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Recidivism Among Mentally Disordered Offenders: An Ontario Study

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Recidivism among mentally disordered offenders: An Ontario study

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Abstract

The de-institutionalization of mental health facilities believed to be responsible for the "criminalization" of mental illness has lead to a large number of persons with a mental illness to come into contact with the correctional system. Once labelled as an 'offender', it is difficult to gain access to mental health resources. Consequently, a significant number of mentally ill persons who are also criminal offenders find themselves caught in a vicious cycle of incarceration, release and subsequent re-incarceration, without ever benefiting from psychiatric treatment. Recidivism is the most commonly used measure of the performance of the correctional system; however, there is little research on the rates of recidivism of mentally ill offenders within corrections. Multiple logistic regression revealed that mentally disordered offenders were twice as likely as non-mentally disordered offenders to have re-contact with the provincial correctional system; however, survival analysis showed that they came into re-contact at the same rate.

Introduction

The de-institutionalization of mental health facilities that first began in Canada in the 1970s is believed to be responsible for the dramatic increase in the number of persons with a mental illness coming into contact with police, the courts, and the correctional system (Sealy & Whitehead, 2004). Particularly for persons with a mental illness who are poor, without family supports, or who are simply too ill to live without assistance, the mental health system has failed, leaving these individuals untreated in the community. Specifically, this population is often left at risk of experiencing a mental health crisis which increases their likelihood of being brought into contact with police and ultimately the criminal justice system as a whole.

Even more disconcerting, mentally ill persons who come into contact with the criminal justice system find that once labelled as an 'offender', it is extremely difficult to gain access to mental health resources either at forensic mental health facilities, or in the community (MOHLTC, 2006). Consequently, a significant number of mentally ill persons who are also criminal offenders find themselves caught in a vicious cycle of incarceration, release and subsequent re-incarceration, without ever benefiting from long-term or consistent psychiatric treatment. Not usually 'ill enough' to be considered a 'forensic patient' according to the terms employed by psychiatric treatment facilities (MOHLTC, 2006), but considered too 'dangerous' as a criminal offender to be accepted for treatment by many community health facilities, this large number of mentally ill offenders continuously cycle and re-cycle through the correctional system.

Most people with a mental illness do not commit crimes; nowever, persons with diagnosed mental illnesses are over-represented in correctional facilities in Canada and abroad (CIHI, 2008). Recent estimates from an Ontario prevalence study (Brown et al.,

2006) show that the proportion of individuals in Ontario correctional facilities with a mental illness is 30% and 15% of those suffer from a serious mental illness (depression, bi-polar disorder, schizophrenia). At any time, as many as 1,200 offenders in Ontario correctional facilities suffer from a serious mental illness (Brown et al., 2006).

This phenomenon of high prevalence of mentally ill individuals being housed in correctional facilities has been described as the "criminalization" of mentally disordered behaviour (Abramson, 1972). That is, behaviours that were considered legal and that were dealt with through psychological hospitalization have become illegal and are now managed through the criminal justice system, imposing a criminal definition rather than a psychiatric definition on an individual behaviour (Abramson, 1972). Thus, the criminal justice system has become the social control system charged with the management of the mentally disordered.

Mentally ill offenders represent a serious and growing problem for correctional staff in both provincial and federal correctional centres across Ontario which are not designed or equipped to manage persons with a mental illness (Link et al., 1992). Mentally disordered offenders can have a serious negative impact on the operation of correctional facilities if not properly treated and managed. They are more likely to engage in 'disruptive' behaviour including verbal outbursts and aggressive behaviours than other inmates, potentially causing harm to others (both staff and other inmates), or to themselves (Link et al., 1992). Research has also shown that correctional officers view mentally disordered offenders less favourably than non-mentally ill inmates, which may, in turn, lead to differential treatment for these offenders (Welsh and Ogloff, 2003). Moreover, mentally disordered offenders are much more likely to be victimized in prisons, both physically and sexually than non-mentally ill offenders (Welsh and Ogloff, 2003).

Incarceration may be a traumatizing experience for all inmates, including those with a mental illness. Clinically, this means that their illnesses are likely to simply get worse. In prison, existing mental disorders may be exacerbated by stressors such as separation from social supports, concern for personal safety, and a high risk of violence. Of concern, these mentally disordered offenders may have insufficient coping responses to this stress and may experience symptoms that manifest as behavioural problems. These behaviours may also re-occur upon release from prison where there is an inadequate support network available to these individuals in the community (Feder, 1991).

Failure to treat mentally disordered offenders while in prison may put correctional staff and other prisoners at unnecessary risk due to clinical and psychological factors associated with their illness. However, the Ontario Ministry of Community Safety and Correctional Services have deemed only sentenced offenders eligible for its accredited programming. It also requires that inmates stay the standard six months necessary for intensive programming being piloted in Ontario, ruling out any offenders with shorter lengths of stay in custody (Kitchin, 2005). Both policies dramatically limit treatment options for mentally ill offenders who are often in remand or receive short sentences.

In sum, many jails and correctional centres are not properly equipped to deal with mentally disordered offenders, either in terms of treatment while incarcerated or follow-up treatment in the community. Without appropriate treatment while incarcerated, or proper discharge planning upon release, these individuals will likely once again come to the attention of law enforcement officials. Indeed, gaps in service between correctional centres and community mental health services arguably also contribute to the rates of recidivism of this group.

The term recidivism is generally used to describe such situations in which an individual commits a new criminal offence after already having been sentenced for a previous offence (Linden, 2004). Of importance to criminal justice practitioners is designing and implementing effective correctional programs for offender populations, the goal of which is often to lower rates of recidivism (Dowden and Andrews, 2000). Within this framework, recidivism rates, or rates of re-contact with the correctional system, have been argued as serving as a general measure of the rehabilitative effect of the correctional system on sentenced offenders (Brown et al., 2000). This rehabilitative effect is the indirect result of policies, programs, and activities designed to impact or lower recidivism. This is however, only one measure of prison effectiveness.

Policies and programs are unlikely to directly affect rates of recidivism due to the complex nature of re-offending. They are more likely to indirectly affect recidivism by reducing the risks of re-contact with the criminal justice system through, for example, educational and vocational programs designed to improve chances of employment upon release – a protective factor against re-offending. Information about re-contact with the correctional system can help guide program and policy decisions in an effort to reduce further re-contact. Recidivism rates can also serve as a measure of the cost-efficiency of the correctional programming in reducing re-admissions and the financial impact that they have on the system (Brown et al., 2000).

Unfortunately, there is a scarcity of research being conducted on the rates of recidivism of mentally ill offenders within correctional facilities. Overall, there are many methodological problems in studies on psychiatric disorders in prisoners, such as non-random sample selection, measurement issues with regards to diagnostic categories, and inadequate sample sizes (Bland et al., 1998). Studies have used different populations,

different research methods, different definitions of mental illness, or different ways of collecting information about mental illness (e.g., assessment instruments vs. official diagnoses). Furthermore, few studies have specifically examined the recidivism rates of mentally disordered offenders released from prison and even fewer have compared their recidivism rates to those of non-mentally disordered offenders. For studies that have examined this issue, cross-research comparisons are troublesome due to the many different recidivism rates that can be computed and the differing definitions of the construct of recidivism; thus, generalizations about recidivists are almost impossible (Andersen, 2004; Brink et al., 2001).

The purpose of this study is to examine the re-contact of mentally disordered offenders with the provincial correctional system in Ontario in relation to the general population of non-mentally disordered offenders. Specifically, this thesis purports to assess whether mentally ill offenders are more likely than non-mentally ill offenders to have re-contact with Ontario correctional institutions. Further, the rates of re-contact of those who return to the provincial correctional system will be compared across these two offender populations.

To this end, Part I of this study – the literature review – will discuss the problem of mentally disordered offenders in prisons and the lack of treatment available in these institutions. Further, it will address the relationship between mental illness and crime as well as the relationship between mental illness and violence. It will conclude with a presentation of the research relevant to mentally disordered offenders and recidivism. Part II – the methodology section – will describe the population and sample of interest, as well as the primary data sources. The types of analyses which will be carried out will also be discussed as well as the principal measures used in the analyses. Part III – the results section – will

present the results of the study including descriptive statistics, inferential statistics and multivariate analysis models. Part IV – the discussion – will summarize the principal findings as well as discuss their implications with regards to the treatment of mentally disordered offenders in prisons. Limitations and future research will also be addressed. This study will conclude in Part V with some concluding comments on the topic of mental illness in prison more generally.

Literature review

De-institutionalization and criminalization

Beginning in the 1970s in Canada and elsewhere, the de-institutionalization of mental health facilities is believed to be responsible for the dramatic increase in the number of persons with a mental illness coming into contact with the police, the courts, and the correctional system (Sealy and Whitehead, 2004) It has been estimated that 75-85% of mental health beds were closed over a 20-year period beginning in the 1950s across North America, Britain, and Australia with the assumption that the burden of care would then be placed on community mental health facilities (Udechuku et al , 2005)

Further, behaviours that were once managed by involuntary psychiatric hospitalization became less easily managed due to new restrictions that were placed on civil commitment in the 1970s Still faced with a need to manage undesirable behaviours, agents of social control (i e , the criminal justice system) imposed a criminal definition on the deviant behaviour that was once managed by the mental health system This trend was termed the "criminalization" of mentally disordered behaviour (Abramson, 1972) It is a process whereby behaviours that were considered legal and that were dealt with through psychological hospitalization became illegal and were now managed through the criminal justice system That is, a criminal definition rather than a psychiatric definition was subsequently imposed on individual behaviours (Abramson, 1972) In many cases it is the symptoms of mental illness that bring these individuals to the attention of the police (CIHI, 2008) In turn, mentally disordered individuals would be arrested on charges such as trespassing or disorderly conduct and in some cases be detained in jail as opposed to being civilly committed (Fisher et al , 2006)

Additionally, in emergency situations, law enforcement officials may be forced to arrest and/or detain individuals until psychiatric assistance is available. Research conducted in the 1970s also indicated that patients released from psychiatric hospitals had significantly higher arrest rates than those of the general population (Cocozza, et al., 1978; Rabkin, 1979; Lurigio and Swartz, 2000). Without sufficient mental health resources, "the social control 'safety net' for all kinds of problem[s] becomes, by default, the local jail" (Fisher et al., 2006, p.547).

To illustrate, between the 1950s and 1990s the number of beds in U.S. state psychiatric hospitals dropped from 340 to 30 per 100,000/population. During this same time period, prison populations increased from around 100 to 450 per 100,000/population (Grudzinskas et al., 2005). Similar trends have been found in Canada. In the 1990s, as the total number of days in inpatient care in mental hospitals decreased, the number of those with a mental illness coming into contact with the law increased all across the country. Since 1995, there has been an increase of 27% in the number of persons with a mental illness admitted to correctional facilities (MOHLTC, 2006).

Further, admissions to forensic hospitals are difficult because beds are lacking in numbers. In Canada, the Ministry of Health and Long-Term Care (MOHLTC, 2006) conducted a survey which revealed that, at any point in time, around 85 mentally disordered individuals may be awaiting a forensic bed. The longer that one awaits treatment, the more deteriorated one's mental health state can become. Moreover, psychiatric hospitals are governed by strict mental health law reforms that make involuntary commitment of the mentally ill to these hospitals very difficult (Seto et al., 2004).

Thus, the criminal justice system has become the social control apparatus for dealing with mental disorders instead of the mental health system (Fisher et al., 2006). With

this conceptualization, the mental illness is not necessarily the primary cause of their offending, but the management of mental illness in the larger system and deficiencies in the management of mental illness that is responsible for their criminal involvement (Fisher et al., 2006). Without appropriate care, persons with mental illness may deteriorate until their behaviour is so far from normal or so disruptive that it may be considered criminal (APA, 2004).

Mentally ill in prisons

According to Schneider (2000), the number of mentally disordered offenders in correctional institutions has nearly doubled in the past decade in Canada (cited in Seto et al., 2004). This has occurred despite overall declines in criminal charges according to Statistics Canada (Seto et al., 2004). In Canadian federal prisons in 2004, 7.7% of inmates had reported psychotic disorders, 24.5% depressive disorders, and 44.2% anxiety disorders. Note that these figures exclude all provincial prisons and remand centres (Arboleda-Flórez, 2005). Provincial rates for mentally disordered offenders requiring clinical intervention have been shown to range between 15% and 20% (MOHLTC, 2006).

Moreover, various sources have indicated that there is a higher prevalence of mental illness among incarcerated individuals than among the general population (CIHI, 2008). To illustrate, surveys by Hodgins (1995), and Brink et al. (2001) show that "rates of mental disorder among correctional inmates in North America far exceed those of the general population" (cited in Blackburn, 2004, p.299).

In Canada, a recent study was conducted from May 2005 to August 2007 in this province which aimed at determining the prevalence and psychiatric care needs of adult offenders in jails and correctional institutions in Ontario (Brown et al., 2006). Estimates from this study show that the proportion of individuals in Ontario provincial correctional facilities

with a mental illness is 30%, and 15% suffer from a serious mental illness (*i.e.*, depression, bipolar disorder, schizophrenia). Further, it is estimated that at any time, as many as 1,200 offenders in Ontario provincial facilities suffer from a serious mental illness (Brown et al., 2006).

This recent problem is not unique to Canada. In the U.S., Teplin and Voit (1996) claimed that offenders with mental disorders comprised 10% to 15% of U.S. state prison populations at any given time. Moreover, Lovell and Jemelka (1998) estimated the percentage of mentally disordered offenders to be between 10% and 20%. Teplin (1990) conducted a study to determine the prevalence of mental illness within Cook County Jail in Chicago and found that 1 out of 15 admissions to the jail (6%) was suffering from a severe mental disorder upon arrest; this was discounting those who were diverted, in addition to those who went undiagnosed or unnoticed. As such, this figure is likely to be an underestimate of the true percentage of mentally ill offenders in these correctional facilities.

Mental illness and crime

Although the mentally ill are overrepresented in correctional facilities across Canada and elsewhere, the empirical support for a direct linkage between mental illness and criminal behaviour is lacking. It is important to note that one may not necessarily affect the outcome of the other. It is possible that one has simply been defined in terms of the other, i.e. that the same symptoms of mental illness are deemed criminal. In this sense, the two are intertwined as their behaviour may simply be labelled as problematic or criminal and is dealt with in the criminal justice system and effectively criminalizes the mentally ill.

Keeping the above concerns in mind, a number of studies have reported a relationship between mental illness and crime (Hodgins, 1992, Fisher et al., 2006; CIHI, 2008). However, this relationship has generally been shown to be correlational as much of

the research is cross-sectional rather than longitudinal. The potential causal relationship, and time trajectory (temporal sequence), between mental illness and incarceration remain unknown. As such, it is not clear whether mental illness is a leading or direct cause of criminal involvement with the criminal justice system or vice versa (CIHI, 2008; Fisher et al., 2006).

Illustrative of the problem of drawing causal inferences, for studies pertaining to mental health, most look at mental health as a determinant of crime, and not as an outcome. Specifically, mental illness is seen as the independent variable which leads to criminal activity. However, this temporal sequence has been questioned. For example, research has shown that victims directly affected by crime (e.g. domestic violence, child abuse) may experience post-traumatic stress disorder, depression, substance abuse and suicidal behaviour (CIHI, 2008).

Similarly, a population study conducted by Hodgins (1992) in Stockholm indicated that persons with serious mental disorders were more likely to have committed crimes than those without a mental health diagnosis. However, most of these offences were committed before the age of 18 and before the onset of symptoms of the mental disorder (Rice and Harris, 1997). Thus, it was found that criminal activity preceded mental illness. These results do not support a causal role for mental illness with criminal behaviour.

Further limitations restricting causal statements are rooted in the populations generally under study. For instance, risk factors associated with delinquency have mostly been discerned from studies focussing on children and youth. As such, what remains to be known is which mental health-related factors are associated with criminal behaviour among adults, especially those with a mental illness (CIHI, 2008).

Finally, research on the relationship between mental illness and crime has also had to contend with a number of extraneous factors which are also correlated with these variables. For example, many studies examining the relationship between mental disorder and crime tend to focus on the criminal history of psychiatric patients. According to Ontario Mental Health Reporting System (OMHRS) data, of all those admitted to mental health beds between April 1, 2006 and March 31, 2007, 28% of patients were reported to have some criminal history. Upon admission, data show that patients with a criminal history reported a more pronounced history of mental illness and service use. Even after controlling for income, education, age and sex, rates of schizophrenia were almost one and a half times higher for patients with a criminal history and rates of substance abuse were roughly twice as high for patients listing some criminal activity. They also reported a significantly greater victimization rate than patients with no criminal history (38% vs. 26% respectively). However, other risk factors of patients with a criminal history include having failed or dropped out of school (41% vs. 25%), having suffered a serious injury or physical impairment (28% vs. 22%), and reports of dysfunctional relationships with immediate family (44% vs. 34%). As such, it is unclear whether any of these factors may constitute alternative explanations for the relationship between mental illness and criminal history, suggesting a spurious relationship. Illustratively, some researchers have found that persons with a mental illness may commit crimes because they are poor, not because of their mental disorder (Fisher et al., 2006).

This limitation is further exacerbated when one considers certain mental illnesses such as substance use disorder. Specifically, substance use disorder is a mental illness that is also considered to be criminal (APA, 2004). In addition, substance use is considered to be a risk factor for both mental illness and criminal behaviour, and is furthermore related to other factors shown to be related to criminal involvement, for example, homelessness

(Draine et al., 2002). Thus, it is possible that substance use relates to both mental illness and criminal activity which suggests that the relationship between mental illness and crime may be spurious or that behaviours that are criminal can also be those that manifest as symptoms of mental illness. Thus, this relationship is more complex than one causing the other.

As such, much of the literature on the relationship between mental illness and crime has remained at the level of correlational research (Hodgins, 1992; Fisher et al., 2006; CIHI, 2008). Using the previous example as a valuable illustration, substance abuse and crime are shown to be correlated in a variety of ways. The offender may be under the influence of a substance during the commission of a crime, the crime may be committed to obtain alcohol or drugs, or the crime may be committed to obtain money or materials to purchase alcohol or drugs. According to Beckett & Sasson (2000), when persons with a mental illness are also addicts and/or alcohol abusers, their ability to make rational decisions are compromised by their illness and addiction (cited in CIHI, 2008). Lacking the ability to make risk/benefit calculations, they can become entangled with the criminal justice system.

Further, according to OMHRS data, patients with a concurrent substance abuse and mental disorder were more than twice as likely to report having a criminal history as patients without a concurrent disorder. Patients diagnosed with a substance abuse disorder were more than two times more likely to have a criminal history after controlling for education, income, age and sex (CIHI, 2008).

In fact, Kitchin (2005) conducted a study involving a sample of 168 sentenced and remanded respondents drawn from all five provincial adult correctional facilities in Nova Scotia. Findings from this study show that substance abuse and crime are positively correlated which is consistent with what research has reported elsewhere. It was also found

that 77% of offenders within this sample were shown to have sought help for their addictions prior to incarceration which indicates that they would welcome treatment and that programming should be made available to them while in custody (Kitchin, 2005).

