophrenia group may assist in treatment approaches and in assessing level of risk.

There were four broad aims of this study: 1) to overcome a number of the methodological difficulties that have beleaguered some of the previous research; 2) to investigate differences in offence and mental health characteristics between genders; 3) to further explore and clarify the role of schizophrenia and co-morbid substance abuse and prior offending as risk factors for the schizophrenia group; and finally, 4) to assess any differences in motive and instrumental *versus* reactive behaviour for those homicide offenders that have schizophrenia and those who do not. Each of the three papers include their own discussion section that will not be duplicated within this integration, however, the major findings that have emerged which have been reviewed in the preceding three chapters, will be discussed in this chapter.

6.1.2 Research aim 1: Decrease methodological limitations

There have been three basic methodological approaches to researching links between mental illness and serious offending; examining community samples, ascertaining rates of offending for people with a mental illness, and observing rates of mental disorders among offenders. As discussed in Chapters 1-4, each methodology has afforded its own difficulties. For example, utilizing a police database (as a means of ascertainment of mental illness in homicide offences) is not an ideal method as it is likely to underestimate prevalence; Police do not have access to authoritative mental health data.

Studies of homicide, rather than other forms of serious offending, have the advantage of exclusivity—the offence is clearly defined, and a complete sample is essential for obtaining accurate data and this includes murder-suicide cases (Erb et al., 2001). Furthermore, the methodology used for obtaining the sample and the methodology used to ascertain rates of mental disorder, known substance abuse and prior rates of offending in comparison groups, must be sound. Equivalent methodologies must be then used for control or comparison groups. In addition police databases are a deficient source for identifying mental illness in offenders as are court reports; police data needs to be cross-referenced with a public mental health data base. Likewise, police data bases as an individual source are inadequate at identifying motivation for offending in all cases. When the data available are deficient or unclear, follow-up enquiries need to be made with the police investigator if possible.

The current studies utilized a robust methodology: They used a sequential series of all clearly defined homicide offences in one jurisdiction over an eight year period. The sample includes murder-suicide cases. If data were unclear or missing, the police investigator was consulted personally for clarification. The police data base was linked to a public mental health data base which is a reliable record of mental health contacts—in particular for less prevalent disorders such as schizophrenia. The methods used to examine rates of mental disorders, known substance abuse and criminal history were identical for the homicide group and the comparison group.

6.1.3 Research aim 2: Rates of mental illness between genders

This study confirms the many others that have found a link between serious offending and schizophrenia (Fazel, 2007; Modestin, 1996; Wallace, 1998). Most research that has identified rates of mental illness in violent offenders has not differentiated for gender; studies have generally focused on males or have included females in a mixed gender sample.

Some research has found that a significant proportion of those suffering schizophrenia commit homicide within the first episode of psychosis (Meehan et al,. 2006; Nielssen et al., 2007). The few studies that have considered women offenders separately have found that even though women commit very few homicides. They have higher rates of schizophrenia than males—but these studies have not addressed the relationship of temporal proximity of diagnosis to time of offence (Eronen, 1995; Schanda et al., 2004). Neither have these studies included aspects of homicide offending such as motive and victim selection.

This study differentiated for gender and used an entire sample of homicide offenders over an eight year period. Results indicate that rates of committing homicide during first episode of psychosis are significantly different between males and females; disordered female homicide offenders have generally had substantial mental health contacts before committing their offence (only one of 11 [9%] occurred during the first episode of psychosis) whereas 13 of 34 (38.2%) of the male offenders with schizophrenia were considered to be in first episode at the time they committed their offence. This research found that homicide offenders were 13 times more likely to have schizophrenia when compared to the general

population; male offenders were eight times more likely and females 38 times more likely. Male homicide offenders were twice as likely to suffer an affective disorder, and females six times as likely, than the community sample.

Murder suicides are often ignored in the research and this could further hinder the collection of accurate data. In the current study, 40 women committed homicide alone. Of those, 13 (22%) women killed their own children. Four of those women also committed suicide shortly afterward. Even though three of the latter group had had previous mental health contact but no diagnosis, it is reasonable to assume that they were depressed and irrational at best when they committed their offences. That is, it is highly improbable that a woman of sound mind is likely to kill her own child and commit suicide. Thus relevant diagnoses, had they been given, may well have increased the rate of mental illness in this study.

