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# MAJOR MENTAL DISORDER AND HOMICIDE AMONG INCARCERATED MEN

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Cette thèse est rédigée en anglais tel qu'il est permis dans les règlements des études de cycles supérieurs (136) de l'Université du Québec à Trois-Rivières. Dans ce cas, le règlement interne mentionne l'obligation de présenter un exposé substantiel rédigé en langue française dans lequel sont présentés les objectifs, la méthodologie et les résultats obtenus; une discussion sur l'ensemble des articles publiés ou rédigés pour publication et du travail réalisé.

Ce document est rédigé sous la forme d'articles scientifiques, tel qu'il est stipulé dans les règlements des études de cycles supérieurs (Article 138) de l'Université du Québec à Trois-Rivières. Les articles ont été rédigés selon les normes de publication de revues reconnues et approuvées par le Comité d'études de cycles supérieurs en psychologie. Le nom du directeur de recherche pourrait donc apparaitre comme coauteur de l'article soumis pour publication.

Abstract

Historically, the prevalence of major mental disorder (MMD) in correctional settings has been shown to be elevated for those convicted of homicide. In fact, Hodgins (2001) utilizes the link found between homicide and MMD as one of four approaches used to establish a synthesis associating MMD with criminality and/or violence. However, recent studies of federal inmates suggest that prevalence of MMD may be decreasing among homicide offenders. It is postulated that changes to the laws governing criminal responsibility may be what has led to a decline in MMD prevalence among homicidal inmates. It has been hypothesized that the prevalence of the most seriously debilitating MMD among homicidal inmates will no longer be significantly greater than what is exhibited among those who have never been convicted of a homicide-related crime. The second hypothesis proposed is that a 'homicide' profile of recent inmates will be characterized by more criminal offences and less unstable mental illness, while a 'homicide' profile developed from a sample of federal inmates collected prior to the amendments made to the Criminal Code of Canada, will present with fewer criminal offences and characteristics closely related to unstable mental illness. **Method and Results**. The current study is based on data from two samples (1988 and 2008 to 2012) of federally incarcerated male offenders in the Province of Quebec. Results from chi-squared analyses of the 2008 to 2012 sample revealed that those convicted of homicide-related crimes did not exhibit significantly higher rates of MMD than those who did not commit or attempt to commit homicide. Multiple Correspondence Analysis revealed four distinct profiles for the sample collected in 1988, whereas five profiles emerged for

the 2008 to 2012 sample. Hypotheses proposed were partially supported. In fact, inmates from the more recent 'homicide' profile were significantly more criminalized, with both violent and non-violent offences, than those who were included in the 'homicide' profile from 1988. Additionally, while conducting non-linear analyses, psychotic disorders (6.5%) were not significantly represented in the 'homicide' profile from the 1988 sample and, interestingly, for the more current sample, psychotic disorders have completely disappeared, and the prevalence of major mood disorders have more than doubled for those in a profile significantly characterized by homicide. **Conclusion**. These results inevitably add complexity to associations previously made between MMD and criminality and/or violence. In demonstrating that legislative reform shifted populations within correctional institutions, it was concluded that psychotic disorders are no longer associated with homicidal inmates. In the past, psychotic disorders dominated linear analyses; however, present results suggest that major mood disorders are more significantly associated with a profile which includes homicide. These results argue for the existence of two distinct profiles of mentally disordered inmates; one profile which consist of inmates who are highly violent, antisocial, impulsive, and who have committed the most amount of non-violent crimes, but who are not homicidal, and another profile which consist of homicidal inmates who are more stable in terms of personality. Future research still wanting to use previous associations made between MMD and homicide should include all cases of homicide, regardless of verdict (guilty or not criminally responsible due to mental disorder).

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## Résumé substantiel en français

Les études canadiennes menées dans les milieux correctionnels rapportent systématiquement une prévalence élevée de troubles mentaux graves (TMG), et ce, de façon systématique depuis les années 90s. Ces études suggèrent que les personnes atteintes de TMG sont surreprésentées dans les établissements correctionnels canadiens. La prévalence de TMG serait encore plus élevée chez les délinquants condamnés pour homicide que chez les autres délinquants, surtout lorsqu'il est question des diagnostics du spectre de la schizophrénie. En fait, le lien établi entre l'homicide et les TMG est l'une des quatre approches qu'utilise Hodgins (2001) pour faire une synthèse des liens qui unissent les TMG aux comportements criminels ou à la violence. Suite à cette synthèse de la littérature scientifique, Hodgins conclut que le lien entre les TMG et les comportements criminels ou violents est indéniable, et que les prochaines étapes devraient être focalisées à identifier des stratégies de prévention. Or, des travaux récents auprès des services correctionnels fédéraux suggèrent que la prévalence de TMG serait en diminution chez les détenus. Considérant la réduction du taux de prévalence des TMG dans les établissements correctionnels, il est possible que le profil des détenus ayant commis des homicides puisse également avoir changé comparativement à ce qui était généralement observé dans les études antérieures.