Overall, the relationship between crime and mental disorder has not been shown to be causal. Specifically, the simple correlation between mental illness and involvement with the correctional system, along with the idea that it is the behaviour of the mentally ill being labelled as criminal, would suggest that mentally ill offenders are perhaps more likely to continue to experience re-contact with correctional institutions. This hypothesis seems even more likely when examining the treatment that is provided to mentally disordered offenders while incarcerated It should be noted however that data on the specific treatment of offenders are rare (Fisher et al., 2002).

Treatment of the mentally ill in prisons

Because the mentally ill comprise a large number of individuals in correctional populations, they present a unique problem to correctional staff in provincial jails and correctional centres in Canada with regards to treatment programs, or lack thereof. Cote et al. (1997) claim that approximately 1.5 to 3 times more persons with a mental illness can be found in U.S. state and federal prisons than in public psychiatric institutions. If this is true, one would assume that prisons would be well equipped to deal with mentally disordered individuals (cited in Lurigio and Swartz, 2000). However, this is not the case. First, many mentally ill offenders are left untreated because they are not identified as mentally ill. To illustrate, Birmingham et al. (1998) found that three quarters of the remand prisoners who were identified as mentally ill by the researchers were not identified as mentally ill upon screening by correctional staff.

There are even further deficiencies with the correctional system when treatment is provided. In Canada, "services delivered provincially are sometimes inadequate" (Kitchin, 2005, p.515). The Ontario Ministry of Community Safety and Correctional Services have deemed only sentenced offenders eligible for its accredited programming. It also requires inmates to waive potential early release in order to accommodate the standard six months necessary for intensive programming being piloted in Ontario (Kitchin, 2005). The average provincial custodial sentence across Canada was reported to be approximately three months according to Johnson (2004) (cited in Kitchin, 2005). Hence, few mentally ill offenders are receiving treatment or programming as many of these offenders are often in remand or receive short sentences.

According to the Ontario Ministry of Community Safety and Correctional Services website (2010), the ministry claims to provide offenders with the following treatment programs: anger and aggression control; anti-criminal thinking programs (Change is Choice); assertiveness training; communication skills; domestic violence groups; rehabilitative work experience programs; job-readiness training; life management skills; literacy; parenting skills; sex offender programs; sexual abuse counselling; stress management training; substance abuse groups; and victim awareness. Nowhere on this list is there any form of programming directed specifically towards mental illness. While treatment programs for mentally disordered offenders may still exist and are simply not publicized, this list may still give valuable insight into the programming priorities of this Ministry. It has been shown that caring for mentally ill prisoners costs the correctional system far more than caring for the general population of offenders (APA, 2004).

For mental disorders, the goal of treatment generally is to reduce the distress from the mental illness through reducing symptoms associated with it, but with correctional

treatment the goal of treatment is to reduce recidivism (CIHI, 2008; Welsh and Ogloff, 2003). These competing goals of treatment may have a negative effect on the rehabilitation of mentally disordered offenders, leaving their mental illness untreated. Moreover, a lack of trained staff, including doctors and nurses, leaves those that remain in correctional institutions untreated (cited in Reed, 2002). Common types of correctional treatment for offenders in general include living skills, anger management, substance abuse and basic education and vocational training (APA, 2004; Welsh and Ogloff, 2003).

Thus, even when correctional treatment is provided, there is very little focus on treatment of the mental disorder which may in fact play an important role in involvement with the criminal justice system to begin with. In a national survey conducted by Torrey et al. (1992) more than 20% of the American jails claimed to have no access to mental health services; moreover, they had no information regarding whether or not those with a mental illness received any sort of follow-up care upon release (cited in Lurigio and Swartz, 2000). Steadman and Veysey (1997) found similar results in their survey of over 1,500 U.S. jails, where most respondents (80%) claimed that only 10% or fewer of the inmates actually received any kind of psychiatric care while in the jails (cited in Lurigio and Swartz, 2000).

These findings have been corroborated by Beck and Maruschak (2001). Many U.S. state public and private adult correctional facilities reported that they did not provide any mental health services to inmates: only 1.6% of all inmates, or roughly 10% of all inmates identified as mentally ill, were receiving 24-hour care in special housing or a psychiatric unit; and 13% of inmates, or about 79% of mentally ill offenders, were receiving mental health therapy or counselling services on a regular basis by a trained professional. It was also reported that 10% of all inmates were receiving psychotropic medications (Beck and Maruschak, 2001).

Multiple studies have indicated that psychotropic medication is the most common form of treatment for incarcerated mentally disordered offenders (APA, 2004; Welsh and Ogloff, 2003). The problem for mentally ill offenders is that pharmaceutical treatment is directed towards suppressing symptoms rather than managing the illness, leaving the offender with few coping responses to the illness. This, in effect, leaves the illness undertreated (APA, 2004; Welsh and Ogloff, 2003). Further, not all mentally disordered offenders respond equally to this type of medication, and other factors, such as social and problem-solving skills deficits arising from their symptoms, also contribute to difficulties experienced by these individuals. Thus, drug treatment alone may not be enough (Welsh and Ogloff, 2003). Not surprisingly, some researchers (Feeley and Simon, 1992) have questioned drug-treatment alternatives, viewing these measures as cost-effective ways to maintain control over troublesome populations, rather than a form of treatment (cited in Amoretti and Landreville, 1996).

Without proper treatment, behaviours that brought the mentally ill to the attention of the criminal justice system to begin with will likely persist while incarcerated. In fact, this inmate population is at increased risk of experiencing more severe symptoms of mental illness while incarcerated, given the increased stress of prison and their lack of ability to cope (Kitchin, 2005).

Research has also shown that correctional officers view mentally disordered offenders less favourably than non-mentally ill inmates, as they may be stigmatized due to actions and behaviours that may seem non-normative. This is perhaps due to difficulties in managing the mental illness specifically. In fact, "inmates with mental illnesses usually stay in jails longer than other prisoners" (APA, 2004, p.5). On average, they are released later due to the continued presence of symptoms that manifest as behavioural problems. A study

comparing mentally disordered offenders to the general population of inmates found that the mentally ill group showed more disciplinary infractions while incarcerated than their non-mentally disordered counterparts (Feder, 1991).

Even more disconcerting, mentally disordered offenders are much more likely to be victimized in prisons, both physically and sexually than non-mentally ill offenders contributing to their existing illness (Welsh and Ogloff, 2003). This suggests that this group may be even further neglected once involved with the correctional system. Thus, with these stressors in addition to the mental illness, it is likely that upon release, these offenders will be even more likely to come into re-contact with the correctional system. This hypothesis is especially compelling when considering the lack of community services that mentally disordered offenders have access to upon release.

Mentally ill in the community

Once offenders are released back into the community, they may often require follow-up services and access to mental health services to remain stable and functional in their day-to-day routines. However, regardless of size, few correctional facilities offer case management services to link mentally ill inmates to community services upon release (Welsh and Ogloff, 2003). Very few U.S. state and federal jails provided the detainees with any kind of information regarding community mental health and/or social service options available to them upon release (Lurigio and Swartz, 2000). Unfortunately, "successful reintegration plays an important role in relapse prevention and crime reduction" (Kitchin, 2005, p.515). Without gradual reintegration support, mentally disordered offenders, much like the general population of inmates, are likely to be arrested again, perhaps even more likely due to the criminalization of their behaviour.

As mentioned earlier, mentally ill offenders have been shown to have more disciplinary infractions while incarcerated than non-mentally disordered offenders. These behaviours may also re-occur upon release from prison where there is an inadequate support network available to these individuals in the community (Feder, 1991).

One issue of concern for mental health care facilities in the community with mentally disordered prison populations in particular, however is one of dangerousness. Such concerns may, in turn, lead to treatment refusal in the community

Mental disorder and violence

Clinical conceptualizations of dangerousness reflect concern about potential harm to others. Dangerousness however, is difficult to define as it involves both psychological and behavioural risks that predispose someone to physical aggression and violent behaviour. Some of these more 'dangerous' clients may require mental health treatment in a secure environment. Forensic hospitals in Ontario have been put in place to house these more dangerous populations. However, many forensic hospitals do not want to have 'dangerous' offenders among their clients (Hartford, 2003). The concept of dangerousness is very subjective and it is not always clear what is meant by the term or when used by different people, whether they mean the same thing. Within the criminal justice system, violent or sexual offending are the most common perceptions of dangerousness; however, these offences cover a broad ranges of more specific acts. Other factors must also be considered such as degree of bodily harm or frequency of behaviour along with situational considerations as well as mental capacity. Furthermore, the public is disproportionately concerned with the risks posed by persons with a mental illness (Pinard and Pagani, 2001). Perceived social irregularities or odd or deviant behaviours may be seen as threatening (Fisher et al., 2006; Pinard and Pagani, 2001).

Porporino and Motiuk (1995) argue that there may exist "biased presumptions of greater risk" for violence and other offending behaviour among inmates with a mental illness (Porporino and Motiuk, 1995, p.2) as it may be that the general public see their behaviour as incomprehensible or unpredictable which may provoke fear. Thus, they are thought to be 'dangerous'. Associating violent criminal activity with mental illness contributes to societal misperceptions about mental illness, especially since there is no causal linkage between the two, which may lead to treatment refusal in the community (APA, 2004). Community agencies will sometimes inaccurately assess the risk of violence among mentally ill offenders and overestimate their professional liability and are thus, reluctant to treat mentally ill offenders (Lovell et al., 2002).

This reluctance may seem justified as a number of studies report a link between mental illness and violence (Silver et al., 2008; Arboleda-Flórez, 1998; Link et al., 1992; Bland and Orn, 1986; Rabkin, 1979). This relationship is important for public safety considerations both within the prison and upon release to the community, as protection of the public is of utmost importance (Ontario Ministry of the Attorney General, 2005).

Similar to the research on the relationship between mental illness and crime though, methodological problems limit the confidence that we can actually have in the link between mental illness and violence. For instance, most studies examining the risk of criminal and violent behaviour by mentally ill individuals focus on the behaviours of prior psychiatric patients (Brink et al., 2001; Hodgins et al., 1996). Of the studies that do focus on offender populations, mentally disordered offenders are generally not compared to the general population of inmates (Lovell et al., 2002). In addition, indicators of violence vary across studies. For example, some studies look at official data on the type of offence as an

indication of violence, whereas others look at self-reported violent behaviours rendering general or broad conclusions problematic (Feder, 1991; Lovell et al., 2002).

Further, the findings have been mixed. In Rabkin's (1979) study, mentally disordered offenders were shown to have high arrest rates for felonies, specifically violent crimes against the person. However, according to the American Psychiatric Association (APA) (2004), out of roughly one million persons with a mental illness in the U.S. jail system, the majority (70%) are incarcerated for non-violent offences (APA, 2004).

In fact, research on the relationship between mental illness and type of offence is difficult to interpret. Motiuk and Porporino (1991) found that there was a significant correlation between mental illness and type of crime. Conversely, in a Canadian prevalence study of mental illness in a forensic setting by Arboleda-Floréz (1994), the prevalence of mental illness was not significantly correlated with type of crime (cited in Brink et al., 2001). These studies however, did not compare the mentally disordered offender group to non-mentally ill offenders. Further, there are no studies examining the relationship between offence type and mental disorder in the provincial population.

It would also seem that the type of population under study may have an impact on the findings. According to Brown's (2008) summary of the research on offenders released from prison, mentally disordered offenders were less likely than other inmates to commit a violent offence. Likewise, a study conducted by Lovell et al., (2002) with 337 mentally disorders offenders released from prison showed that mentally disordered offenders who were serving sentences for serious felonies rarely committed serious violent crimes within the 27 to 55-month recidivism follow-up period after release. Upon release the majority were convicted of less serious crimes, such as minor crimes against the person and community supervision violations (Lovell et al., 2002).

In contrast, a comparison of psychiatric patients and community residents in New York conducted between 1979 and 1982 by Link et al. (1992) showed that psychiatric patients had higher prevalence rates than did community residents for the following: official arrests for violent offences, hitting others, weapon use, fighting, hurting someone badly in a fight, official arrests for all offences, and self-reported arrests. A study in Denmark conducted by Hodgins et al. (1996) similarly found a higher prevalence of violence among men and women who had prior psychiatric hospitalizations than those who did not. One of the few studies comparing mentally disordered offenders to the general population of inmates released from correctional facilities also found that mentally disordered offenders were significantly more likely to have a violent offence as their current conviction and to have been previously arrested for a violent crime than non-mentally disordered offenders (Feder, 1991).

One explanation for the relationship between mental illness and violence is rooted in the characteristics of certain mental disorders. For instance, the experience of hallucinations, delusions, and being in a state of active psychosis are often cited as the causes for violent criminal behaviour (Link et al., 1992). In a review of Canadian and international literature it was estimated that roughly half of offenders who suffer from psychoses committed a violent crime while under the influence of delusions (CIHI, 2008). Link et al. (1992) similarly found that when former psychiatric patients were experiencing psychotic symptoms their risk of violence was significantly increased. When they were not experiencing psychotic symptoms, their risk of violence was no higher than the risk in the sample of community residents who were not mentally ill. The strength of these associations has led many to believe that the association is causal, that is, that mental disorder causes violent behaviour (Link et al., 1992). However, temporal sequence has not been thoroughly investigated; thus, causality cannot be determined nor is it as simple to say as one causes

the other as these may be, as Bonta et al. (1998) have noted, "individuals who have a mental disorder and who have also committed acts that triggered intervention by the criminal justice system" (p.23).

Illustratively, one Canadian study looked into the relationship between mental disorder and violence by surveying a representative sample of adults living in the community (Bland and Orn, 1986). The sample consisted of 1,200 Edmontonians and reported statistical associations between violence and mental disorders. The three diagnostic categories studied included antisocial personality disorder, major depression, and alcohol abuse/drug dependence. Persons with one or more of these diagnoses were almost seven times more likely to be involved in violent behaviour than those without one of these disorders. In particular, the risk of violence was greatly elevated among those diagnosed with a co-occurring alcohol abuse disorder. However, this study was unable to establish temporal sequence between mental disorder and violence, undermining any causal inference (cited in Arboleda-Flórez et al., 1996).

The findings become even less clear when one compares the impact of specific mental illnesses on violent behaviour. For instance, a survey conducted in the United States (Swanson et al., 1990) found that more than half of the individuals reporting violent behaviour in the preceding year met the criteria for a psychiatric disorder compared to 19.6% of non-violent respondents (cited in Lurigio and Swartz, 2000). Individuals in the community with any psychiatric disorder were more likely to engage in assaultive and violent acts compared to those who did not have a psychiatric disorder. However, some diagnostic categories such as anxiety disorder, affective disorder, and schizophrenia showed no risk, or only a slightly elevated risk of violence. In contrast, those with substance abuse disorders were at highly elevated risk of violence and also appeared to commit more severe acts of

violence. This finding suggests that individuals are at greater risk of being assaulted by someone who abuses substances rather than someone who is suffering from a major mental illness such as affective disorder, anxiety disorder, or schizophrenia (Arboleda-Flórez et al., 1996).

Other moderators or mediators must also be considered. For example, it is possible that symptoms of mental illness may be incomprehensible to others and may consequently cause annoyance or fear which may lead others to attempt to physically control these individuals. This, in turn, may anger the mentally disordered individual, leading to violence. Reactions towards this group of offenders which may not be appropriate for dealing with these individuals, then, may be leading to aggressive responses. Thus, qualitatively, there can be many other factors at play.

Overall, it is uncertain to what extent inmates with a mental illness pose a greater risk of violence or other types of offences than inmates who are not mentally ill. Mentally disordered offenders may not be 'dangerous' in terms of violent behaviours. However, if persons with a mental illness become disruptive or disorderly in the community, they may come to the attention of law enforcement (Hartwell, 2004).Second, mentally disordered offenders are often isolated from community services. In the case that this group of offenders is considered to be too dangerous as a criminal offender to be accepted for treatment in the community (Lovell el al., 2002), these mentally disordered offenders may continuously cycle and recycle through the correctional system. Gaps in service between correctional centres and community mental health services arguably also contribute to the rates of recidivism of this group.

With little or no treatment while in prison, the harmful effects of the correctional environment further exacerbating pre-existing mental disorders and the lack of follow-up in

the community, the mental illness which initially brought the offender in contact with the correctional system is likely to continue to exert the same effects on the offender once released, thus recycling through the correctional system.

At least theoretically, there is every reason to think that mentally ill inmates – once released – will have re-contact with correctional institutions. First, there appears to be little treatment available for mentally disordered offenders while in prison. As such, their symptoms of mental illness are likely to persist upon release. In fact, this inmate population is at increased risk of experiencing more severe symptoms of mental illness while incarcerated, given the increased stress of prison and their lack of ability to cope. With little follow-up care upon release to the community, their mental illness is likely to become worse once released, thus they are again likely to experience symptoms manifesting as behaviours that have been given criminal definitions (Kitchin, 2005). Within this context, it would seem likely that these mentally disordered offenders will come into re-contact with the correctional system upon release, creating a vicious cycle of incarceration and re-incarceration.

Recidivism of mentally disordered offenders

Recidivism is the most commonly used measure of the performance of the correctional system; however, it is not without its limitations. It is typically used as a measure of effectiveness which "in the popular and political imagination means lowering the rate of recidivism" (Brown et al., 2000, p.6). Unfortunately, there is no consistent methodology for determining rates of it. Issues in constructing measures of recidivism include the criteria used to define recidivism. In practice the definition is determined by the data that are available. It can be defined as a return to criminal behaviour which focuses on the individual, or it can be defined as a return to custody which is a more systemic measure.

Other issues to consider include the length of follow-up period, the population studied as well as the correlates of recidivism, which are largely dependent on the data available (Brown et al., 2000). It is a global measure of the rehabilitative effect of the correctional system which is a product of a variety of programs, policies and activities that indirectly affect recidivism or re-contact where the goal is to stimulate improvement in operational practices. It may also be a reflection of the penal system's re-processing of certain targeted individuals (Brown et al., 2000). This however, is only one measure of correctional success and efforts should be made to devise other measures of the success of the correctional system.

Although there may be strong theoretical grounding for a presumed higher likelihood of recidivism or re-contact among mentally disordered offenders, the empirical research examining the relationship between mental illness and re-contact with corrections is difficult to interpret. Illustratively, mental illness has been shown to be related to both low and high levels of recidivism (Linden, 2004). Ventura et al. (1998) claim that recidivism rates of mentally disordered offenders may reach over 70% (cited in Thompson et al., 2003). However, without a comparison with non-mentally ill offenders, it is impossible to know whether the recidivism rates of mentally disordered offenders – while high – simply parallel those of the general population of offenders.

When compared to the offender population in general, the evidence for higher recidivism among mentally disordered offenders is – at best – mixed. Some studies indicate that inmates with a mental disorder are less likely than non-mentally disordered offenders to reoffend following their release from prison (Girard and Wormith, 2004), while other studies find the opposite, i.e., that mentally disordered offenders are more likely to recidivate (Brown, 2008; Feder, 1991).