6.1.4 Research aim 3: Prior offending and substance abuse

Many studies have found a link between violent offending and schizophrenia with a co-morbid substance abuse and/or a history of previous offending. Unfortunately, much of the literature has not ascertained or identified rates in comparison samples using identical definitions or methodology. The current study utilized matching methodology to identify both known substance abuse (KSA) and prior offending in the comparison sample as was used in the homicide offender sample. Results indicate that while KSA and prior offending is significantly higher in homicide offenders compared to the general population, there was no significant difference in either known substance

abuse or prior offending between the mentally ill and non mentally ill homicide offenders. It may be the case that there are aspects of psychopathology in schizophrenia that predispose people to both offending and KSA. That is, characteristics of the illness such as social dysfunction, a compromised ability for self reflection and self awareness, discordant relationships and poor strategies for coping with conflict, surely contribute to offending behaviours and abusing substances. Thus, it is more probable that a history of offending and co-morbid KSA increase the risk of future offending but are not causal of themselves. This is an important distinction because it directly relates to treatment and management of those with the disorder. Those homicide offenders with schizophrenia kill family members rather than any other group of victims. Enhanced socialization skills and improved familial relationships for the individual may be a catalyst for decreasing the risk of future offending. If clinicians focus on improving the individual's social performance within the family, in conjunction with targeting KSA, perhaps the substance abuse and risk of future offending will decrease simultaneously as a by-product.

6.1.5 Research aim 4: Motive and other offending characteristics

The final aim of this research was to ascertain if there were significant differences between the mentally ill and non mentally ill offenders in their pre-offence thoughts and behaviour—motivation for the offence and whether or not the offence was essentially planned or impulsive. Previous research has asserted that establishing motive and characterising offences as either instrumental or reactive is vexed with incomplete data and/or classification difficulties (see Bushman &

Anderson, 2001; Dearden, 2008). In this study, if a case was marked as 'motivation undetermined' or the relevant narrative was insufficient to signify rationale for offending, the relevant investigating officer was contacted for further information. A high rate of inter rater reliability was established for the categorisations of both motive and instrumental/reactive/mixed category. Results determined that those homicide offenders with schizophrenia were significantly more likely to have been driven by a need for revenge than those offenders without schizophrenia and accordingly those in the schizophrenia group was significantly more likely to have planned their offence. As previously mentioned above, the schizophrenia group were significantly more likely to kill a relative and less likely to kill a stranger than the non disordered group.

6.2 Implications: Assessment, management and treatment by services and individual clinicians

'Best practice' in the management of the mentally ill population requires mental health services to revise policy, practice and initiatives in light of any valid, current research findings. As our knowledge and understanding of this population improves, policy and practice needs to adapt.

Correctly identifying the level of risk of future violence in the mentally ill is a challenging task—failure to make an accurate risk assessment can have catastrophic consequences. Whether or not a client has been issued a Community Treatment Order (CTO), is an inpatient or

resides in the community, the state has a responsibility toward the client and the general population.

Given the finding that KSA was not significantly different between the disordered and non disordered groups, therapeutic efforts should not be focused principally on substance abuse but take into account other aspects of schizophrenia—psychology, neurology and, in particular social dysfunction—as part of the process of identifying individual treatment plans. The high rate of female homicide offenders who had lengthy mental health histories prior to the homicide offence is a warning bell that ought to be answered for every female client diagnosed with a psychotic illness; no matter how lengthy a period of treatment the client has undergone.

6.3 Implications: Considerations for the criminal justice system

The finding that the motive of revenge had a high rate of occurrence for the schizophrenia homicide offender group should be able to assist law enforcement in both assessing risk in family violence interventions (and, consequently how best to intercede in any given situation) and in the investigation of violent offending. If family members or a carer reports that a person in their care has a diagnosed psychotic illness and is behaving in such a manner that implies that he or she harbors resentment of a transgression (alleged or otherwise) against another, or fears another, protective action should be taken. This is especially the case if it is a disordered female—but whether it be either gender, if the person in question has been involved in long term mental health care, immaterial of whether or not he or she has a prior history of offending or substance abuse, this should not automatically be accepted as a mitigating factor for

not taking assertive precautions. If first-response police officers are aware of the critical possibilities for sufferers of a psychotic illness to behave violently, in theory at least, police may respond more effectively. For those officers investigating the occurrence of a serious violent crime when a person with a psychotic illness has been implicated as a possible offender, the knowledge that often, people with a psychotic illness commit offences in fear or from a sense of revenge may assist in determining the sequence of events and circumstances leading up to the crime and other investigative matters.

6.4 Limitations

Limitations to the present studies have been noted throughout the papers which comprise the thesis. The most significant limitation is the small sample of female homicide offenders (n=55) of which only 11 had a psychotic disorder. Thus, generalisibility and significance should be considered with caution. However, the group of females is a complete sample and includes murder-suicide cases, data pertaining to time of diagnosis to time offence, motivation and victim selection—data that other female homicide offender studies have not considered. Another limitation is that the RAPID data base, while an excellent record for the less prevalent psychotic disorders, is not the optimal data base for the high prevalence disorders such as depression and therefore the prevalence of these latter disorders are under-estimated in this study. In addition, it is possible, although extremely unlikely, that some of the offenders in this study received private mental health care for a psychotic illness and therefore have not been captured in the current study—but this is considered to be

unlikely. Known substance abuse is also most likely to have been underestimated in this study, however, a more accurate assessment can only describe elevated rates than those described here.

6.5 Future research

The current investigation has provided some evidence of the utility of considering genders separately when assessing the data; data should be differentiated for rates of mental illness for men and women and for the gap between onset of the psychotic disorder and the time of offence, and any other characteristic that is sought to be determined for the sample. Future studies would benefit from specificity of offence and homicide offender research should include murder-suicides in the sample. Additionally, comparisons of rates of mentally ill offenders with comparison groups must ensure that identical methodology is utilized for the various samples.

To increase the validity of results, police records need to be cross referenced with reliable mental health data, police statistics as a discrete reference are not a reliable resource for determining mental illness in offenders. Likewise, police databases are an excellent record of prior offending but complete information on variables such as motivation is frequently lacking, and thus any data that has been recorded as “undetermined” or is unclear needs to be followed up with the relevant investigator.

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APPENDIX I: LEAP Data

Coding Sheet for *LEAP* data

1. Offence solved?	Yes =	1
	No =	2
2. Offender over 18 years?	Yes =	1
	No =	2
3. Name of offender		
4. Any alias?		
5. Offender's gender	Male =	1
	Female =	2
6. Date of birth	(DD/MM/YEAR)	
7. Was this a murder / suicide?	Yes =	1
	No =	2
8. Did the offender commit the offence in company with co-offender?	Yes =	1
	No =	2
9. If yes, Co-offender's name?		
10. Co-offender's alias?		
11. Co-offender's gender?	Male =	1
	Female =	2
12. Co-offender's date of birth?	(DD/MM/YEAR)	
13. Age at index offence	(DD/MM/YEAR)	
14. Date of offence	(DD/MM/YEAR)	
15. Weapon utilized	Firearm =	1
	Knife =	2

	Assault without weapon =	3
	Asphyxiation / strangulation =	4
	Assault with a weapon other =	5
	Set fire =	6
16. Relationship between offender and victim	Friend / acquaintance =	1
	Spouse / ex-spouse / de-facto =	2
	Relative other =	3
	Stranger =	4
	Victim is child of offender =	5
17. Prior offence history?	Yes =	1
	No =	2
18. How many victims did the offence involve?		
19. Was the first offence committed a violent one?	Yes =	1
	No =	2
20. Number of sentencing dates prior to the index offence		
21. Number of prior sentencing dates that included a violent offence		
22. If any, how many priors for Assault Police?		
23. Number of sentencing dates that included property offences		