One of the few studies of mentally disordered offenders released from prison conducted by Girard and Wormith (2004) found that offenders with a mental illness had a lower rate of re-conviction (recidivism) than a comparison group of offenders with no mental illnesses. Another study conducted by Feder (1991) however, found that within 18 months of release, 64% of offenders with mental disorders were rearrested compared to 60% of offenders without mental disorders suggesting a higher likelihood of recidivism among mentally disordered offenders compared to other inmates. This difference, however, was not significant.

Although a higher likelihood of re-contact does not necessarily mean more dangerous, U.S. data show that among repeat offenders in state prisons, 47% of the mentally disordered offenders were violent recidivists, compared to 39% of prisoners without a mental health problem. Among repeat offenders in local jails, 32% of those with a mental health problem were repeat violent offenders, compared to 22% of those with no mental health problem (James and Glaze, 2006).

However, it is equally notable that some research has found that mentally disordered offenders are more likely to violate the conditions of their release than non-mentally disordered offenders. Motiuk and Porporino's (1991) study of 2,000 Canadian federal male inmates found that once mentally disordered offenders were released, they were more likely to be readmitted for technical breaches of release conditions than other offenders. Similarly, national statistics from Canada from 1994 indicate that nearly 25% of all admissions to custody were returns following a technical breach of release conditions (Arboleda-Flórez, 1996).

Overall, research on the recidivism of mentally disordered offenders is unclear. Some studies have found lower rates of recidivism among mentally disordered offenders

compared to non-mentally disordered offenders (Girard and Wormith, 2004), whereas other studies have found a higher likelihood of re-arrest among mentally disordered offenders than the general population of inmates (Feder, 1991). Furthermore, cross-research comparisons are also troublesome due to the many different indicators and definitions of recidivism and mental illness as well as the data that have been used in these studies.

Summary

The de-institutionalization of mental health facilities in Canada has had a significant impact on the number of persons with a mental illness coming into contact with the police, the courts, and the correctional system (Sealy and Whitehead, 2004). Along with the criminalization of mental illness, admissions to forensic hospitals have become increasingly difficult due to stricter admissions criteria as well as a lack of beds (MOHLTC, 2006; Seto et al., 2004; Hartford, 2003), and community mental health services have grown more and more deficient and difficult to access (Thompson, 2003; Collins, 2005; APA, 2004).

Although the number of mentally disordered offenders has increased in the past decade in Canada (Seto et al., 2004), there is little treatment available for mentally disordered offenders in prisons where the symptoms of their mental illness are likely to persist. With little follow-up care upon release, their mental illness is likely to become worse once in the community. These mentally disordered offenders are (theoretically) likely to come into re-contact with the correctional system upon release.

There is little available research empirically examining this hypothesis of the increased likelihood of re-contact of mentally disordered offenders, especially for provincial populations. Furthermore, few studies have compared mentally disordered offender to non-mentally disordered offender populations. For the few studies that have compared the re-contact, or recidivism, of mentally disordered offenders to the general population of inmates,

cross-research comparisons are difficult to interpret due to the many different recidivism rates that can be computed; thus, generalizations about recidivists are almost impossible (Kitchin, 2005). For the research that is available, the evidence for higher or lower re-contact (recidivism) among mentally disordered offenders is mixed.

The purpose of this study is to shed light on the likelihood of re-contact by mentally ill offenders released from provincial correctional facilities. Specifically, this thesis will compare the re-contact of mentally disordered offenders to non-mentally disordered offenders in an effort to provide correctional administrators and managers with information on recidivism rates for this specific population of inmates. While there is arguably a conceptual basis – as well as some empirical research – on which to assume that mentally ill offenders may have a higher likelihood of re-contact with the provincial correctional system than non-mentally ill offenders, further research is needed.

To this end, the primary research questions that this study attempts to answer are the following:

- Are mentally disordered offenders more likely to come into re-contact with the provincial correctional system than non-mentally disordered offenders?
- Are their rates of re-contact with the provincial correctional system also different?

Methodology

Data

The data used in this study were collected by Dr. Gregory P. Brown at the Institute of Applied Social Research (IASR) at Nipissing University who conducted a multi-year research study aimed at determining the prevalence and psychiatric care needs of provincial adult offenders in jails and correctional institutions in Ontario from May 2005 to August 2007. This study was funded by the Ontario Ministry of Community Safety and Correctional Services in conjunction with the Ministry of Health and Long-Term Care. This project was entitled "The Prevalence and Psychiatric Care Needs of Adult Offenders in the Ontario Correctional System."

The goals of this study were to determine the prevalence of mental illness among inmates in Ontario jails, detention centres and correctional centres and to determine their needs for mental health care, as well as to assess the impact of mental illness on recidivism. The purposes of the study included examining the distribution of mental illness across different subgroups of offenders in order to identify the need for services and resources, as well as identifying the needs for further investigation and research.

A prospective descriptive epidemiological research design was used in the original study in order to investigate the relationship of mental illness to future involvement with corrections. This was done by taking a 'snapshot' of the prevalence of mental disorder in the population of Ontario provincial inmates. Prospective descriptive designs incorporate primary measures of mental disorder, and allow for long-term follow-up of the subjects included in the research (Fos and Fine, 2000).

Population and sample

The population of interest includes all adult inmates of provincial correctional facilities in Ontario who were in a correctional institution under the authority of the Ministry of Community Safety and Correctional Services for at least one period of time between May 2005 and August 2007. Offenders who receive sentences of less than two years fall under provincial jurisdiction. Provincial jails and correctional centres house both sentenced and remanded prisoners. An individual is on remand when he or she has been charged with an offence and is held in custody awaiting a bail hearing, awaiting trial, or when convicted of an offence and awaiting sentencing (CIHI, 2008). Both remand and sentenced inmates were included in the population in the original study as well as a small number of inmates held on immigration warrants or suspensions of parole. To ensure sufficient numbers for analysis, female and Aboriginal inmate subgroups were oversampled.

The random sampling of inmates was deemed impractical in the original study. Purposive sampling is used when there is a need to select participants in difficult-to-reach specialized populations and the goal is to locate as many cases as possible. Hence a two-stage purposive non-probability sampling strategy was used. With the use of non-probability sampling, one cannot ensure that the sample is truly representative of the population of interest as the researcher purposefully selects the units in the population for the sample. Since it cannot be known whether the selected cases represent the population, the generalization of findings to the population should be carried out with significant caution (Neuman et al., 2004).

Statistics on the number of inmates in each correctional facility with a recorded mental health alert in 2004 were supplied by the Ministry of Community Safety and Correctional Services. Mental Health Alerts are "flags" that are entered into the Offender

Tracking Information System (OTIS) when the offender undergoes the intake process in a correctional institution. Examples of "flags" include previous hospitalization for mental illness, past/current treatment for alcohol and past/current history of abuse. These were used to ensure that a proportionately representative cluster of facilities housing inmates with a mental illness was selected for the study. Additional institutions were included at a later date in order to over-sample Aboriginal and female inmates. Table 1 shows the proportion of assessments conducted in each facility to the total number of assessments compared to the proportion of inmates in that facility to the total provincial population of inmates. Due to oversampling, the distribution of mental health assessments by individual facilities is not proportionately representative. For example, 17% of the assessments were conducted at the Ottawa Carleton Detention Centre, while the inmates in this facility only make up 7.2% of the total provincial population of offenders. However, the regional distribution of assessments approximates the regional distribution of inmates. The largest number of assessments was conducted in the Central region (39.5%), followed by nearly equal proportions of assessments in the Eastern (24.2%) and Western (27.1%) regions, and the lowest percentage in the Northern (9.2%) region.

Table 1: Distribution of in-person mental health assessments by facility and region (N = 524)

Facility	Region[1]	Number of Assessments	Sample/Population Percentage[2]
North Bay Jail	N	4	0.8 / 1.1
Sudbury Jail	N	17	3.2 / 2.4
Thunder Bay Correctional Centre (TBCC)	N	22	4.2 / -[3]
Thunder Bay Jail	N	5	1.0 / 2.4
Ottawa Carleton Detention Centre	E	90	17.0 / 7.2
Central East Correctional Centre	E	37	7.1 / 9.4
Elgin-Middlesex Detention Centre	W	30	5.7 / 6.2
Windsor Jail	W	40	7.6 / 3.5
Hamilton-Wentworth Detention Centre	W	27	5.1 / 3.7
Niagara Detention Centre	W	45	8.6 / 3.1
Maplehurst Correctional Complex	C	40	7.6 / 15.1
Vanier Centre for Women	C	50	9.5 / 6.3
Toronto Jail	C	47	9.0 / 7.6
Toronto West Detention Centre	C	70	13.4 / 7.8

At each of the facilities included in the study, correctional and medical staff was asked not to target offenders with a known mental illness, but to invite all inmates to

[1] N=Northern region; E=Eastern region; S=Southern region; and W=Western region.
[2] Percentage of total assessments (number of assessments in particular jail/total number of assessments) to proportion of total admissions 2006/07 (number of admissions in particular jail/total number of admissions).
[3] Statistics are not available as the majority of TBCC inmates are transfers.

participate by completing an in-person mental health assessment Such convenience samples have been used before to measure recidivism This was done for both practical and ethical purposes, in order to gain informed consent from the participants and ensure their understanding of the study (Brown et al , 2000) All volunteers were required to complete a 'Consent to Participate in Research' form[4] prior to participating in the study The total number of face-to-face mental health assessments completed across the fourteen facilities included in the study was 524 The sample was reduced to 522 as two of the inmates in the sample were assessed twice due to their readmission to a different facility during the course of the study Of the total sample of 522, 20 3% (106) were female and 79 7% (416) were male

For this current study, analyses were conducted for sentenced offenders alone to estimate any re-contact with the correctional system of mentally disordered offenders compared to non-mentally disordered offenders in the sample[5] Sentenced offenders had been convicted of an offence and were serving their sentence for this offence at the time of the interview It should be noted that remanded offenders were not included in this study as reasons for release varied greatly Many remanded offenders have been charged with an offence, but not yet found guilty (convicted) for this offence and are under provincial custody awaiting court proceedings In other words, they are incarcerated without having been convicted or sentenced to any form of punishment As such, it is plausible that some offenders in the sample were not found guilty, and that the charges for which they were incarcerated at the time of the interview were dropped, dismissed, or stayed The necessary information to discern whether this has happened is not available This makes the re-contact

[4] See Appendix A
[5] Parallel analyses were conducted for remanded offenders in the sample and can be located in Appendices B, C, D and E Only when there is a difference between the results of the sample of sentenced offenders and remanded offenders will the results of the remanded sample be mentioned in the text

of remanded groups of offenders difficult to study as it is not possible to define re-contact as a measure of correctional success in rehabilitating offenders consistently for this group

In contrast, the sentenced offenders under study are considered to be at risk of re-contact after having been released from provincial custodial supervision. Those who are sentenced are being punished for a crime for which they were convicted. So, in effect, for sentenced offenders, re-contact signifies a failure of the system to rehabilitate the offender through incarceration.

For this particular study, of the total sample of 522, 339 (64.9%) were sentenced inmates and 166 (31.8%) were remanded. The remaining 17 inmates in the sample (3.3%) were either on an immigration hold[6] (9), a National Parole hold[7] (4), an extradition hold[8] (2), or a judge's order[9] (1). Interestingly, one inmate was serving a youth warrant of committal[10]. It is possible that this youth turned 18 while serving his sentence and was transferred to an adult facility. These 17 offenders were not included in the current study.

If someone was released from a provincial institution to be transferred to federal prison, as he/she may have initially been in custody for a suspension of parole, he/she was

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[6] An immigration hold is a form of detention of foreign nationals and permanent residents who are suspected of breaching the Immigration and Refugee Protection Act (IRPA) for the following it is believed that the person will not appear for immigration proceedings, it is believed the person poses a risk to the public, or the officer is not satisfied of their identity (Canada Boarder Services Agency, retrieved from www cbsa-asfc gc ca)

[7] A National Parole hold is a form of detention used for paroled offenders who have breached the conditions of their parole and are then ordered to return to prison upon revocation of their release (National Parole Board; retrieved from www npb-cnlc gc ca)

[8] An extradition hold is a form of detention for persons awaiting extradition to another country for prosecution or sentencing, or enforcing a sentence imposed on that person (Department of Justice Canada, retrieved from www justice gc ca)

[9] A judge's order is a form of detention that may be ordered if a judge believes that the person charged with or convicted of an offence or who is in custody suffers from a mental illness and is awaiting remand to a psychiatric facility (Centre for Addiction and Mental Health, retrieved from www camh net)

[10] A youth warrant of committal is a form of detention requiring a youth to be committed to prison for a specified period of time (Youth Criminal Justice Act, retrieved from www justice gc ca/eng/pi/yj-jj/ycja) Note that it is not certain how this individual was in adult custody

not considered to have had re-contact if he/she was re-admitted to correctional supervision under a provincial institution for a new offence, as there would be no way to control for the time that was spent in federal custody. Therefore, these offenders were dropped from the analyses as well. Furthermore, the dependent variable is a measure of the time from release to the first incidence of re-contact, so all those who were not released during the study period were excluded from the analyses. As noted above, only sentenced offenders are included in this study. Therefore, all of the following tables and analyses contain only offenders who were sentenced (N=333) at the time of the initial interview.

Data sources

The Resident Assessment Instrument – Mental Health (RAI-MH)[11] instrument was selected for use in the original study for data collection to provide a 'common language' when assessing the prevalence of mental illness among inmates, and in communicating the needs of inmates to mental health care providers (Brown, 2008). The RAI-MH allowed for a single assessment and classification system which would also serve as a tool for allocating funds (CIHI, 2004), and it provided a standard data collection method to facilitate comparisons among hospitals (OHA, 2004).

The RAI-MH is an assessment instrument measuring psychiatric patient functioning capturing many areas including diagnoses, medications, mental health history, patient mood, psychiatric symptoms, substance abuse, self-injury, violence, disruptive behaviour, life stressors, medication and programs compliance, physical health, and discharge readiness (Seto, et al., 2004). The RAI-MH includes demographic questions, a Minimum

[11] The RAI-MH assessment tool is part of a series of health care assessment instruments developed by interRAI, a non-profit international group of health care researchers promoting "evidence based clinical practice and policy decisions through the collection and interpretation of high quality data" (http://www.interrai.org, 2008).

Data Set–Mental Health (MDS-MH), Clinical Assessment Protocols (CAPs), quality indicators, outcome measures and a case mix algorithm (System for Classification of In-Patient Psychiatry or SCIPP) (CIHI, 2004).

The MDS-MH is, in practice, filled out by front-line psychiatric care staff in general hospitals with inpatient beds, provincial psychiatric hospitals and specialty psychiatric facilities using interviews, patient documentation, and observation. Front-line staff in these institutions include nurses, social workers, psychiatrists, family physicians, and recreational and occupational therapists. The MDS-MH tool contains approximately 400 items measuring life areas including mental and physical health, substance abuse, harm to self and others, behaviour disturbance, medication compliance, self-care, cognition, role functioning, social activity and support, stressors, medications, and service utilization (Martin et al., 2004).

In Dr. Brown's study, the RAI-MH was being used for the first time in a prison setting. Each face-to-face mental health assessment was conducted by members of the research team, trained by interRAI staff in the use of the MDS-MH V.2.0 tool, the newest version of the RAI-MH clinical instrument. After obtaining consent from participants, two members of the research team, one assessor and one observer, completed the face-to-face assessments. The research team would then review the subject's correctional and medical files. Completed assessments were given a randomly generated case number and returned to Nipissing University in North Bay for data entry.

Data obtained from RAI-MH inmate assessments were combined with detailed information, retrieved from the Offender Tracking and Information System (OTIS) maintained by the Ministry, including admission dates, offence information and criminal history. Using data retrieved from the OTIS system, reoffending behaviour (re-contact) of inmates was tracked beginning in May 2005 with the initial data collection and ended in May

2008, with the last observed re-contact taking place on May 1, 2008, thus three years of data were used. Generally, in studies of recidivism, follow-up periods of two to three years are the norm (Brown et al., 2000).

Analyses

The research design for this study is correlational. Statistical analyses for this study were conducted using Stata, release 10 (StataCorp. 2007). Bivariate analyses were first conducted to examine the difference between the event of re-contact for mentally disordered offenders and non-mentally disordered offenders. Specifically, Chi-squared tests and paired sampled t-tests were used to investigate this difference. Multiple logistic regression was also used to examine the possible effect that other variables may have on the dependent variable. More specifically, logistic regression was used to examine the effects of predictors of re-contact identified in bivariate analyses to be significantly related to re-contact.

Additionally, the possible difference in the rate of re-contact between mentally disordered offenders and non-mentally disordered offenders was also investigated using survival analysis. Survival analysis, also known as event history analysis, is a statistical technique that is appropriate when studying the time to the occurrence of an event of interest (Norušis, 2004). For offenders, the event of recidivism can occur multiple times. They can be repeatedly re-incarcerated for many different crimes, and some may not be re-incarcerated at all by the time when the study data are being analyzed. Moreover, the 'time at risk', which is the duration of time during which study subjects can experience the event of interest, may not be the same for each study subject. From a statistical perspective, this makes the estimation of the time to occurrence of the event of interest very challenging. Survival analysis techniques allow the inclusion of subjects with varying times at risk, and

even subjects for which the critical event has not yet occurred, known as 'censored' cases (Francis et al., 2007).

Both the release dates and post-release periods for inmates in the study vary considerably. Differing start dates can be addressed with survival analysis (Norušis, 2004), as recidivism estimates can be calculated for any chosen point in time. Additionally, it is not necessary that all releases have the same follow-up period. This is possible because it is the 'time at risk' that is used in survival analysis calculations. It is assumed that if two offenders are released from custody and are at risk at the same time that they have the same risk of re-contact (Cleves et al., 2004).

Furthermore, survival analysis is appropriate for use when combining different samples into one analysis. For example, this research project was conducted in three consecutive years where assessments took place during the months of May through August in 2005, 2006 and 2007, and on two occasions, separate sites were visited during the months of February and March in 2006 (See Table 2 for frequency of interviews per year). This type of analysis would ensure that the results are not biased due to these gaps in time between data collection (Brown et al., 2000) as it is the time to the occurrence of the event that is of primary concern in survival analysis. Thus, as long as there is recorded information for the release date and the date of re-contact, time to the occurrence of the event (survival time) can be calculated (SPSS, 1999).

Table 2: Frequency of assessments by year of study

Assessment Completion Year	N	%
2005	210	40.2%
2006	198	37.9%
2007	114	21.9%
Total	**522**	**100.0%**

There is also a high proportion of 'censored cases'. Censored cases are those that enter the risk period, but do not experience the event of interest by the last observation period of the study, as not all subjects would have had the same opportunity temporally to have experienced the event. Standard regressions do not distinguish between censored and uncensored observations (Box-Steffensmeier and Jones, 2004). If these were dropped from the analyses, the estimated probabilities would be too low. This is explained further below.