24. Has there ever been an Intervention Order (IO) against the offender?	Yes =	1
	No =	2
25. Did the offence involve a breach of an IO?	Yes =	1
	No =	2
26. Does the offender have a prior conviction for breaching an IO?	Yes =	1
	No =	2
27. Does the offender have a prior conviction that involves alcohol abuse? (e.g., drink driving, drunk in a public place, an offence involving licensed premises).	Yes =	1
	No =	2
28. Does the offender have a prior conviction that involves substance abuse? (e.g., possession of illicit drug, use of an illicit drug, theft of prescription drugs).	Yes =	1
	No =	2
29. How many road traffic convictions does the offender have?		
30. Was the offender's behaviour impulsive, planned or a mixture of	Impulsive =	1

both states? (eg., was there a cooling off period between a dispute and the offence? Was the offender's anger evident during the violence? Was there evidence of planning (e.g., Prior construction of an alibi? Did the offender bring a weapon with him to the crime scene or use a weapon of opportunity?)	Planned =	2
	Mixed =	3
31. What was the offender's motivation?	Revenge =	1
	Argument =	2
	Greed =	3
	Rape =	4
	Thrill kill =	5
32. What was the court disposition?	Murder =	1
	Manslaughter =	2
	NGMI =	3

APPENDIX II: RAPID Data

Coding Sheet for RAPID Data

1. Match name of offender?		
2. Match for alias and date of birth?	(DD/MM/YEAR)	
3. Unique Reference number		
4. Date of offence	(DD/MM/YEAR)	
5. Date of first contact recorded on RAPID	(DD/MM/YEAR)	
6. Date of diagnosis	(DD/MM/YEAR)	
7. Was the initial RAPID contact prior to or post offence date?	Prior =	1
	Post =	2
8. How many days between offence date and initial RAPID contact?	(Days)	
9. How many days between diagnosis and offence date?	(Days)	
10. Admitted to hospital on first contact or attended to in the community?	Hospital =	1
	Community =	2
11. If admitted, to hospital, what was the period of stay?	(Days)	
12. When was the first contact with RAPID post offence?	(DD/MM/YEAR)	

13. How many days between offence and first contact with RAPID?	(Days)	
14. How many Community contacts had the offender had?		
15. What was the primary diagnosis?	Schizophrenia =	1
	Depressive Disorder =	2
	Depression with psychosis =	3
	Anxiety =	4
	Borderline Personality Disorder =	5
	Recurrent Depressive Disorder =	6
	Unspecified Organic Disorder =	7
	Known Substance Abuse =	8
	Post Traumatic Stress Disorder =	9
	Malingering =	10

16. What was the secondary diagnosis?	Schizophrenia =	1
	Depressive Disorder =	2
	Depression with psychosis =	3
	Anxiety =	4
	Borderline Personality Disorder =	5
	Recurrent Depressive Disorder =	6
	Unspecified Organic Disorder =	7
	Known Substance Abuse =	8
	Post Traumatic Stress Disorder =	9
	Malingering =	10
17. Name all other diagnoses	Schizophrenia =	1
	Depressive Disorder =	2
	Depression with psychosis =	3
	Anxiety =	4
	Borderline Personality Disorder =	5
	Recurrent Depressive Disorder =	6
	Unspecified Organic Disorder =	7
	Known Substance Abuse =	8
	Post Traumatic Stress Disorder =	9
	Malingering =	10
18. Do any of the diagnoses relate to Substance Abuse?	Yes =	1
	No =	2

19. Admitted to hospital on subsequent contacts or attended to in the community?	Hospital =	1
	Community =	2
20. Has there ever been a hospital admission?	Yes =	1
	No =	2
21. What have the lengths of hospital stay been?	(Days)	
22. When was the last length of stay?	(DD/MM/YEAR)	
23. Has the offender ever been placed on a CTO?	Yes =	1
	No =	2
24. If so, how many?	Yes =	1
	No =	2
25. Was the offender serving a CTO at the time he/she committed the offence?	Yes =	1
	No =	2
26. If the offender had ever served a CTO, how many days between expiry of CTO and the offence?	(Days)	

APPENDIX III: Ethics Committee Approvals

Department of Human Services

Incorporating: Health, Community Services, Aged Care and Housing

50 Lonsdale Street
GPO Box 4057
Melbourne Victoria 3001
DX210081
www.dhs.vic.gov.au
Telephone: 1300 650 172
Facsimile: 1300 785 859

Our Ref:
Your Ref:

HUMAN RESEARCH ETHICS COMMITTEE
88/06
Ethics Committee Secretariat
Telephone: (03) 9096 5239 Fax: (03) 9096 9176
50 Lonsdale Street
MELBOURNE 3000
Email: research.ethics@dhs.vic.gov.au

13 February 2007

Professor James Ogloff
Director of Psychological Services
Forensicare
Yarra Bend Road
FAIRFIELD 3078

Dear Professor Ogloff

Re: 88/06 - Identifying protective factors for homicide offenders with a psychotic illness

The Department of Human Services Human Research Ethics Committee, at its meeting on 7 February 2007, ratified the approval of your response dated 6 December 2006 in relation to the above project.