The Cox Proportional Hazards model will be used to conduct the survival analysis. The Cox Proportional Hazards model is a semi-parametric model. Semi-parametric survival models take the individual binary outcomes at each failure time (the subject either fails or does not fail) and combines them to reach a combined probability based on the results of each individual analysis. This gives the probability of failing for those who failed at that particular time. In the presence of censored cases, semi-parametric models include censored cases when calculating the probability of failure (Cleves et al., 2004). Survival time (time at risk) will be defined as the time from the first release since the time of the assessment to the time at which the offender returns to correctional supervision for a new offence. Survival time can be calculated using both these dates (Cleves et al., 2004; SPSS, 1999). Additionally, with survival analysis, correlates can be included and tested in the analysis (Brown et al., 2000). The same covariates which were found to be significantly related to re-contact and included in the logistic regression were included in the survival analysis model for this study.

Principal measures

Recidivism has been defined by the Ontario Ministry of Community Safety and Correctional Services as "a return to correctional supervision following conviction for a criminal offence committed either during or after correctional supervision" (Brown et al.,

2000, p.7). This definition is used as a means to measure the success of correctional services to assist in offender rehabilitation. Bourgon and Armstrong (2005) define recidivism as any incarceration for a new conviction or a supervision related breach. Broner et al. (2004) used a broader definition of recidivism, including any arrest by police following release from correctional custody. This definition is a measure of re-contact or correctional system involvement and could be applied to all levels of the criminal justice system (the police, the courts and corrections). For the purposes of this study re-contact will be defined as a return to correctional services (including both returns to correctional supervision and non-custodial sentences, e.g., probation) following incarceration for a new criminal offence committed either during or after correctional supervision, as all offenders in this study were under correctional supervision at the time of the initial interview. The term re-contact will be used as it is not the behaviour necessarily that is being measured. Re-contact, in this study, is being used as a global measure of system actions (e.g., treatment).

The dependent variable is the measure of the duration of time that a person spends in a particular state, in this case being released from prison (after having served a sentence, before he or she experiences some event, in this case, re-contact with provincial corrections. In other words, the dependent variable is a measure of the time from release to the first incidence of re-contact in the form of correctional supervision including custodial supervision (remand, sentenced) and non-custodial supervision (probation, conditional sentence).

Not everyone will have returned to correctional supervision by the end of the follow-up period. This can occur for a variety of reasons. It is possible that individuals in the study may have ended their criminal careers, or they committed criminal acts but were not detected, or they could have been detected, but the offender was not admitted to

correctional supervision. It is also possible that study subjects may have died before the end of the follow-up period, or they may have moved outside of Ontario. The covariates are expected to influence the duration and the occurrence or non-occurrence of re-contact.

After the event of re-contact is experienced by the offender, he/she may return to the previously occupied state of being at risk of the event of interest. In other words, for offenders, recidivism can occur multiple times. Furthermore, there are a number of different possible outcomes. For example, offenders can be repeatedly re-incarcerated for many different crimes or due to breaches of conditions for the same crime. Additionally, offenders can experience time at risk (or survival time) both outside and inside of prison (Box-Steffensmeier and Jones, 2004).

For the purpose of this study, only time to first re-incarceration will be used, as not all offenders were given the same opportunity to re-offend multiple times. That is, with follow-up times ranging between one and three years not all offenders were given sufficient time to come into re-contact with the correctional system multiple times. Furthermore multiple recidivism analyses are beyond the scope of this study.

The re-contact of sentenced inmates was examined where re-contact is defined as any re-admittance to correctional supervision for a new offence. If they failed to comply with conditions of their sentence for their original offence at the time of the interview, this was also considered a new offence. These were not separated from new offences in the analyses for this study.

The primary independent variable is mental illness. Mental illness will be measured as either the presence or absence of a mental disorder. This information comes from official mental health diagnoses (both Axis I and Axis II) as indicated in the offender's medical file

by a psychiatrist and were filled in the appropriate sections of the RAI-MH assessment tool. Because this information was obtained from the offender's file there was no way to determine how or when the offender was assessed/diagnosed.

As well, a number of other independent variables will be considered. The research indicates that the correlates of recidivism are the same for mentally disordered offenders and non-mentally disordered offenders (Brown, 2008; Bonta et al., 1998). In Amoretti and Landreville's (1996) study, a cohort of 1,090 federal Quebec offenders was examined for differential patterns of release and subsequent returns to custody. Offenders who were younger (under 30) at the time of release were returned to custody significantly more often (47%) than older offenders (27%). In addition those with previous penitentiary sentences had a return rate of 51% compared those with no previous custodial sentences with a return rate of 14%. Offenders from this sample with the shortest sentence lengths were the most often returned with a return rate of 44%. Finally, those with the longest sentence lengths were the least often returned at a rate of 8%. Of interest, one of the strongest variables associated with return rates was offence type. Robbery and property offenders returned at the highest rate at 52% and violent, drugs, and other offence types were returned at the lowest rate at 19% (cited in Amoretti and Landreville, 1996). A North Carolina study examining the correlates of recidivism found that time until recidivism was significantly related to age, sex, race, marital status, alcohol or drug abuse, number of previous incarcerations, length of previous sentence, and nature of previous offence (Chung et al., 1991).

Prisoners in general compared to the population have a different demographic composition. There is a higher ratio of males to females; offenders tend to be younger with a growing population of older prisoners; and those with lower levels of education are

overrepresented in prisons, along with those who are single and those belonging to minority ethnic groups (Andersen, 2004). Because of this it is important to control for these variables when examining differences in recidivism as these variables may also have an effect on their rates of recidivism.

When measuring recidivism as a global measure of the rehabilitative effect of the correctional system on offenders for the purpose of improving operational practices including various programs, policies and activities, the population criteria that are recommended for consideration by the Ministry of Correctional Services are sex, age, race, length of stay, offence severity, offence type (violent, property, drug, sexual), and type of supervision (custody/conditional release, community, conditional sentence) in order to target interventions more specifically (Brown et al., 2000).

Variables of interest included in this study were sex, age, aboriginal status (race), length of stay in custody, offence severity (grouped according to the OTIS MSOSEVER scale[12]), and offence type (violent, property and other). Both offence severity and offence type consider the most severe offence committed if there were multiple offences. Type of supervision will not be included because all offenders in the sample were in custody at the time of the interview, so there is no variability. Education is typically controlled for in studies of offenders in general as well as mentally disordered offenders (Arboleda-Flórez et al., 1996; Arboleda-Flórez, 1998; Bonta et al., 1998; Fisher et al., 2002; Broner et al., 2004; Silver et al., 2008) and is thought to serve as a protective factor against offending behaviour (Ashford et al., 2008; CIHI, 2008). Brink et al. (2001) found that prevalence of mental disorder was inversely correlated with years of formal schooling. In other words, as the

[12] OTIS MSOSEVER scale: Violent=1,2,7,9,11; Sex Offences=3,5; Property=4,8,10,12; Drugs=6,15; Traffic=16,18,22; Administration of Justice=17; Other=remainder. Note: scale ranges from 1-26; 1 being the most severe, and 26 being the least severe.

years of formal schooling went up, prevalence of mental disorder went down. Feder (1991) similarly found that mentally disordered offenders had a more limited educational background. For these reasons, this variable was also included in this study. Finally, marital status was included as an indicator of social support (CIHI, 2008). Marital status has also been shown to be significantly related to time until recidivism by Schmitd and Witte (1988).

Results

Descriptive statistics

This section provides an overall picture of the sample using those variables identified as important when studying correctional populations. The generalizability of the sample to the provincial population of sentenced offenders was also assessed.

Table 3 below presents the gender of the sample which is predominantly male (80.5%). This distribution was compared to a snapshot of sentenced provincial admissions for Ontario offenders for the year 2006-2007 by gender[13]. There did not appear to be any major differences in terms of gender between the sample and population, although there are slightly more males in the provincial population (89.1%) which may be a result of this study having oversampled females.

Table 3: Gender of sample vs. population

Sentenced Admissions					
Sample			Provincial Population		
Males	Females	Total	Males	Females	Total
268 (80.5%)	65 (19.5%)	333 (100%)	28,831 (89.1%)	3,533 (10.1%)	32,364 (100%)

A table of sentenced offenders by gender and age at the time of admission is presented in Table 4 below, and is compared to the gender and age distributions of a snapshot of provincial adult sentenced admissions for 2006-2007 in Ontario. The majority of both males and females were between the ages of 18 and 24 (30.6% and 28.35% respectively), followed by those aged 30 to 39 (23.1% and 24.6%), 40 to 49 (22.4% and 23.1%), and 25 to 29 (16.8% and 13.8%). Few offenders in the sample (both males and

[13] All Ontario provincial admissions data were provided by Kathy Underhill, Supervisor, Statistical Services, Ministry of Community Safety and Correctional Services.

females) were aged 50 and above (7.1% and 9.2% respectively). The average age of the sample (32.3 for males and 33.8 for females) closely approximates the average age in the population for both males and females (33.8 and 33.5 respectively)[14]. For sentenced male offenders, there were more 18 to 24 year olds in the sample (30.6%) than in the population (25.1%) and there were fewer 30 to 39 year olds in the sample (23.1%) compared to the population (28.1%). For sentenced female offenders there were more 18 to 24 year olds in the sample (29.3%) compared to the population (21%) as well as those aged 50 and above (9.3% vs. 5.2% respectively) and there were fewer 30 to 39 year olds in the sample (24.6%) than in the population (32.5%). No other notable differences were found.

Table 4: Age of sentenced offenders in the sample vs. the population

Age category	Sentenced Admissions							
	Sample				Provincial population			
	M	%	F	%	M	%	F	%
18 to 24 years	82	30.6%	19	29.3%	7,238	25.1%	7,691	21.0%
25 to 29 years	45	16.8%	9	13.8%	4,537	15.7%	627	17.8%
30 to 39 years	62	23.1%	16	24.6%	8,110	28.1%	1,149	32.5%
40 to 49 years	60	22.4%	15	23.1%	6,707	23.2%	826	23.4%
50+ years	19	7.1%	6	9.2%	2,239	7.8%	187	5.3%
TOTAL	**268**	**100.0%**	**65**	**100.0%**	**28,831**	**100.0%**	**3,533**	**100.0%**
Average age (in years)	**32.3**		**33.8**		**33.8**		**33.5**	

Aboriginal inmates were oversampled which leads to a greater proportion of Aboriginal inmates in the sample. Of the 333 sentenced offenders in the sample, 25.5% (85) were of Aboriginal origin compared to 8.5% for provincial sentenced admissions. Due to the large difference between the sample and the provincial population in terms of Aboriginal status, caution is warranted when interpreting results. Some research has shown that

[14] Although standard deviations could be calculated for the study sample, this information was unavailable for the provincial population.

Aboriginal offenders are more likely to have a mental disorder (Brink et al., 2001), whereas other studies have shown that Caucasian offenders have higher rates of mental illness than other ethnic groups (James and Glaze, 2006; Andersen, 2004).

In terms of marital status, 50.5% were single/never married, 27.9% were married or common-law, and 20.7% were widowed, separated, or divorced. Unfortunately no data were available on the marital status of the provincial population for comparison (Table 5).

Table 5: Marital status of the sample

Marital status	Sentenced Admissions	
	N of sample	% of sample
Single/never married	168	50.5%
Married/common law	93	27.9%
Widowed/separated/divorced	69	20.7%
Unknown	3	0.9%
Total	**333**	**100.0%**

With regards to education level, 50.2% had less than high school, 28.8% had their high school diploma, and 19.5% had some form of post-secondary education. Unfortunately no data were available on the education level of the provincial population for comparison (Table 6).

Table 6: Education level of sample

Education level	Sentenced Admissions	
	N of sample	% of sample
Less than high school	167	50.2%
High school	96	28.8%
Post-secondary	65	19.5%
Unknown	5	1.5%
Total	**333**	**100.0%**

Below is a table comparing offence categories of the sample to the total Ontario inmate population for sentenced offenders alone (See Table 7). There was a higher

percentage of property crimes in the sample (43.0%) than the population (29.7%) as well as violent crimes (30% vs. 24.5% respectively) and a lower percentage of other offences in the sample (27.0%) compared to the population (45.8%).

Table 7: Offence type of sample vs. population

	Sentenced Admissions	
Offence Type	**Sample**	**Provincial population**
Violent	100 (30.0%)	7,927 (24.5%)
Property	143 (43.0%)	9,613 (29.7%)
Other	90 (27.0%)	14,824 (45.8%)
Total	**333 (100.0%)**	**32,364 (100.0%)**

Average length of stay in custody was calculated for sentenced offenders. The range was 2 to 646 days and the mean was 164.06 days[15]. No comparable offence data were available for the provincial population.

Offence severity (OTIS MSOSEVER scale obtained from the OTIS data set) is measured on a scale from 1 to 26 where 1 is the most serious and 26 is the least serious offence (See Table 8 below). The highest percentage for sentenced male offenders was for severity rankings from 6 to 10 (45.4%) followed by 1 to 5 (31.6%). For females, the highest percentage of cases also had severity rankings between 6 and 10 (44.7%) but the second highest percentage was found to have severity rankings of 16 or above (20%) or 1 to 5 (18.5%). No comparable offence severity data were available for the provincial population.

[15] Note that provincial stays in custody are two years less a day which corresponds to 729 days. It was found that three male mentally disordered offenders (min.=7; max.=1,291) and eight male non-mentally disordered offenders (min.=10; max.=2,996) were in custody longer than this maximum. These have been considered for the purposes of this study to be merely data entry errors and this was the only anomaly found for these cases. As such, these 11 cases were only removed from the analyses which included this variable.

Table 8: Offence severity by gender of the sample

	Sentenced Admissions			
Offence Severity	**Male**	**% of Total**	**Female**	**% of Total**
1-5	85	31.6%	12	18.5%
6-10	97	45.5%	29	44.7%
11-15	41	13.9%	11	16.8%
16 +	24	9.0%	13	20.0%
Total	**268**	**100.0%**	**65**	**100.0%**

Of the 333 sentenced offenders in the sample, 25.8% (86) were mentally ill and 74.2% (247) were not. This proportion of mentally disordered offenders is somewhat higher than the provincial rate for mentally disordered offenders requiring clinical intervention which ranges between 15% and 20% (MOHLTC, 2006). Note that correctional facilities included as study sites were specifically chosen because of their high rates of mental health alerts, although the percentage is not much higher in the sample (25.8%) compared to the population (15%-20%), so this should not significantly bias the results. Note that only inmates who had an official diagnosis in their correctional medical file were considered to be mentally ill in this study. Therefore, it is possible that this variable underestimates the prevalence of mental disorder as many of the offenders in the study may not have had a mental health assessment during their incarceration, or it may not be on file.

In terms of previous contact with mental health services, within the last two years before the time that the interview took place 12.6% of the sample (N=333) had been admitted to a psychiatric hospital one to two times, and 2.1% had been admitted three or more times. The remaining 85.3% had not been admitted to a psychiatric hospital in the two years prior to the initial interview. Of those admitted to a psychiatric hospital at least once in

the last two years, 61.2% were hospitalized for 30 days or less, 20.4% for 31 days to a year, and only 4.1% for more than a year. The remaining 14.3% were not reported.

Within their lifetime, 27.6% of the sample had been hospitalized one to three times, 3.3% four to five times, and 3.0% six or more times. The remaining 66.1% were never admitted to a psychiatric hospital in their lifetime. Of those who had been admitted to a psychiatric facility at least once in their lifetime, 42.5% were between the age of 15 and 24 when they were admitted for the first time, 33.6% were aged 25-44, 15.9% were aged 14 or younger, only 2.7% were between 45 and 64, and 5.3% were unknown.

The majority of offenders had no contact with community mental health within the last year since the time of interview (67.6%). For those who had contact with community mental health within the last year (32.4%), 55.7% had their last contact in the past 31 days or more and 44.3% had their last contact in the past 30 days or less.

Table 9 below shows the psychiatric diagnoses of the sample of mentally ill sentenced inmates by gender. Of this subset of sentenced offenders 10.5% have multiple diagnoses with 3.9% of these being co-occurring substance abuse disorders. Note that because an offender may have multiple diagnoses, the total in the figures below are not the same as those reported elsewhere in the results section. For males, the most frequent psychiatric diagnosis was for mood disorders (31.6%). However, this was much higher for females (60.7%). Females also had higher rates of anxiety disorders (14.3%) than males (8.1%). More males were diagnosed with psychosis/schizophrenia than females (15.3% vs. 10.7%). Likewise, more males were diagnosed with personality disorders than females (13.5% vs. 7.1%) as well as substance abuse disorders (13.5% vs. 3.6%), impulse control disorders/adjustment disorders (8.1% vs. 0%), and ADD/ADHD (9.9% vs. 3.6%). In terms of different psychiatric diagnoses, the proportions in the sample seem to be similar to those in

the research (Seto et al., 2004; Brink et al., 2001; Motiuk and Porporino, 1991). However, substance abuse and personality disorders seem to be much lower in the sample: 11.5% of sentenced offenders in the sample had a diagnosis of substance abuse compared to studies of Canadian federal prisons which have shown rates of 40.9% to 75.7% (Seto et al., 2004; Brink et al., 2001; Motiuk and Porporino, 1991). For personality disorders, the level in the sample (12.2% for sentenced) was much lower than the 56.9% for antisocial personality disorder shown in the research (Brink et al., 2001). One issue with comparisons is that studies may have used different measures of mental disorder, some relying on assessment tools, others on recorded diagnoses. Mental health can also be assessed at different periods throughout the offender's incarceration; for example, some studies looked at prevalence rates at the time of admission to prison, some at other stages of the criminal justice process (Brink et al., 2001; Motiuk and Porporino, 1991). In the present study the diagnoses were found in the offender's medical file, so there was no way to determine when or how the assessments were conducted, and as such, could be different for all study participants.

Table 9: Psychiatric diagnosis by gender

Psychiatric diagnosis	Sentenced Admissions		
	Males	**Females**	**Total**
Psychosis/schizophrenia	17 (15.3%)	3 (10.7%)	20 (14.4%)
Mood disorders	35 (31.6%)	17 (60.7%)	52 (37.4%)
Anxiety disorders	9 (8.1%)	4 (14.3%)	13 (9.4%)
Impulse control /adjustment disorders	9 (8.1%)	0 (0.0%)	9 (6.5%)
Personality disorders	15 (13.5%)	2 (7.1%)	17 (12.2%)
ADD/ADHD	11 (9.9%)	1 (3.6%)	12 (8.6%)
Substance abuse	15 (13.5%)	1 (3.6%)	16 (11.5%)
Total	**111 (100.0%)**	**28 (100.0%)**	**139 (100.0%)**

With regard to self injurious behaviour, 23.8% of this subset of sentenced offenders attempted to injure themselves more than a year ago, 74.2% never attempted to injure themselves, and the remaining 2% was unknown. Of concern, 2.7% of sentenced offenders considered performing a self-injurious act within the last 30 days.

Overall, the sample closely approximates the population in terms of key variables of interest when studying correctional populations. Unfortunately, information about the population was not always available for comparison; however, research available for comparison did not suggest any major issues of concern[16].

Inferential analyses (mentally disordered offenders (MDOs) vs. non-MDOs)

Inferential analyses were conducted to provide a description of the two principal groups of interest to this study, as well as to examine the possible correlates of the independent variable.

Table 10 presents the gender of mentally disordered offenders compared to non-mentally disordered offenders. No significant difference was found between mentally disordered offenders and non-mentally disordered offenders in terms of gender (X^2 = 0.4888; p=0.484). In other words, neither males nor females were more likely to have a mental disorder (77.9% and 22.1% respectively) than to not have a mental disorder (81.4% and 18.6%).

Table 10: Gender of MDO vs. non-MDO

Sentenced Admissions					
MDO			Non-MDO		
Males	Females	Total	Males	Females	Total
67 (77.9%)	19 (22.1%)	86 (25.8%)	201 (81.4%)	46 (18.6%)	247 (74.2%)

[16] Parallel analyses were conducted with remanded offenders and can be seen in Appendix B.

Below is a table of sentenced mentally disordered offenders by gender and age at the time of admission compared to sentenced non-mentally disordered offenders in the sample (Table 11). There were more mentally ill males in the 40 to 49 year age group (28.4%) compared to non-mentally ill male offenders (20.4%); however, there were fewer mentally disordered males in the 50 and above age group compared to non-mentally disordered males. Among sentenced females, there were more mentally disordered offenders in the 18 to 24 year age group compared to non-mentally disordered offenders, but there were fewer 30 to 39 and 40 to 49 year old mentally disordered females (15.8% and 15.8% respectively) compared to non-mentally disordered females (28.3% and 26.1%). However, there was no significant difference in the mean age of mentally disordered offenders (32.3 for males and 33.6 for females) compared to non-mentally disordered offenders (32.4 for males and 33.8 for females) ($t = 0.3788$; $p=0.3525$).

Table 11: Age of sentenced MDO vs. non-MDO by gender

Age category	Sentenced Admissions							
	MDO				Non-MDO			
	M	%	F	%	M	%	F	%
18 to 24 years	19	28.4%	7	36.8%	63	31.4%	12	26.1%
25 to 29 years	13	19.4%	3	15.8%	32	15.9%	6	13.0%
30 to 39 years	14	20.8%	3	15.8%	48	23.8%	13	28.3%
40 to 49 years	19	28.4%	3	15.8%	41	20.4%	12	26.1%
50+ years	2	3.0%	3	15.8%	17	8.5%	3	6.5%
TOTAL	**67**	**100.0%**	**19**	**100.0%**	**201**	**100.0%**	**46**	**100.0%**
Average age (in years)	**32.3**		**33.6**		**32.4**		**33.8**	

For sentenced offenders who were mentally ill, 27.9% were of Aboriginal origin compared to 24.7% for non-mentally disordered sentenced offenders. Note that this difference was not significant ($X^2 = 0.3459$; $p=0.556$). Thus, mentally disordered offenders were no more likely than non-mentally disordered offenders to be of Aboriginal origin. A

study in B.C. that examined the prevalence rates of sentenced federal male inmates found that Aboriginal offenders had the highest overall rate of mental disorder compared to other ethnic groups (Brink et al., 2001). Some prison studies, on the other hand, have shown a higher percentage of white people with a mental health problem compared to other ethnic groups (Andersen, 2004; James and Glaze, 2006). However, most of these studies compared whites to Hispanics and black people, whereas the present study only compares Aboriginal and non-Aboriginal populations (Andersen, 2004; James and Glaze, 2006).

In terms of marital status, 51.2% of mentally disordered offenders and 50.2% of non-mentally disordered offenders were in the single/never married category (See Table 12). Note that there was no significant difference in terms of marital status between mentally disordered offenders and non-mentally disordered offenders ($X^2 = 0.3454$; $p=0.841$). Feder (1991) found that mentally disordered offenders were more likely to be single, and Motiuk and Porporino (1991) similarly found that single inmates were more likely to have mental disorders.

Table 12: Marital status of MDO vs. non-MDO

Marital status	Sentenced Admissions	
	MDO	Non-MDO
Single/never married	44 (51.2%)	124 (50.2%)
Married/common law	22 (25.6%)	71 (28.8%)
Widowed/separated/divorced	19 (22.1%)	50 (20.2%)
Unknown	1 (1.1%)	2 (0.8%)
Total	**86 (100.0%)**	**247 (100.0%)**

With regards to the educational level of sentenced offenders, Table 13 shows that the majority of both mentally ill (55.8%) and non-mentally ill offenders (48.2%) had completed less than high school (i.e., grades 9, 10, or 11). Having completed high school was less common for mentally disordered offenders (18.6%) compared to non-mentally

disordered offenders (32.4%). However, it was more common for mentally disordered offenders to have some post-secondary education (23.3%) compared to non-mentally disordered offenders (18.2%). Being a mentally disordered offender or a non-mentally disordered offender is not significantly related to one's educational level, although it did approach significance (X^2 = 5.7987; p=0.055[17]). Feder (1991) had found that mentally disordered offenders had a more limited educational background.

Table 13: Education of MDO vs. non-MDO

Education level	Sentenced Admissions	
	MDO	Non-MDO
Less than high school	48 (55.8%)	119 (48.2%)
High school	16 (18.6%)	80 (32.4%)
Post-secondary	20 (23.3%)	45 (18.2%)
Unknown	2 (2.3%)	3 (1.2%)
Total	**86 (100%)**	**247 (100.0%)**

Table 14 compares offence categories of mentally disordered offenders to non-mentally disordered offenders. Note that this refers to the most serious offence for which the offender was incarcerated at the time of the initial interview. The percentage of offenders who had been incarcerated for a violent offence was not much different for mentally disordered offenders (33.7%) compared to non-mentally disordered offenders (28.7%). More mentally disordered offenders had been incarcerated for a property offence (52.3%) compared to non-mentally disordered offenders (39.7%). Finally, fewer mentally disordered offenders were incarcerated for other offences (14%) compared to 31.6% for non-mentally disordered offenders. Whether the offender was a mentally disordered offender or not was significantly related to offence type (X^2 = 10.2350; p=0.006). One of the few studies comparing mentally disordered offenders to the general population of inmates released from

[17] Note that this result did not approach significance for the remanded population (X^2=4.4035; p=0.111) (see Appendix C).

New York State correctional facilities found that mentally disordered offenders were significantly more likely to have a violent offence as their current conviction and to have been previously arrested for a violent crime than non-mentally disordered offenders (Feder, 1991).

Table 14: Offence type of MDO vs. non-MDO

	Sentenced Admissions	
Offence Type	**MDO**	**Non-MDO**
Violent	29 (33.7%)	71 (28.7%)
Property	45 (52.3%)	98 (39.7%)
Other	12 (14.0%)	78 (31.6%)
Total	**86 (100.0%)**	**247 (100.0%)**

Among mentally disordered offenders, the average length of stay in custody was 83 days for females (min.=14; max.=326) and 186 days for males (min.=7; max.=577). For non-mentally disordered offenders, the average length of stay was 104 days for females (min.=2; max.=551) and 176 days (min.=10; max.=646) for males[18]. Note that this difference was not significant (t = 0.554; p=0.29). Thus, the length of stay in custody is no different for mentally disordered offenders compared to non-mentally disordered offenders.

Table 15 below shows the distribution of offence severity rankings for mentally disordered offenders vs. non-mentally disordered offenders. Note that the lower the ranking, the higher the severity, i.e., a ranking of one is the most severe and is 26 the least severe. It was found that there were somewhat more mentally disordered offenders with severity rankings between 1 and 5 (36%) compared to non-mentally disordered offenders (26.7%).

[18] See footnote 6.

In addition, there were fewer sentenced mentally disordered offenders with severity rankings between 11 and 15 (6.9%) compared to non-mentally disordered offenders (17%). Note that this difference was not significant (t=2.5583; p=0.9945).

Table 15: Offence severity of MDO vs. non-MDO

	Sentenced Admissions			
Offence Severity	**MDO**		**Non-MDO**	
1-5	30	36.0%	66	26.7%
6-10	40	45.4%	111	45.0%
11-15	6	6.9%	42	17.0%
16 +	10	11.7%	28	11.3%
Total	**86**	**100.0%**	**247**	**100.0%**

Overall, there were no major differences between mentally disordered offenders and non-mentally disordered offenders in terms of key variables for consideration in the analyses. The only exception was offence type, as mentally disordered offenders and non-mentally disordered offenders were shown to be significantly different across categories of offence type.

Inferential analyses (re-contact with corrections vs. no re-contact)

Inferential analyses were also conducted to examine the relationships between the various predictors in this study for those offenders who had re-contact with the Ontario correctional system and those who did not have any re-contact during this study's follow-up period. These analyses were carried out to investigate the effect of each individual co-variate that was considered for inclusion in a multivariate analysis. This was done to reduce the variance in the subsequent multivariate analyses to increase the power of the test.

Among offenders in the sample, a significant difference was found between mentally disordered offenders and non-mentally disordered offenders in terms of having re-contact with the correctional system or not (Table 16) [19]. To illustrate, mentally disordered offenders were more likely than non-mentally disordered offenders to have re-contact with the provincial correctional system (63.95% vs. 49.58%).

Table 16: Difference in re-contact of MDO vs. non-MDO

mentally disordered vs. non-mentally disordered	recidivist vs. non-recidivist 0	1	Total
0	127	120	247
	51.42	48.58	100.00
1	31	55	86
	36.05	63.95	100.00
Total	158	175	333
	47.45	52.55	100.00

Pearson chi2(1) = 6.0439 Pr = 0.014

The mean follow up periods of mentally disordered offenders vs. non-mentally disordered offenders were examined to ensure that there were no significant differences between the two groups in terms of their time at risk of re-contact. Time at risk is defined as the time from release until the end of the study. The t-test revealed that there were no significant differences between mentally disordered offenders and non-mentally disordered offenders in their mean follow-up periods (663 days vs. 658 days) (Table 17). As such, the statistically significant difference in terms of re-contact between mentally disordered offenders and non-mentally disordered offenders cannot be explained simply as a result of longer (or shorter) "opportunities" to come into re-contact with the correctional system.

[19] Analyses conducted with remanded offenders showed no significant difference with this variable (X^2=0.000; p=0.996) (see Appendix D).

Table 17: Difference in mean follow-up period of MDO vs. non-MDO

```
Two-sample t test with equal variances
------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |     247    658.0688    17.30008    271.8922    623.9936     692.144
       1 |      86    663.1977    31.89653    295.7963    599.7788    726.6165
---------+--------------------------------------------------------------------
combined |     333    659.3934    15.22425    277.8165    629.4452    689.3415
---------+--------------------------------------------------------------------
    diff |           -5.128849     34.8356               -73.65593    63.39823
------------------------------------------------------------------------------
    diff = mean(0) - mean(1)                                      t =  -0.1472
Ho: diff = 0                                     degrees of freedom =      331

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
Pr(T < t) = 0.4415         Pr(|T| > |t|) = 0.8830          Pr(T > t) = 0.5585
```

Bivariate relationships between the various predictors in this study were also examined for those offenders who had re-contact with the Ontario correctional system and those who did not have any re-contact during this study's follow-up period to further investigate the effect of each individual co-variate that was considered for inclusion in the subsequent multivariate analyses.

For sentenced offenders, there was a statistically significant difference between offenders who had re-contact and those who did not in terms of aboriginal origin (p=0.001, Table 18[20]). To illustrate, offenders who were of Aboriginal origin were more likely to have re-contact (68.24%) with provincial corrections than those who were not of Aboriginal origin (47.18%).

[20] Analyses conducted with remanded offenders showed no significant difference with this variable (p=0 396) (see Appendix D)

Table 18: Aboriginal origin of re-contact vs. no re-contact

aboriginal origin	recidivist vs. non-recidivist 0	1	Total
0	131	117	248
	52.82	47.18	100.00
1	27	58	85
	31.76	68.24	100.00
Total	158	175	333
	47.45	52.55	100.00

Pearson chi2(1) = 11.2577 Pr = 0.001

A statistically significant difference was also found between offenders who had re-contact and those who did not in terms type of offence (p=0.0001, Table 19). Offenders who had re-contact were less likely to have been incarcerated for a violent offence (41%) than those who did not have re-contact (59%) or other offence types (46.56% vs. 54.44%), and they were more likely to have been incarcerated for property offences (65.03% vs. 34.97%).

Table 19: Type of offence of re-contact vs. no re-contact

msosentrec	recidivist vs. non-recidivist 0	1	Total
Violent	59	41	100
	59.00	41.00	100.00
Property	50	93	143
	34.97	65.03	100.00
Other	49	41	90
	54.44	45.56	100.00
Total	158	175	333
	47.45	52.55	100.00

Pearson chi2(2) = 16.0552 Pr = 0.000

The difference between offenders who had re-contact and those who did not was significantly related to length of stay in custody before release (p=0.0001, Table 20). In other words, offenders who had a shorter mean length of stay in custody (139 days) compared to offenders who did not (193 days) were more likely to have re-contact with the provincial correctional system.

Table 20: Length of stay of re-contact vs. no re-contact

```
Two-sample t test with equal variances
------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |     148     193.473    13.08118    159.1394    167.6215    219.3244
       1 |     174    139.0517    8.969664     118.318    121.3477    156.7558
---------+--------------------------------------------------------------------
combined |     322    164.0652    7.857462    140.9971    148.6066    179.5238
---------+--------------------------------------------------------------------
    diff |            54.42125     15.4952                23.93592    84.90657
------------------------------------------------------------------------------
    diff = mean(0) - mean(1)                                      t =   3.5121
Ho: diff = 0                                     degrees of freedom =      320

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
Pr(T < t) = 0.9997         Pr(|T| > |t|) = 0.0005          Pr(T > t) = 0.0003
```

As shown in Table 21, the difference between offenders who had re-contact and those who did not in terms of gender approached significance (p=0.058[21]), as females were found to be somewhat more likely than males to have re-contact with provincial corrections (63.08% vs. 50%). However this difference was only marginally significant.

Table 21: Gender of re-contact vs. no re-contact

sex	recidivist vs. non-recidivist 0	1	Total
F	24	41	65
	36.92	63.08	100.00
M	134	134	268
	50.00	50.00	100.00
Total	158	175	333
	47.45	52.55	100.00

Pearson chi2(1) = 3.5876 Pr = 0.058

Using the variables which were found to be significantly related to whether an offender had re-contact with the provincial correctional system or not, multiple logistic regression was also performed to further examine the original relationship between mental illness and re-contact. It should be noted that this analysis automatically checks for multi-

[21] Analyses conducted with remanded offenders showed a significant difference with this variable (p=0.009) (see Appendix D).

collinearity and none of the predictor variables showed a significant relationship to one another[22]. Only the significant bivariate predictors were included in the logistic regression model, as logistic regression is sensitive to small sample sizes. Therefore, by only including the significant predictors, the power of the test is not dramatically affected. Multivariate models also allow us to examine the principal relationship of interest (i.e., between mental disorder and re-contact) while controlling for third variables. In other words, this type of analysis can assess the question of spuriousness. Note that the 11 offenders who had a length of stay beyond the provincial maximum were removed from the analysis, so the sample used in the multivariate logistic regression analysis was reduced to 322.

When all the variables significantly related to re-contact were included in this analysis, whether the offender was a mentally disordered offender or a non-mentally disordered offender, Aboriginal status and length of stay remained significantly related to re-contact while the type of offence was no longer significant (Table 22)[23]. Specifically, mentally disordered offenders were twice as likely as non-mentally disordered offenders to have re-contact with the provincial correctional system with an odds ratio of 2.125 (s.e.=0.595; p=0.007). Likewise, offenders of Aboriginal origin were twice as likely as those who were not of Aboriginal origin to have re-contact with provincial corrections with an odds ratio of 2 239 (s.e.=0.616; p=0.003). For length of stay it was found that an increase in length of custodial stay by one day decreases the chances of re-contact by 0.003% with an odds ratio of 0 997 (s.e.=0 0007; p=0.001). Length of stay was re-scaled from days to

[22] Additional tests for multi-collinearity were also performed and no significant effects were found Specifically, a Pearson R test of covariance was performed and no values p=0 190673

[23] It should be noted that the analysis was re-ran to include gender as a covariate as it was found to approach significance (p=0 058) No notable differences were found between the two analyses

months (odds ratio=0.554), such that an increase in length of stay by 30 days would decrease the likelihood of re-contact by 44.6% ((1 – 0.554)*100)[24].

Table 22: Logistic regression re-contact vs. no re-contact

```
Logistic regression                                   Number of obs   =        322
                                                      LR chi2(4)      =      29.12
                                                      Prob > chi2     =     0.0000
Log likelihood = -207.58473                           Pseudo R2       =     0.0655

------------------------------------------------------------------------------
  recidivist | Odds Ratio   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   mentalill |   2.125491   .5949632     2.69   0.007     1.227984    3.678967
         bb7 |   2.239061    .616488     2.93   0.003     1.305274    3.840874
         los |   .9970482   .0008784    -3.36   0.001     .9953282    .9987713
  msosentrec |   1.099967   .1747327     0.60   0.549     .8056829    1.501742
------------------------------------------------------------------------------
```

Overall, mentally disordered offenders have a greater chance of re-contact than non-mentally disordered offenders. This holds true when other variables are also controlled for in the analysis[25]. Furthermore, offenders of Aboriginal origin also have a greater chance of re-contact and offenders with longer lengths of stay in custody have a lesser chance of coming into re-contact with the provincial correctional system than offenders with shorter lengths of custodial stay.

Survival analysis

A survival analysis was also conducted to compare the rates of re-contact of mentally disordered offenders to non-mentally disordered offenders. The onset of risk of re-contact begins at the time of release and failure occurs when the subjects are re-admitted to correctional services (re-contact). This risk period is referred to as survival time. The same statistically significant covariates included in the logistic regression were included in the

[24] Analyses conducted with remanded offenders included gender and length of stay. In the multivariate analysis, only length of stay had a significant effect on re-contact (p=0.0001) (see Appendix D).
[25] Parallel analyses conducted with remanded offenders showed no significant effects (see Appendix E).

survival analysis. It was found that there was no significant difference between the onset of re-contact of mentally disordered offenders and non-mentally disordered offenders (Table 23). In other words, mentally disordered offenders and non-mentally disordered offenders come into re-contact with the provincial correctional system at the same rate. One variable remained significant in this analysis, namely Aboriginal origin. Specifically, offenders who were of Aboriginal origin were more likely than offenders who were not of Aboriginal origin to have higher rates of re-contact with the provincial correctional system with a hazard ratio of 1.641 (s.e.=0.266; p=0.002)[26].

Table 23: Survival analysis rates of re-contact of MDOs vs. non-MDOs

```
                     LR chi2(4)   =   10 15
Log likelihood  =    -813.26789                    Prob > chi2     =     0.0380

------------------------------------------------------------------------------
          _t | Haz. Ratio   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
  mentalill |   1.061672   .1804883     0.35   0.725      .760822    1.481488
        bb7 |   1.641327   .2660797     3.06   0.002     1.194551    2.255202
        los |   1.000633   .0006824     0.93   0.354     .9992963    1.001971
 msosentrec |   .9811942   .1000142    -0.19   0.852     .8035096    1.198171
------------------------------------------------------------------------------
```

In conclusion, although mentally disordered offenders are more likely than non-mentally disordered offenders to come into re-contact with the provincial correctional system, they are not different from non-mentally disordered offenders in terms of their rates of re-contact. In other words, when mentally disordered offenders do re-offend, they do so at the same rate as non-mentally disordered offenders. For example, one month after release from custody, the percentage of those who have re-contact will not be significantly different

[26] It should be noted that the analysis was performed including gender as a covariate as it was found to approach significance (p=0 058) and no notable differences were found between the two analyses Parallel analyses were conducted with remanded offenders and can be seen in Appendix E It should be noted though that the sample of remanded offenders was smaller (N=142) than the sample of sentenced offenders (N=322) Such a small sample size may render the survival analysis less stable

for both mentally disordered and non-mentally disordered offenders. It was however found that offenders of Aboriginal origin were more likely to have higher rates of re-contact.