[redacted]

DR DIANE SISELY
CHAIR

State Government Victoria

Department of Justice

Corrections Victoria

Strategic Services, Planning Research and Evaluation
22/121 Exhibition Street Melbourne VIC 3000
Telephone: (03) 8684 6620
Facsimile: (03) 8684 6684

Friday, 22 December 2006

Prof James Ogloff
Director of Psychological Services
Monash University

RE: Identifying Protective Factors for Homicide Offenders with a Psychotic Illness

Dear Prof Ogloff

The Planning, Research and Evaluation unit has considered your application to the Department of Justice Research Ethics Committee for Debra Bennett to conduct a data linkage study to identify protective factors for homicide offenders with a psychotic illness. I am pleased to inform you that Corrections Victoria supports your application and the research has the support and endorsement of the Clinical Services Unit and the prisons. Corrections Victoria is responsible for the security of data maintained in offender information systems and treatment files and undertakes to ensure that data collection, collation and matching will be conducted in a legal and authorised fashion by duly supervised and authorised staff.

Corrections Victoria is interested in optimising the utilisation and dissemination of knowledge gained through research conducted in correctional locations. Following the completion of your research, and submission of your final research report to the Research Ethics Committee, Corrections Victoria would appreciate a summary report of your research (or relevant associated publication).

If you have any queries regarding this correspondence you may contact Ann Bruce on 8684 6620. I wish you success in your research endeavour

Sincerely

[redacted]

Ann Bruce
Senior Data and Research Analyst
Research and Evaluation Unit
Corrections Victoria

Forensicare

Victorian Institute of
Forensic Mental Health

Yarra Bend Road
Fairfield Victoria 3078

Locked Bag 10
Fairfield Victorian 3078
DX 212119

Telephone +61 3 9495 9143
Facsimile +61 3 9495 9190
www.forensicare.vic.gov.au

23 August 2006

A/Professor Marjorie Dunlop
Human Research Ethics Committee
Department of Human Services

Dear Professor Dunlop

Re: Identifying Protective Factors for Homicide Offenders with a Psychotic Illness.

Please be advised that the Forensicare Research Committee has considered the above project and has granted the researchers access to patients, patient records and staff of Forensicare for the purpose and duration of the project.

Forensicare requires researchers to comply with the conditions of the Department of Human Services, Human Research Ethics Committee, and to provide written reports during and at the completion of the research.

Yours sincerely

[redacted]

MICHAEL BURT
CEO
FORENSICARE

Department of Justice

Human Research Ethics Committee

Level 21, 121 Exhibition
Street Melbourne 3000
Telephone: (03) 8684 1514
Facsimile: (03) 8684 1525
DX210077

1 March 2007

Reference: CF/07/520

Professor James Ogloff
c/o Deb Bennett
School of Psychology, Psychiatry and Psychological Medicine,
Monash University, 4/4-6 Dobson Street, South Yarra

Re: Identifying Protective Factors for Homicide Offenders with Schizophrenia

Dear Professor Ogloff,

The Department of Justice Human Research Ethics Committee considered the project *Identifying Protective Factors for Homicide Offenders with Schizophrenia*, out of session on Tuesday 27 February 2007 and granted full approval for the duration of the investigation. The Department of Justice reference number for this project is CF/07/520.

You must ensure that the Department of Justice Research Ethics Committee is notified immediately of any matter which arises that may affect the conduct or continuation of the approved project. To enable the Committee to fulfil its reporting obligations, you are asked to provide an Annual Report every 12 months and to report on the completion of your project in January 2008. Annual Report and Completion of Research forms are available on the Justice Research Ethics website.

The Department of Justice would also appreciate receiving copies of any relevant publications, papers, theses or conferences presentations that result from this research.