Discussion

In Canada, there has been a dramatic increase in the number of persons with a mental illness coming into contact with police, the courts, and the correctional system (Sealy & Whitehead, 2004). For persons with a mental illness, the mental health system would appear to have failed in caring for their needs, too often leaving these individuals at risk for experiencing a mental health crisis which may bring them into contact with police and ultimately the criminal justice system as a whole.

These individuals have arguably been stigmatized due these 'non-normative' actions and behaviours for which tolerance in the community in terms of services as well in terms of public tolerance is limited (Hartwell, 2004). This phenomenon has been termed the "criminalization" of mentally disordered behaviour, whereby behaviours that were once considered legal and that were dealt with through psychological hospitalization became illegal and are now managed through the criminal justice system (Abramson, 1972). As a result, persons with diagnosed mental illnesses are over-represented in correctional facilities in Canada and abroad.

Once in the correctional system, little treatment is available for mentally disordered offenders in prisons where the symptoms of their mental illness are likely to persist. In addition to this, there is little follow-up upon release from prison. The fact that there is little treatment available to mentally disordered offenders while in prison is worsened by the detrimental effects of the prison environment on mental health. As such, their symptoms of mental illness are likely to persist, if not worsen, upon release. Thus, it would seem likely that these mentally disordered offenders will come into re-contact with the correctional system upon release.

Consequently, this large number of mentally ill offenders may continuously cycle and recycle through the correctional system where they can have a serious negative impact on the operation of correctional facilities if not properly treated and managed. Thus, their behaviour is likely to be re-criminalized upon release to the community.

Research to-date on the recidivism of mentally disordered offenders provides some support for the working hypothesis of the likelihood of re-contact of mentally disordered offenders, especially for provincial populations where the treatment that is available has been shown in the research to be inadequate (Kitchin, 2005).

Overall, this study found that mentally disordered offenders have a greater chance of re-contact with provincial correctional institutions than non-mentally disordered offenders. This difference holds true even when other variables are controlled for in the analysis. Specifically, multiple logistic regression revealed that mentally disordered offenders were twice as likely as non-mentally disordered offenders to have re-contact with the provincial correctional system.

However, although mentally disordered offenders were more likely to come into re-contact with the provincial correctional system than non-mentally disordered offenders, the survival analysis showed that mentally disordered offenders and non-mentally disordered offenders came into re-contact with the provincial correctional system at the same rate. In other words, they were not significantly different in terms of the speed at which they re-contacted with correctional institutions.

Two other variables were also shown to be related to re-contact in the multiple logistic regression analysis. Specifically, it was found that offenders who were of Aboriginal origin were twice as likely as those who were not to have re-contact with the provincial

correctional system. It was also found that an increase in length of custodial stay would decrease the likelihood of re-contact.

One variable remained significant in the survival analysis for sentenced offenders, namely, Aboriginal origin. Specifically, it was found that offenders of Aboriginal origin were more likely than those of non-Aboriginal origin to have higher rates of re-contact. That is, Aboriginal offenders came into re-contact at a faster rate than non-Aboriginal offenders.

Interestingly, the only significant difference found between mentally disordered offenders and non-mentally disordered offenders in the bivariate analyses was for offence type. Specifically, more mentally disordered offenders had a property offence than non-mentally disordered offenders in the sample. It should be noted however, that this variable was not found to be related to the re-contact of offenders in the sample; thus, this variable was not included in the multiple logistic regression analysis or the survival analysis.

These findings need to be considered within their methodological context. Most obviously, the correctional facilities included as study sites were specifically chosen because of their high rates of mental health alerts. However, the percentage of mentally disordered offenders is not much higher in the sample (25.8%) compared to the provincial population of offenders (15%-20%). Furthermore, despite the use of nonprobability sampling, descriptive statistics suggest that the sample was not seriously biased. Overall, the sample was found to closely approximate the population of Ontario provincial offenders in terms of key variables of interest when studying correctional populations, increasing our confidence in generalizing the findings beyond the strict confines of the study. There were however, two exceptions: Aboriginal inmates and females were oversampled which lead to a greater proportion of Aboriginal offenders and females in the sample than in the provincial population.

Implications of Study Findings

First, the findings of this study shed light on the research to-date on the relationship between mental illness and recidivism which has shown mixed results. This study showed that there was a greater likelihood of re-contact for mentally disordered offenders than non-mentally disordered offenders. However, this finding was qualified by also noting that there were no differences in the rates of re-contact of both mentally disordered offenders and non-mentally disordered offenders. In other words, although mentally disordered offenders are more likely to come into re-contact with provincial corrections than those who are not diagnosed as mentally ill, they do not re-offend any faster than other offenders. As such, these findings suggest that the relationship between mental illness and re-contact may be more complex than examined to-date. More specifically, the results seem to suggest that it is not the offending or re-offending behaviour that is necessarily different for mentally disordered offenders, but that they are being treated differently, or possibly not differently enough, compared to non-mentally disordered offenders, as they are coming back more often, but not at a different rate. This higher likelihood for mentally disordered offenders, then, may be more a product of how they are managed within the system and upon release than a product of their actions.

Having said that, an additional caveat is needed. While mentally disordered offenders are more likely than non-mentally disordered offenders to re-contact provincial corrections upon release, it is not clear in what form this re-contact takes. In fact, it is possible that the higher likelihood of re-contact by mentally-ill offenders may be primarily due to technical violations. In contrast, it may be that while non-mentally disordered offenders are less likely to have re-contact with the provincial correctional system, when

they do, it is for new offences as opposed to technical breaches of the conditions of their release.

Indeed, prior research on mentally disordered prison populations indicates that offenders with a mental illness are more likely to violate technical breaches of release conditions (Arboleda-Flórez et al., 1996; Motiuk and Porporino, 1991). It is possible that due to increased disciplinary infractions among mentally disordered offenders (Feder, 1991) even stricter restrictions are placed upon these individuals upon release and due to their mental illness, they may be unable to comply with these restrictions. Thus, this signifies problems with sentencing or release decision making and the treatment programs or lack thereof when sentenced and released from provincial institutions. This finding would further suggest that treatment of mentally disordered offenders might be better focused on improved discharge planning in order to help these offenders with the conditions of their release in order to avoid violations.

Second, the fact that almost no differences were found between mentally disordered offenders and non-mentally disordered offenders, with the exception of offence type, suggests that these two groups of offenders may share a number of similar criminogenic characteristics. That is, these two offender populations may have in common a number of risk factors which have been found to be correlated with criminal activity (Bonta et al., 1998; Brown, 2008). This finding would appear to find support with prior research which has found that the correlates of recidivism are the same for mentally disordered offenders and non-mentally disordered offenders (Bonta et al., 1998; Brown, 2008).

Within this context, the central difference between these two groups would be the presence (or absence) of a mental disorder. This may suggest that the greater likelihood of re-contact of the mentally-disordered offenders in this study is rooted in their mental

disorder or its effect on how they are treated in our current system. That is, in contrast with non-mentally ill offenders, mentally ill offenders may have two strikes against them – figuratively speaking. As ex-offenders, they may share with the general offender population many of the traditional risk factors for subsequent criminal activity. However, above and beyond these factors, this sub-population may also be more likely to experience re-contact with provincial corrections because of their mental illness. It may be that, due to public perceptions of the mentally ill as 'dangerous', the mentally disordered are criminalized, which in turn may lead to treatment refusal in the community. This double stigma of being both labelled as an offender and as mentally ill may contribute to the recycling of mentally disordered offenders in the provincial correctional system.

Thus, it would seem imperative that their mental health needs be addressed at the same time as other (more traditional) risk factors by the correctional system in order to reduce their (increased) likelihood of further re-contact with the provincial correctional system. This is not to say that there are no other alternative explanations for their increased likelihood of re-contact.

Third, this study demonstrated that the mentally-disordered offenders in this study were more likely than the non-mentally-disordered offenders to have been incarcerated for a property offence as their most serious offence. However, this difference in offence type was not related to re-contact with provincial corrections once other factors were controlled. In other words, the type of offence (i.e., violent, property or other) did not significantly affect the likelihood of re-contact or the rates of re-contact of offenders in the sample.

This finding would appear to render the relationship between mental illness and type of crime more complex. While mentally ill offenders in this study differed from non-mentally ill offenders in terms of the type of offence for which they were originally sentenced, this

variable was not found to be a significant predictor of re-contact with the provincial correctional system in the multivariate analyses. Thus, Porporino and Motiuk (1995) may have been partially right when they argued that there may exist "biased presumptions of risk", i.e., that the assumption that mentally disordered offenders are more violent simply leads to stereotypes and a lack of access to community treatment (Porporino and Motiuk, 1995, p.2). They appear in fact to be no more violent, as the study sample showed, than non-mentally disordered offenders (34% vs. 29%). This is however, only one measure of 'dangerousness' or possible future violence, though this is the type of official record that the correctional system has, thus the most likely to be documented. Potential for violence is considered when deciding whether to admit someone to treatment or upon discharge from a correctional facility though dangerousness is very difficult to predict especially if it is unclear what is being predicted (e.g., future offending, violence, etc). Misperceptions that the mentally disordered are 'dangerous' may contribute to their imprisonment, as violence may be used as a reason to refuse treatment in the community and justify the correctional confinement of these offenders.

Finally, one of the goals of corrections is to reduce re-offending for all types of offender populations, including the mentally ill. Clearly, the achievement of this correctional objective has been rendered more complex with the de-institutionalization of mental health facilities and the lack of community services available to mentally disordered individuals, specifically those involved in criminal activity. Thus, mentally disordered offenders have a double stigma due to being both mentally ill and an offender. Furthermore, community treatment will typically only be given when the likelihood of re-offence is low (MOHLTC, 2006).

The finding that mentally disordered offenders have a greater likelihood of re-contact than non-mentally disordered offenders suggests that greater focus needs to be given to this sub-group of offenders. Indeed, their higher likelihood of re-contact serves – like recidivism rates generally - as a general measure of the rehabilitative effect of the correctional system on sentenced offenders and can also serve as a measure of the cost-efficiency of the correctional system in reducing re-admissions to correctional supervision. Better treatment options should be available to mentally disordered offenders upon release to the community in order to allow for more successful re-integration of offenders into the community to prevent future re-offending (Lamb et al., 2004).

Of primary interest to correctional administrators and managers is population-specific recidivism in order to target the re-contact of particular (high-risk) populations through tailored policies, programs and practices. Certainly as an effective strategy to reduce ex-offender recidivism, corrections has an interest in focusing treatment on the groups with the greatest likelihood of re-offending. Targeting interventions not only allows for the better use of resources, but it also has a higher probability of success in reducing re-contact with the provincial correctional system by focusing on populations who are most likely to come into re-contact with the correctional system.

Within this context, it would seem important to increase correctional programming specific to the mentally ill. However, it would appear relevant – for the purposes of designing treatment programs for this population – that although this study found that offenders with a mental illness are more likely to come into contact with the provincial correctional system than other offenders, their rates of re-contact are no different from those of the general offender population. As such, correctional treatment may need to target mental health needs, as well as needs related to the offending behaviour of all offenders. Within this

context, mentally disordered offenders might also benefit from increased availability of information about risk factors associated with recidivism in general and not specifically related to mental illness such as housing, employment and community re-integration (Fisher et al., 2006).

Ironically, part of the solution may reside outside of the correctional system. Indeed, concerns have been raised that people who have a mental illness and have contact with the criminal justice system are being criminalized, that is, they are being inappropriately incarcerated, rather than being provided with mental health services either in hospitals or in the community (MOHLTC, 2006). Specifically, it has been argued that "[p]eople with mental illness comprise one of the most vulnerable and treatable populations in our society, and they are being housed in our most punitive institutions" (APA, 2004, p.2). Certainly given the detrimental effects of the prison environment of the mentally ill, more effective treatment will likely be carried out in the community.

In fact, many different solutions have been proposed to deal with the mentally ill population found within the criminal justice system at all levels of the process, including the police, the courts and corrections, as well as the community. The Criminal Code of Canada allows the use of alternative measures to incarceration, including treatment, in cases involving persons with a mental illness (R.S.C. 189Cc.C-46). Mental health diversion is one of these alternatives which can be applied at various points at which persons with a mental illness may come into contact with the criminal justice system.

There are three categories of mental health diversion programs in Canada. These include pre-arrest or pre-booking diversion, court diversion and mental health courts. Unfortunately little is known about the long-term health impacts of such programs (CIHI,

2008). Moreover, it is difficult to judge their effectiveness, for they are not easily evaluated empirically (Grudzinskas et al., 2005).

One study by Steadman et al. (1999) however, looked at persons diverted from the criminal justice system through a court-based program and compared the outcomes with individuals who were not diverted. Few differences were found between diverted and non-diverted individuals. However, one difference worth noting is that one third of those who were not diverted (16 of 45) remained incarcerated after the two-month follow-up period, while all 35 of the diverted offenders had been released.

This finding alludes to potential correctional savings of diversion (Steadman et al., 1999). More broadly, a study conducted by Hodgins et al. (2007) noted many benefits of community-based programs over alternatives including hospitalization and incarceration (CIHI, 2008). These benefits include lower expenses, reduced recidivism rates and prevention of skill-loss (CIHI, 2008). Thus, it is a benefit to all those concerned as correctional settings are not equipped to treat or manage persons with a mental illness which can potentially lead to clinical and public safety risks.

Similarly positive findings were found in another Canadian study. The risk, need, and responsivity principles of correctional treatment involve the matching of level of service to the risk and need profiles of the offenders which are difficult to translate into practical terms. According to Andrews and Bonta (2003) the reported effect of appropriated treatment delivered inside a prison is smaller than the reported effect of appropriated treatment delivered in the community (mean effect sizes of .17 and .35 respectively) (cited in Bourgon and Armstrong 2005). With such a difference, one would expect that diversion to community services would be a more frequently utilized option when delivering treatment to offenders.

Beyond the type of intervention with the mentally ill, what seems to be a recurring theme among all potential solutions is the need for communication between the criminal justice system and the health system to provide proper treatment to persons with mental illness (APA, 2004; Blackburn, 2004; Bland et al., 1998; Bourgon and Armstrong, 2005; Broner et al., 2004; Forensic Mental Health Services Expert Advisory Panel, 2000; Kitchin, 2005: Lamb et al., 2001; Skinner et al., 2004; Thompson et al., 2003) as well as continuity of care throughout the entire criminal justice process including the police, the courts, in prisons, and upon release from institutions into the community (CIHI, 2008: Lamb et al., 2004; Lurigio and Swartz, 2000; MOHLTC, 1999; 2003; 2006; Skinner et al., 2004). Illustratively, it has been suggested that without the resources and supports available in community agencies or at the hospital to provide treatment and counselling for persons with a mental illness who come into contact with police, individuals may get caught up in an inhumane cycle, therefore of arrest, release, and subsequent re-arrest (Hartford, 2003; Lamb et. al., 2004).

Limitations

One limitation of the current study resides in the methodology used. Although many offenders in the sample came into re-contact with the provincial correctional system multiple times, this study only examined the first re-contact of the offenders in the sample. In addition, the maximum follow-up period upon release from custody for offenders under study was only three years. Thus, there are many other facets of re-contact that were not considered in this study.

A similar concern resides in the definition of re-contact used in this study which did not separate those who are being re-admitted to correctional supervision as a remanded offender from those re-admitted as a sentenced offender. In other words, it did not

differentiate between those who are simply charged for an offence and those who are convicted. Further, this study did not distinguish between new offences or those who fail to comply with the conditions of their release. As noted above, the research on mentally disordered prison populations indicates that offenders with a mental illness are more likely to violate technical breaches of release conditions (Arboleda-Flórez et al., 1996; Motiuk and Porporino, 1991).

Conceptually, there are also many other indicators of correctional success; re-contact is only one measure and the use of recidivism statistics has been questioned as indicators of individual characteristics of re-offending behaviour. By themselves, official statistics or rates cannot account for the complex range of events and behaviours that have been deemed criminal (Amoretti and Landreville, 1996). Other considerations that are ignored when using such a measure include many individual attributes and circumstances such as problematic behaviours, socioeconomic status, medical issues, physical disabilities, social skill deficits, possible needs for supervision and other personal factors (Amoretti and Landreville, 1996).

Finally, the indicator of mental illness used in this study may also have certain limitations. An offender was considered to be mentally ill if he/she had an official diagnosed mental illness in his/her medical file. It should be noted that this information was in the offender files, and was not obtained through a mental health assessment. Thus, there is no way to discern when or how the offenders were diagnosed only that it was made by a psychiatrist. This is then, information that is already available to correctional administrators. Research has shown that many mentally disordered offenders are often not identified as such in correctional settings (Birmingham et al., 1998 cited in Reed, 2002). Furthermore, different types of mental illness were not examined due to the small sub-sample sizes which

could possible reduce the power of the tests utilized for this study. In effect, the measure of mental illness used in this study includes a broad range of mental disorders with varying degrees of seriousness. Thus, individual mental illnesses and their impact on re-contact could not be determined.

Future research

This study examined predictors of re-contact and found that both being of Aboriginal origin and the length of stay in custody were related to the re-contact of offenders in the overall sample. However, this study did not conduct these analyses separately for mentally disordered offenders and non-mentally disordered offenders. In terms of the actual treatment that should be targeted to this group, corrections should also be concerned with identifying the specific needs of the mentally ill which seem to lead to further offending. Future research should examine whether the predictors of re-contact are different for mentally disordered offenders and non-mentally disordered offenders. Indeed, any differences would have implications for the specific treatment of these offenders as their needs which seem to lead to further offending may be different. Such a strategy would help in targeting interventions where they are needed most.

The research has shown that mentally disordered offenders are more likely than non-mentally disordered offenders to violate the conditions of their release (Arboleda-Flórez et al., 1996; Motiuk and Porporino, 1991). This type of finding should not be surprising. The research has also shown that few jails provide information regarding community mental health and/or social service options available to them upon release (Lurigio and Swartz, 2000). Further, others suspect that the mentally ill may lack the capacity to access these programs and to comply with the treatment that is provided to them (Collins, 2005). It follows that the mentally ill may also lack the capacity to comply with the conditions of their release,

and are likely to be arrested again. Thus, future research should also distinguish between different forms of re-contact with the provincial correctional system, for example new convictions versus violations of the conditions of release.

Although this study only examined the first incidence of re-contact with the provincial correctional system, offenders may come into re-contact with the correctional system multiple times. Therefore, multiple re-contacts should also be studied when feasible. Indeed, it is possible that while mentally ill offenders are more likely than non-mentally ill offenders to have re-contact with the correctional system subsequent to the initial incarceration, there may be no differences between these two groups when multiple re-contacts are considered.

Longer follow-up periods after release from custody would also be beneficial. Indeed, this strategy may be important in gaining a better understanding of the long term patterns of re-contact with the provincial correctional system of mentally disordered offenders compared to the general population of offenders.

Finally, further research is warranted in terms of the role of Aboriginal origin with regards to re-contact with provincial corrections, as this study found that these offenders are more likely to come into contact with the Ontario correctional system. Further investigation into this relationship along with other possible risk factors would be beneficial in terms of informing programs and policies directed toward this group.

Conclusions

Two competing goals of treatment are raised when addressing the mental health problems of offenders in correctional facilities: the reduction of recidivism and the reduction of mental health symptoms (Welsh and Ogloff, 2003). Mentally disordered offenders are unique because they would appear to require treatment for both their mental disorder and their criminal behaviour. Both the criminal justice system and the health system must work hand in hand to provide treatment on a basis of need in order for treatment to be effective (Forensic Mental Health Services Expert Advisory Panel, 2002).

This study revealed that the majority of offenders in the sample had never been admitted to a psychiatric hospital in their lifetime (66.1%) and the majority had no contact with community mental health within the last year prior to their initial interview (67.6%). The longer that mentally disordered offenders await treatment, the more deteriorated their mental health state can become. Upon release to the community, better treatment options should be available to mentally disordered offenders (Lamb et al., 2004). If the mental disorder is treated, recidivism will likely be reduced.

> "By containing people in jails and prisons rather than treating them, we lose out on the contributions these people can make to society. Rather than allowing them to benefit from effective treatments and be useful members of society, criminalizing mental illness creates a costly drain on the community and perpetuates a cycle of recidivism (APA, 2004, p.4-5)."

An assessment of the health needs of federal inmates conducted by Moloughney (2004) noted three main reasons for providing mental health care within the correctional system: to decrease suffering from mental illness, to reduce the debilitating effects of mental

illness allowing the inmate to effectively participate in his/her rehabilitation, and to ensure the safety of other inmates, staff, volunteers and visitors (cited in CIHI, 2008).

For each week of treatment received there is an expected 1.2% to 1.7% reduction in recidivism; thus, the sooner the average offender receives treatment, the higher the reduction in recidivism. Based on this point, arguably, it is better to administer treatment early in the offenders' contacts with the correctional system, including the remand population in provincial institutions. Many reviews have shown that that average cost benefit per offender can range from $4,653 to over $80,000 (Bourgon and Armstrong 2005).

Furthermore, a U.S. study comparing diverted and non-diverted offenders revealed that over a 12-month period, there were no significant differences in risk between the diverted and non-diverted groups. Moreover those who had committed a violent offence that were diverted were at no greater risk of recidivism than those who had committed a non-violent offence who were not diverted. Thus, this study revealed that such treatment can be provided to mentally disorder offenders in place of incarceration with no increased risk to the community. These findings indicate a possible cost-savings of diversion (Broner et al., 2004).

The motives for treatment should, however, not be based solely on a positive cost benefit of treatment over incarceration. Access to treatment and necessary human services will improve the quality of life and public safety in the community as well as lead to a more effective use of public resources. Thus, the value is not just economic, but moral as well (APA, 2004).

Equally important is the clear need for better communication between the criminal justice system and the health system to provide not only proper treatment to persons with

mental illness but also continuity of care throughout the entire criminal justice process. Lamb et al. (2004) noted that there is a need for a better treatment philosophy with clear goals, and better linkages between the criminal justice system and treatment staff. Effectiveness can be achieved through proper education regarding mental illness at all levels of the criminal justice system and communication between various criminal justice and health care agencies to assure continuity of care.

The Goal of the recent Ontario initiatives is "[t]o re-direct people from the criminal justice and corrections systems to appropriate mental health services and supports where possible, while considering the safety and security of the person and the public" (MOHLTC, 2006, p.9). Services in the community can also help promote the individual's social functioning and quality of life (Blackburn, 2004). In order to accomplish this most efficiently, the Ministry would need to determine the level of need for services at all levels of the criminal justice process as well as in the community.

It is not only important to ensure that there are solutions in place to deal effectively with the needs of mentally disordered offenders, but it is also important to evaluate these programs to ensure that they are helping and not harming these individuals. The document entitled, *Mental Health Accountability Framework* provides a framework for evaluating mental health services based on *Making it Happen*, the Ministry document outlining guidelines for mental health reform. The purpose is to utilize this document to measure performance indicators and outcome indicators to ensure accountability and to develop standards of care in accordance with best practices. This will help in identifying useful indicators for whether or not appropriate treatment of mentally disordered offenders is provided, as well as indicate areas that need improvement (MOHLTC, 2003).

Mentally disordered offenders are a special population in terms of recidivism. Therefore, they require a special or individualized response from corrections that is unique to them. An individualized response targeting this particular group of offenders will have many benefits - the most obvious of which is the reduction in costs to society, both in terms of direct monetary costs as well as the indirect costs of pain, suffering and loss as a result of crime - by reducing re-offences or violations and the subsequent re-contact with the provincial correctional system. As such, there may be fewer victims of crime, particularly of violent crime, as a link between mental illness and violence has been demonstrated in the research, although the exact nature of this relationship is unclear. This can additionally lower court processing costs as the reduction in the number of persons re-offending would have an effect here as well. Finally, targeted interventions can result in lower correctional costs as fewer mentally disordered offenders will be re-admitted to correctional supervision once released.

Beyond these benefits to society generally once the mentally ill offender is released from prison, other benefits can exist with the prison itself. Specifically, better treatment has the potential to reduce the risk of harm to mentally-disordered offenders, other inmates and correctional staff while in prison. Moreover, providing targeted treatment to a sub-group of offenders that is clearly in need of treatment but who, until now, has been largely forgotten is the humane thing to do.

Mentally disordered offenders comprise a criminalized population that is both psychiatrically and socially disadvantaged. The present system in which little or no treatment or discharge planning is given does not appear to modify the future behaviour of these offenders, as this study has shown that mentally disordered offenders have a higher likelihood of re-contact with the provincial correctional system upon release. Thus, this

system is failing these individuals and they are caught in a perpetual cycle of re-incarceration. Something must be done to prevent the further re-contact of mentally disordered offenders in hopes of benefitting the mentally ill, their families and the systems charged with their care.

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APPENDIX A

NIPISSING UNIVERSITY

SIGNED CONSENT FORM

CONSENT TO PARTICIPATE IN RESEARCH

IDENTIFYING THE PSYCHIATRIC CARE NEEDS OF ADULT OFFENDERS IN THE ONTARIO CORRECTIONAL SYSTEM

You are asked to participate in a research study conducted by Dr. Gregory P. Brown and Ms Krista Mathias and two student research assistants from the Institute for Applied Social Research at Nipissing University in North Bay, Ontario. Other members of the research team are Kyla Marcoux, Kindra Houle and Tara Schuck. The research is being sponsored by the Ontario Ministry of Community Safety and Correctional Services.

If you have any questions or concerns about the research, please feel free to contact Dr. Gregory P. Brown at (705) 474-3461 ext. 4454.

PURPOSE OF THE STUDY

The purpose of this study is to identify any needs for psychiatric care that individuals in a jail or correctional centre may have. The assessment tool being used in the research will help to identify what these needs are, if any.

- PROCEDURES

If you volunteer to participate in this study, we would ask you to do the following things:

1) Read this form describing what the study is all about and, if you agree to participate, sign that you consent to participate.

2) With the researcher, complete the RAI-MH assessment tool. It is a paper and pencil assessment that the researcher fills out based on your answers. This will take about 1 hour, and the researcher will use one of the rooms here at the institution to complete the assessment. This tool is used by the Ministry of Health to identify whether an individual has any psychiatric care needs – anything from experiencing mild stress that keeps you awake at night through to the need to be in a hospital.

3) Give the researchers permission to check for additional information that may be in the files kept by the Ministry of Community Safety and Correctional Services

that will help in completing the RAI-MH (e g health information, criminal history, offender classification assessments)

When the research is finished and a final report has been written, you can get a copy by contacting the Superintendent's office here, by calling the Program Effectiveness, Statistics and Applied Research Unit in North Bay , Ontario at (705) 494-3352 or by contacting their website at MCSCS@gov on ca

- POTENTIAL RISKS AND DISCOMFORTS

There are no known risks or discomforts associated with this research However, if you begin to feel uncomfortable, you can stop the research session at any time or withdraw completely without any penalty to you

- POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY

By participating in this research, you are helping the Ministry of Community Safety and Correctional Services to identify the needs that individuals in jails and correctional centres have for psychiatric services This knowledge will help the Ministry to provide better treatment for those who need it

- PAYMENT FOR PARTICIPATION

There is no payment for participating in the research

- CONFIDENTIALITY

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission

I understand that the information I provide is confidential, and will never be revealed to anyone except under the following circumstances if I disclose information about plans to harm myself or others, information concerning any unknown emotional, physical or sexual abuse of children, or information about any other criminal activities not already known to authorities, the researcher is required to report this information to the appropriate authorities

The researcher will not put your name on the RAI-MH assessment form The number assigned by the Ministry to your file will be recorded on the form so that the researchers can fill in additional information from your file

Once all the information collected has been entered into a computer file, the RAI-MH form will be destroyed

- PARTICIPATION AND WITHDRAWAL

You can choose whether to be in this study or not. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind. You may exercise the option of removing your data from the study. You may also refuse to answer any questions you don't want to answer and still remain in the study. The investigator may withdraw you from this research if circumstances arise which warrant doing so.

- RIGHTS OF RESEARCH SUBJECTS

You may withdraw your consent at any time and discontinue participation without penalty. This study has been reviewed and received ethics clearance through Nipissing University's Research Ethics Committee. If you have questions regarding your rights as a research subject, contact:

Research Ethics Co-ordinator Telephone: 705-474-3461, # 4558

Nipissing University

North Bay, Ontario

P1B 8L7

- SIGNATURE OF RESEARCH SUBJECT/LEGAL REPRESENTATIVE

I understand the information provided for the study "Identifying the Psychiatric Care Needs of Adult Offenders in the Ontario Correctional System" as described herein. My questions have been answered to my satisfaction, and I agree to participate in this study. I have been given a copy of this form.

_____

Name of Research Subject (please print)

_____ _____

Signature of Research Subject Date

- SIGNATURE OF INVESTIGATOR

In my judgement, the subject is voluntarily and knowingly giving informed consent to participate in this research study.

_____ _____

Signature of investigator

APPENDIX B

Analyses were performed for remanded inmates as a preliminary investigation of the differences in re-contact for this group of offenders. Remanded inmates were treated as a group regardless of the different possibilities for release, as dividing up the sub-sample of remanded offenders would have decreased the sample size which, in turn, would affect the power of the statistical analyses to detect the possible effect of co-variates and differences between offender populations. It should be noted that in including remanded offenders, there is a chance that some offenders in the sample were not found guilty, and that the charges for which they were incarcerated at the time of the interview were dropped, dismissed, or stayed. Thus, re-offending for remanded offenders may not necessarily be considered a subsequent offence as the initial charges for which they were incarcerated could have been dropped, so their re-contact is a result of being incarcerated, but not necessarily the result of being convicted and punished for a crime. The necessary information to discern whether this has happened is not available so this possibility was not further investigated.

The re-contact of remanded inmates was examined where recidivism was defined as any re-admittance to correctional supervision following arrest for either a new charge or a new sentence. Note that only new charges or sentences were counted as re-contact. In other words, if the offender had been remanded on a particular offence and was then re-admitted to serve his or her sentence for that same crime, this was not counted as re-contact.

There were 147 remanded offenders in the sample. Table 1 below presents the gender of the sample which was predominantly male (72.1%). This distribution was compared to a snapshot of remanded provincial admissions for Ontario offenders for the year 2006-2007 by gender (reference: Kathy Underhill). There did not appear to be any

major differences in terms of gender between the sample and population, although there were slightly more males in the populations (86.4%) which may be a result of having oversampled females.

Table 1: Gender of sample vs. population

Remanded Admissions					
Sample			Provincial Population		
Males	Females	Total	Males	Females	Total
106 (72.1%)	41 (27.9%)	147 (100%)	56,935 (86.4%)	8.947 (13.6%)	65,882 (100%)

A table of sentenced offenders by gender and age at the time of admission are presented in Table 2 below, and are compared to the gender and age distributions of a snapshot of provincial adult remand admissions for 2006-2007 in Ontario. The majority of both males and females were between the ages of 18 and 24 (27.4% and 26.9% respectively), followed by those aged 30 to 39 (26.4% and 34.2%). The next highest group for males was for those aged 25 to 29 for males (22.6% compared to 12.2% for females) and 40 to 49 for females (19.5% compared to 18.9 for males). Few offenders in the sample (both males and females) were aged 50 and above (4.7% and 7.2% respectively). The average age of the sample (31.9 for males and 32.8 for females) closely approximates the average age in the population for both males and females (33.8 and 33.5 respectively)[27].

[27] Although standard deviations could be calculated for the study sample, this information was unavailable for the provincial population.

Table 2: Age of remanded offenders in the sample vs. the population

Age category	Remanded Admissions							
	Sample				Provincial population			
	M	%	F	%	M	%	F	%
18 to 24 years	29	27.4%	11	26.9%	16,946	29.7%	2,311	25,8%
25 to 29 years	24	22.6%	5	12.2%	9,028	15.9%	1,528	17.0%
30 to 39 years	33	26.4%	14	34.2%	14,916	26.2%	2,713	30.4%
40 to 49 years	20	18.9%	8	19.5%	11,932	21.0%	1,941	21.8%
50+ years	5	4.7%	3	7.2%	4,102	7.2%	453	5.0%
TOTAL	**106**	**100.0%**	**41**	**100.0%**	**56,924**	**100.0%**	**8,946**	**100.0%**
Average age (in years)	**31.9**		**32.8**		**33.8**		**33.5**	

Aboriginal inmates were oversampled which leads to a greater proportion of Aboriginal inmates in the sample. Of the 147 remanded offenders in the sample, 20.4% (30) were of Aboriginal origin. For comparison, 9% of provincial remanded admissions for the years 2006-2007 were of Aboriginal origin. Due to the large difference between the sample and the provincial population in terms of Aboriginal status, caution is warranted when interpreting the study results.

In terms of marital status, 54.4% of remanded offenders were single/never married, 24.5% were married or common-law, and 19.7% were widowed, separated, or divorced (See Table 3). Unfortunately no data were available on the marital status of the provincial population for comparison.

Table 3: Marital status of the sample.

Marital status	Remanded Admissions	
	N of sample	% of sample
Single/never married	80	54.4%
Married/common law	36	24.5%
Widowed/separated/divorced	29	19.7%
Unknown	2	1.4%
Total	**147**	**100.0%**

With regards to the educational level of remanded offenders, 48.3% had not completed high school, 24.5% had their high school diploma, and 26.5% had some form of post-secondary education (See Table 4). Unfortunately no data were available on the education level of the provincial population for comparison.

Table 4: Education level of sample

Education level	Remanded Admissions	
	N of sample	% of sample
Less than high school	71	48.3%
High school	36	24.5%
Post-secondary	39	26.5%
Unknown	1	0.7%
Total	**147**	**100.0%**

Below is a table comparing offence categories of the sample to the total Ontario inmate population for remanded offenders alone (See Table 5). There was a higher percentage of violent offences among offenders in the sample (51.0%) than in the population (37.6%) and a lower percentage of property (19.7%) offences and other offences (e.g., drugs, traffic) in the sample (29.3%) compared to the population (25.6% and 36.8% respectively).

Table 5: Offence type of sample vs. population

	Remanded Admissions	
Offence Type	**Sample**	**Provincial population**
Violent	75 (51.0%)	24,738 (37.6%)
Property	29 (19.7%)	16,891 (25.6%)
Other	43 (29.3%)	24,252 (36.8%)
Total	**147 (100.0%)**	**65,881 (100.0%)**

Average length of stay in custody was calculated for remanded offenders It was found that the average length of stay was 189 days (min =4, max =719) No comparable offence data were available for the provincial population[28]

Offence severity (OTIS MSOSEVER scale obtained from the OTIS data set) is measured on a scale from 1 to 26 where 1 is the most serious and 26 is the least serious offence (See Table 6 below) There highest percentage of cases for remanded male offenders had severity rankings between 1 and 5 (59 3%) followed by those between 6 and 10 (21 7%) For females, the highest percentage of cases had severity rankings between 6 and 10 (41 6%) followed by those between 1 and 5 (34 1%) No comparable offence severity data were available for the provincial population

Table 6: Offence severity by gender

	Remanded Admissions			
Offence Severity	**Male**	**% of Total**	**Female**	**% of Total**
1-5	85	59 3%	14	34 1%
6-10	97	21 7%	17	41 6%
11-15	10	9 5%	8	19 4%
16 +	10	9 5%	2	4 9%
Total	**106**	**100.0%**	**41**	**100.0%**

Of the 147 remanded offenders in the sample, 27 9% (41) were considered to be mentally ill and 72 1% (106) were not This is higher compared to the provincial rate for mentally disordered offenders requiring clinical intervention which ranges between 15% and 20% (MOHLTC, 2006) Correctional facilities included as study sites were specifically

[28] Note that provincial stays in custody are two years less a day which corresponds to 729 days It was found that five males were in custody longer than this maximum (min =4, max =1,234) These have been considered for the purposes of this study to be merely data entry errors and this was the only anomaly found for these cases As such, these five cases were only removed from the analyses which included this variable

chosen because of their high rates of mental health alerts, although the percentage is not much higher in the sample (25.8%) compared to the population (15%-20%), so this should not significantly bias the results. Note that only inmates who had an official diagnosis on in their correctional medical file were considered to be mentally ill in this study. Therefore, it is possible that this variable underestimates the prevalence of mental disorder as many of the offenders in the study may not have had a mental health assessment, or it may not have been on file.

In terms of previous contact with mental health services, within the last two years before the time that the interview took place, 10.9% of the sample (N=147) had been admitted to a psychiatric hospital one to two times, and 4.1% had been admitted three or more times. Of those admitted to a psychiatric hospital at least once in the last two years, 54.5% were hospitalized for 30 days or less, 27.3% for 31 days to a year, and only 4.5% for more than a year. The remaining 13.7% were not reported.

Within their lifetime, 20.4% of the sample had been hospitalized one to three times, 3.4% four to five times, and 4.8% six or more times. Of those who had been admitted to a psychiatric facility at least once in their lifetime, 54.8% were between the age of 15 and 24 when they were admitted for the first time, 28.6% were aged 25-44, 9.5% were aged 14 or younger, only 4.7% were between 45 and 64, and 2.4% not.

The majority of offenders had no contact with community mental health within the last year since the time of interview (66.0%). For those who had contact with community mental health within the last year, 51.0% had their last contact in the past 31 days or more and 49.0% had their last contact in the past 30 days or less.