All future correspondence regarding this project must be sent electronically to ethics@justice.vic.gov.au and include the Department of Justice reference number as well as the project title. Hard copies of signed documents or original correspondence should be sent to The Secretary, Human Research Ethics Committee at the following address: Level 21, 121 Exhibition St, Melbourne, VIC 3000.

Please sign the Undertaking attached and return within ten business days. If you have any queries regarding this application you are welcome to contact me at any time on (03) 8684 1514 or email: ethics@justice.vic.gov.au.

Yours sincerely,

[redacted]

Marilyn Johnson
Secretary
Human Research Ethics Committee

Victoria
The Place To Be

Department of Justice

Corrections Victoria

Strategic Services, Planning Research and Evaluation
22/ 121 Exhibition Street Melbourne VIC 3000
Telephone: (03) 8684 6620
Facsimile: (03) 8684 6684

24 NOV 2006

Ref: CD/06/109148

Professor James Ogloff
Director of Psychological Services
Yarra Bend Road
Fairfield 3078

RE: BC/06/7098 Request for access to PIMS for research purposes

Dear Professor Ogloff,

I have considered your request for post-graduate student Debra Bennett to conduct a data-linkage study on homicide offenders with a psychotic illness and note that the data collation phase will involve accessing the Corrections Victoria information systems for purposes other than those associated with conduct of official duties.

Corrections Victoria will permit the data extraction for this project specifically on the condition that it will be conducted by a duly authorised and quarantined employee of Forensicare, acting under CV supervision, that will remove all identifying information from the data, after matching, and hand only de-identified information to the researchers. The authorised person will be asked to sign a specific deed of confidentiality.

[redacted]

KELVIN ANDERSON
Commissioner

Corrections Victoria values your right to privacy. Personal information received by Corrections Victoria is handled in accordance with the requirements of the Information Privacy Act *2000 and the* Corrections Act *1986. For Privacy enquiries, please telephone (03) 8684 6600.*

State Government Victoria

MONASH University

Standing Committee on Ethics in Research Involving Humans (SCERH)
Research Office

Prof James Ogloff
School of Psychology, Psychiatry and Psychological Medicine
Faculty of Medicine, Nursing and Health Sciences
Caulfield Campus

12 February 2007

2006/848ED: Identifying protective factors for homicide offenders with a psychotic illness

Dear Researchers,

Thank you for the information provided in relation to the above project. The items requiring attention have been resolved to the satisfaction of the Standing Committee on Ethics in Research Involving Humans (SCERH). Accordingly, this research project has provisional approval.

Final approval will be granted when SCERH receives an approval certificate from the Department of Justice Human Research Ethics Committee.

Thank you for keeping the Committee informed,

[redacted]

per: Lyn Johannessen
Acting Human Ethics Officer (on behalf of SCERH)

Cc: Deb Bennett

Postal - Monash University, VIC 3800, Australia
Building 3E, Room 111, Clayton Campus, Wellington Road, Clayton
Telephone +61 3 9905 5490 Facsimile +61 3 9905 1420
Email scerh@adm.monash.edu.au www.monash.edu.au/research/ethics/human/index.html
CRICOS Provider No. 00008C ABN 12 377 614 012

Appendix A

VICTORIA POLICE

Research and Project Governance
Corporate Strategy and Performance Department

Level 6, Building C, 637 Flinders Street
Melbourne 3005
Victoria, Australia
DX 210096
Telephone (03) 9247 3385
Facsimile (03) 9247 6401
Email david.ballek@police.vic.gov.au
www.police.vic.gov.au

12 July, 2006

Reference RCC 460

Ms Debra BENNETT
9th Floor
412 St Kilda Rd
Melbourne 3004

Identifying Protective Factors for Homicide Offenders with a Psychotic Illness

Dear Deb,

I have the pleasure of advising you that the Victoria Police Research Coordinating Committee has approved your request to undertake the above research involving Victoria Police.

Please complete and return the accompanying Conditions of Access form at your earliest convenience.

Once the signed Conditions of Access form has been received, you will be notified of the process for commencing your data collection.

Please do not hesitate to contact me by phone (9247 3385) or facsimile (9247 6712) if you have any questions you wish to raise.

Yours faithfully,

David Ballek, PhD
On behalf of the Victoria Police Research Coordinating Committee