Table 7 below shows the psychiatric diagnoses of the sample of mentally ill remanded inmates by gender. Of this subset of offenders, 10.9% have multiple diagnoses with 6.1% of these being co-occurring substance abuse disorders. Note that because an offender may have multiple diagnoses, the total in the figures below are not the same as those reported elsewhere in Appendix B. For males, the most frequent psychiatric diagnosis was for mood disorders (30.4%). However, this was much higher for females (52.8%). Similarly, females were diagnosed with psychosis/schizophrenia (17.7%) more than males (8.7%) and were diagnosed with personality disorders (17.7%) more than males (13%). On the other hand, substance abuse disorders were much higher among males (28.3%) than females (5.9%), as was the case for impulse control disorders/adjustment disorders. Males and females had similar rates of anxiety disorders (6.5% and 5.9% respectively) and ADD/ADHD (2.2% vs. 0%). In terms of different psychiatric diagnoses overall, the proportions in the sample seem to be similar to those in the research (Seto, 2004; Brink et al., 2001; Motiuk and Porporino, 1991). However, substance abuse and personality disorders seem to be much lower in the sample. For substance abuse, 22.2% of remanded offenders in the sample had a diagnosis of substance abuse compared to studies of Canadian federal prisons which have shown rates of 40.9% to 75.7% (Seto, 2004; Brink et al., 2001; Motiuk and Porporino, 1991). For personality disorders, the level in the sample (14.3%) was much lower than the 56.9% for antisocial personality disorder shown in the research (Brink et al., 2001). One issue with comparisons is that studies may have used different measures of mental disorder, some relying on assessment tools and others on recorded diagnoses. Mental health can also be assessed at different periods throughout the offender's incarceration; for example, some studies looked at prevalence rates at the time of admission to prison, others upon release. In the present study the diagnoses were found in the offender's medical file, so there was no way to determine when the assessments were

conducted (e.g., prior to incarceration or during) and, as such, can be different for all study participants (Brink et al., 2001; Motiuk and Porporino, 1991).

Table 7: Psychiatric diagnosis by gender

Psychiatric diagnosis	Remanded Admissions		
	Males	Females	Total
Psychosis/schizophrenia	4 (8.7%)	3 (17.7%)	7 (11.1%)
Mood disorders	14 (30.4%)	9 (52.8%)	23 (36.5%)
Anxiety disorders	3 (6.5%)	1 (5.9%)	4 (6.4%)
Impulse control /adjustment disorders	5 (10.9%)	0 (0.0%)	5 (7.9%)
Personality disorders	6 (13.0%)	3 (17.7%)	9 (14.3%)
ADD/ADHD	1 (2.2%)	0 (0.0%)	1 (1.6%)
Substance abuse	13 (28.3%)	1 (5.9%)	14 (22.2%)
Total	**46 (100.0%)**	**17 (100.0%)**	**63 (100.0%)**

In terms of self injurious behaviour, 21.1% of this subset of remanded offenders claimed to have attempted to injure themselves more than a year ago, 8.1% attempted within the last year, 70.1% never attempted to injure themselves and the remaining 0.7% was not reported. Almost one quarter of remanded offenders (23.8%) claimed that the intent of the self-injurious attempt was to kill him/herself and the remaining 76.2% either did not attempt a self-injurious act or their intent was not to kill themselves. Of concern, 4.1% of remanded offenders considered performing a self-injurious act within the last 30 days.

Overall, the sample closely approximates the population in terms of key variables of interest when studying correctional populations. Unfortunately, information about the population was not always available for comparison; however research available for comparison did not suggest any major issues of concern.

APPENDIX C

Inferential analyses were conducted to provide a description of the two principal groups of interest to this study and to examine the possible correlates of the independent variable.

Table 1 presents the gender of mentally disordered offenders compared to non-mentally disordered offenders. No significant difference was found between mentally disordered offenders and non-mentally disordered offenders in terms of gender (X^2 = 0.0536; p=0.817). In other words, both males and females were no more likely to have a mental disorder (70.7% and 29.3% respectively) than to not have a mental disorder (72.6% and 27.4%).

Table 1: Gender of MDO vs. non-MDO

Remanded Admissions					
MDO			Non-MDO		
Males	**Females**	**Total**	**Males**	**Females**	**Total**
29 (70.7%)	12 (29.3%)	41 (27.9%)	77 (72.6%)	29 (27.4%)	106 (72.1%)

Below is a table of remanded mentally disordered offenders by gender and age at the time of admission compared to remanded non-mentally disordered offenders in the sample (Table 2). For mentally disordered offenders, a higher percentage of males were in the 25 to 29 age group (31%) compared to non-mentally disordered offenders (19.5%) and a somewhat lower percentage were in the 18 to 24 year age group (24.1%) compared to non-mentally disordered offenders (28.6%). For female offenders, there were far fewer 18 to 24 year old mentally disordered offenders (8.3%) compared to non-mentally disordered offenders (34.5%), but there were more 25 to 29 years old and 30 to 39 year old females among mentally disordered offenders (16.7% and 10.3% respectively) compared to non-mentally disordered offenders (10.3% and 31%). There was also a higher percentage of females aged 50 or above among mentally disordered offenders (16.6%) compared to non-

mentally disordered offenders (3.5%). Note that there was no significant difference in the mean age of mentally disordered offenders (32.2 for males and 36.7% for females) compared to non-mentally disordered offenders (31.7% for males and 31.3% for females) (t = -1.0641; p=0.8555).

Table 2: Age of remanded MDO vs. non-MDO by gender

Age category	Remanded Admissions							
	MDO				Non-MDO			
	M	%	F	%	M	%	F	%
18 to 24 years	7	24.1%	1	8.3%	22	28.6%	10	34.5%
25 to 29 years	9	31.0%	2	16.7%	15	19.5%	3	10.3%
30 to 39 years	7	24.1%	5	41.7%	21	27.2%	9	31.0%
40 to 49 years	5	17.3%	2	16.7%	15	19.5%	6	20.7%
50+ years	1	3.5%	2	16.6%	4	5.2%	1	3.5%
TOTAL	**29**	**100.0%**	**12**	**100.0%**	**77**	**100.0%**	**29**	**100.0%**
Average age (in years)	**32.2**		**36.7**		**31.7**		**31.3**	

Less than a quarter (21.9%) of remanded mentally disordered offenders in the sample were of Aboriginal origin compared to 19.8% for non-mentally disordered offenders. Note that this difference was not significant (X^2 = 0.0833; p=0.773). Thus, mentally disordered offenders were no more likely than non-mentally disordered offenders to be of Aboriginal origin.

In terms of marital status for remanded offenders, the highest percentage of cases fall into the single/never married category (Table 3), but this was higher for non-mentally disordered offenders (57.5%) compared to those with a mental illness (46.4%). The only other notable difference found was that having been widowed, separated or divorced was more common for mentally disordered offenders (26.8%) compared to non-mentally disordered offenders (17%). Note that there was no significant difference in terms of marital status (X^2 = 2.2333; p=0.327).

Table 3: Marital status of MDO vs. non-MDO

Marital status	Remanded Admissions	
	MDO	Non-MDO
Single/never married	19 (46.4%)	61 (57.5%)
Married/common law	11 (26.8%)	25 (23.6%)
Widowed/separated/divorced	11 (26.8%)	18 (17.0%)
Unknown	0 (0.0%)	2 (1.9%)
Total	**41 (100.0%)**	**106 (100.0%)**

With regards to the educational level of remanded offenders, Table 4 shows that the majority of both mentally disordered offenders (48.8%) and non-mentally disordered offenders (48.2%) had completed less than high school (i.e., grades 9, 10, or 11). For remanded offenders, having completed high school was less common for mentally disordered offenders (14.6%) compared to non-mentally disordered offenders (28.3%). However, it was more common for mentally disordered offenders to have some post-secondary education (36.6%) compared to non-mentally disordered offenders (22.7%). Being a mentally disordered offender or a non-mentally disordered offender is not significantly related to one's educational level ($X^2 = 4.4035$; $p=0.111$).

Table 4: Education of MDO vs. non-MDO

Education level	Remanded Admissions	
	MDO	Non-MDO
Less than high school	20 (48.8%)	51 (48.1%)
High school	6 (14.6%)	30 (28.3%)
Post-secondary	15 (36.6%)	24 (22.7%)
Unknown	0 (0.0%)	1 (0.9%)
Total	**41 (100%)**	**106 (100.0%)**

Table 5 compares offence categories of mentally disordered offenders compared to non-mentally disordered offenders. Note that this refers to the most serious offence for which the offender was incarcerated at the time of the initial interview. A large percentage of

mentally disordered offenders had been incarcerated for a violent offence (73.2%) compared to non-mentally disordered offenders (42.4%), whereas only 9.7% of mentally disordered offenders had been incarcerated for a property offence compared to 23.6% for non-mentally disordered offenders. In addition, a smaller percentage of mentally disordered offenders fell into the other offence category (e.g., administration of justice offences, traffic offences) (17.1%) compared to non-mentally disordered offenders (34%). Whether the offender was a mentally disordered offender or not was significantly related to offence type (X^2 = 11 2166, p=0.004).

Table 5: Offence type of MDO vs. non-MDO

	Remanded Admissions	
Offence Type	**MDO**	**Non-MDO**
Violent	30 (73.2%)	45 (42.4%)
Property	4 (9.7%)	25 (23.6%)
Other	7 (17.1%)	36 (34.0%)
Total	**41 (100.0%)**	**106 (100.0%)**

For mentally disordered offenders, the average length of stay was 152 days for females (min.=4; max.=658) and 307 days for males (min.=16; max.=716). For non-mentally disordered offenders, the average length of stay was 89.86 days for females (min.=9; max.=523) and the average length of stay for males was 190 days (min.=5; max.=719)[29]. This difference was not significant (t = 2901; p=0.998). Thus, the length of stay in custody is no different foe mentally disordered offenders compared to non-mentally disordered offenders.

[29] Note that provincial stays in custody are two years less a day which corresponds to a maximum of 729 days It was found that five male MDOs (min =16, max =1,524) and four male non-MDOs (min =10, max =2,996) were in custody longer than this maximum These have been considered for the purposes of this study to be merely data entry errors and this was the only anomaly found for these cases As such, these 11 cases were only removed from the analyses which included this variable

Table 6 below shows the distribution of offence severity rankings for mentally disordered offenders vs. non-mentally disordered offenders. Note that the lower the ranking, the higher the severity; i.e., a ranking of one is the most severe and 26 is the least severe. There were more mentally disordered offenders with high severity rankings between 1 and 5 (61.1%) compared to non-mentally disordered offenders (49.1%). There was no significant difference between mentally disordered offenders and non-mentally disordered offenders (t=0.4710; p=0.7645).

Table 6: Offence severity of MDO vs. non-MDO

	Remanded Admissions			
Offence Severity	**MDO**		**Non-MDO**	
1-5	25	61.1%	52	49.1%
6-10	10	24.3%	30	28.3%
11-15	4	9.8%	14	13.2%
16 +	2	4.8%	10	9.4%
Total	**41**	**100.0%**	**106**	**100.0%**

Overall, there were no major differences between mentally disordered offenders and non-MDOs in terms of key variables for consideration in the analyses. The only exception was offence type, as mentally disordered offenders and non-mentally disordered offenders were significantly different across categories of offence severity.

APPENDIX D

Inferential analyses were conducted to examine the relationships between the various covariates in this study for those offenders who had re-contact with the Ontario correctional system and those who did not have any re-contact during this study's follow-up period. These analyses were carried out to investigate the effect of each individual co-variate that was considered for inclusion in a multivariate analysis. This was done to reduce the variance in the multivariate analysis to increase the power of the test.

Among offenders in the sample there was no significant difference between remanded mentally disordered offenders and non-mentally disordered offenders in whether they had re-contact with the provincial correctional system or not (Table 1). Thus, mentally disordered offenders (58.54%) were no more likely than non-mentally disordered offenders (58%.49) to have re-contact with provincial corrections.

Table 1: Difference in re-contact of MDO vs. non-MDO

mentally disordered vs. non-mentally disordered	recidivist vs. non-recidivist 0	1	Total
0	44	62	106
	41.51	58.49	100.00
1	17	24	41
	41.46	58.54	100.00
Total	61	86	147
	41.50	58.50	100.00

Pearson chi2(1) = 0.0000 Pr = 0.996

The mean follow up periods of mentally disordered offenders vs. non-mentally disordered offenders were examined to ensure that there were no significant differences between the two groups in terms of their time at risk of re-contact. Time at risk is defined as the time from release until the end of the study. The t-test revealed that there were no significant differences between mentally disordered offenders and non-mentally disordered

offenders in their mean follow-up periods (649 days vs. 653 days) (Table 2). As such, the statistically significant difference in terms of re-contact between mentally disordered offenders and non-mentally disordered offenders cannot be explained simply as a result of longer (or shorter) "opportunities" to have re-contact with the provincial correctional system.

Table 2: Difference in mean follow-up period of MDO vs. non-MDO

Two-sample t test with equal variances

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
0	106	653.3679	29.46523	303.3631	594.9438	711.792
1	41	649.3415	46.74338	299.3037	554.8696	743.8134
combined	147	652.2449	24.84398	301.2173	603.1446	701.3452
diff		4.026461	55.58765		-105.8403	113.8932

diff = mean(0) - mean(1) t = 0.0724
Ho: diff = 0 degrees of freedom = 145

Ha: diff < 0 Ha: diff != 0 Ha: diff > 0
Pr(T < t) = 0.5288 Pr(|T| > |t|) = 0.9424 Pr(T > t) = 0.4712

Bivariate relationships between the various covariates in this study were also examined for those offenders who had re-contact with the Ontario correctional system and those who did not have any re-contact during this study's follow-up period to further investigate the effect of each individual co-variate that was considered for inclusion in the subsequent multivariate analyses.

For remanded offenders, there was a statistically significant difference between offenders who had re-contact and those who did not in terms of gender (p=0.009, Table 3), as females were found to be more likely than males to have re-contact with provincial corrections (76.61% vs. 51.89%).

Table 3: Gender of re-contact vs. no re-contact

sex	recidivist vs. non-recidivist 0	1	Total
F	10	31	41
	24.39	75.61	100.00
M	51	55	106
	48.11	51.89	100.00
Total	61	86	147
	41.50	58.50	100.00

Pearson chi2(1) = 6.8536 Pr = 0.009

The difference between offenders who had re-contact and those who did not was significantly related to length of stay in custody before release (p=0.00001, Table 20). In other words, offenders who had a shorter mean length of stay in custody (138 days) compared to offenders who did not (327 days) were more likely to have re-contact with the provincial correctional system.

Table 4: Length of stay of re-contact vs. no re-contact

Two-sample t test with equal variances

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
0	61	326.6885	36.57328	285.6464	253.5311	399.846
1	86	137.5581	16.96061	157.2862	103.8359	171.2804
combined	147	216.0408	19.63579	238.0713	177.2337	254.8479
diff		189.1304	36.77573		116.4446	261.8161

diff = mean(0) - mean(1) t = 5.1428
Ho: diff = 0 degrees of freedom = 145

Ha: diff < 0 Ha: diff != 0 Ha: diff > 0
Pr(T < t) = 1.0000 Pr(|T| > |t|) = 0.0000 Pr(T > t) = 0.0000

As shown in Table 5, one variable approached significance, the type of offence for which the offender was incarcerated prior to release (p=0.058). there were little differences between offenders who had re-contact and those who did not for violent offences (49.33% vs. 50.67%). Offenders who had re-contact were however more likely to have been

incarcerated for property offences (72.41% vs. 27.59%) as well as for other offence types (65.12% vs. 34.88%).

Table 5: Type of offence of re-contact vs. no re-contact

msoremrec	recidivist vs. non-recidivist 0	1	Total
Violent	38	37	75
	50.67	49.33	100.00
Property	8	21	29
	27.59	72.41	100.00
Other	15	28	43
	34.88	65.12	100.00
Total	61	86	147
	41.50	58.50	100.00

Pearson chi2(2) = 5.6838 Pr = 0.058

Using the variables which were found to be significantly related to whether an offender had re-contact with the provincial correctional system or not, logistic regression was also performed to further examine the original relationship between mental illness and re-contact. Only the significant bivariate predictors were included in the logistic regression model, as logistic regression is sensitive to small sample sizes. Therefore, by only including the significant predictor, the power of the test is not dramatically affected. Multivariate models also allow us to examine the principal relationship of interest (mental disorder and re-contact) while controlling for third variables. In other words, this type of analysis can assess the question of spuriousness. Note that the 11 offenders who had a length of stay beyond the provincial maximum were removed from the analysis, so the sample was reduced to 142.

When all the above variables were included in this analysis, only length of stay remained significantly related to re-contact while gender was no longer significant (Table

6)[30]. Specifically, for length of stay it was found that an increase in length of stay by one day decreases the chances of re-contact by 0.005% with an odds ratio of 0.995 (s.e.=0.001; p=0.0001). Length of stay was re-scaled from days to months (odds ratio=0.386), such that an increase in length of stay by 30 days would decrease the likelihood of re-contact by 61.4% ((1 – 0.386)*100).

Table 6: Logistic regression re-contact vs. no re-contact

```
Logistic regression                                     Number of obs   =        142
                                                        LR chi2(3)      =      25.39
                                                        Prob > chi2     =     0.0000
Log likelihood = -82.954953                             Pseudo R2       =     0.1327

------------------------------------------------------------------------------
  recidivist | Odds Ratio   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   mentalill |     1.7174   .7777925     1.19   0.232     .7069216    4.172264
         sex |   .5927472    .265673    -1.17   0.243     .2462383    1.426866
         los |   .9952464   .0012128    -3.91   0.000     .9928723    .9976263
------------------------------------------------------------------------------
```

[30] It should be noted that the analysis was performed including type of offence as a covariate as it was found to approach significance (p=0.058) and no notable differences were found between the two analyses.

APPENDIX E

A survival analysis was conducted to compare the rates of re-contact of mentally disordered offenders to non-mentally disordered offenders. The onset of risk begins at the time of release and failure occurs when the subjects are re-admitted to correctional services. This risk period will be referred to as survival time. The same covariates included in the logistic regression were included in the survival analysis. It was found that there was no significant difference between the rates of re-contact of mentally disordered offenders and non-mentally disordered offenders (Table 7). In other words, mentally disordered offenders and non-mentally disordered offenders come into re-contact with the provincial correctional system at the same rate. In addition, no other variables were significantly related to rates of re-contact[31].

Table1: Survival analysis rates of re-contact of MDOs vs. non-MDOs

```
                                                LR chi2(3)      =      2.12
Log likelihood  =   -335.44986                  Prob > chi2     =    0.5470
------------------------------------------------------------------------------
          _t | Haz. Ratio   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   mentalill |   1.168624   .3052894     0.60   0.551     .7003394     1.95003
         sex |   .7554011   .1833773    -1.16   0.248     .4694013    1.215657
         los |   .9997854   .0008763    -0.24   0.807     .9980694    1.001504
------------------------------------------------------------------------------
```

[31] It should be noted that the analysis was performed including type of offence as a covariate as it was found to approach significance (p=0.058) and no notable differences were found between the two analyses.