Un des concepts fondamentaux du système de justice canadien est la nécessité de l'intention criminelle pour poursuivre un verdict de culpabilité. Celle-ci sous-tend, entre autres, qu'une personne doit être en mesure de comprendre l'ampleur et les

conséquences de son geste. Le concept de l'intention coupable est donc centrale lorsqu'il est question d'un plaidoyer de non-responsabilité criminelle pour cause de troubles mentaux. En 1992, des modifications importantes ont été apportées à l'article 16 (loi C-30) du Code criminel canadien, qui traite de la responsabilité criminelle en raison de troubles mentaux.

Avant 1992, les accusés qui étaient reconnus non coupables pour raison d'aliénation mentale étaient automatiquement placées en institution « au plaisir du lieutenant-gouverneur ». Le système en place fonctionnait avec des lignes directrices définies arbitrairement qui étaient souvent influencées par l'opinion plutôt que par des définitions concrètes. Par conséquent, les patients placés en détention ont souvent passé de plus longues périodes en détention que s'ils avaient été reconnus coupables et incarcérés, ce qui va à l'encontre des droits de la personne.

En raison de la décision rendue dans le cas de Regina v. Swain (R. v. Swain, 1991; Glancy & Bradford, 1999), la Cour Suprême du Canada a estimé que cette pratique était inconstitutionnelle. Ainsi, au début de 1992, le parlement a modifié l'article 16 du Code criminel canadien afin de refléter les droits juridiques présents dans la Charte canadienne des droits et libertés. Ce qui était autrefois connu comme non coupable par raison d'aliénation mentale est maintenant connu sous le nom de non-responsabilité criminelle pour cause de troubles mentaux (NRCTM). De plus, le rôle du

lieutenant-gouverneur a été aboli et le système des commissions d'examen provinciales a été développé. Les commissions d'examen sont chargées d'imposer la disposition la moins restrictive tout en assurant la sécurité du publique.

À la suite des amendements liés à l'application des modifications législatives apportées au Code criminel canadien en 1992, le système fonctionne maintenant de façon moins arbitraire, plus juste et plus efficace pour les détenus souffrant de TMG. Le système amélioré vise à protéger les droits des patients ; il est connu pour être plus avantageux, ce qui aurait encouragé un plus grand nombre d'accusés à faire usage du plaidoyer de NRCTM.

En effet, Roesch et ses collègues (1997) ont conclu que, dans l'année ayant suivi cet amendement, il y a eu une hausse de l'utilisation du plaidoyer et de verdict de NRCTM. De plus, une augmentation d'environ 20% des renvois a été documentée. Latimer et Lawrence (2006) ont aussi reporté une augmentation de 10% pendant les deux années suivant l'amendement ; ils ont conclu que cette augmentation n'était pas liée au nombre total d'admissions dans le système judiciaire.

Au Québec, le comité d'examen a rapport qu'en 2005, le nombre de verdicts pour non responsabilité avait plus que doublé depuis 1992, en 2012, les chiffres étaient toujours en augmentation.

On peut maintenant émettre l'hypothèse que cette modification au Code criminel canadien a contribué à la baisse de la prévalence des TMG dans les services correctionnels, spécifiquement pour les individus atteints d'un trouble psychotique. Si les TMG chez les détenus ayant commis des homicides sont effectivement en diminution, il est possible que la voie judiciaire d'un patient qui a commis un crime violent ait été altérée. De ce fait, il est vraisemblable que le profil psychosocial des personnes détenues pour homicide ait également changé par rapport à ce qui avait été observé dans le passé.

La présente étude utilise des données provenant de deux échantillons de détenus sous responsabilité fédérale qui ont été reconnus coupables de crimes liés à un homicide dans la province du Québec. Un premier échantillon inclut des données recueillies sur une période d'une année, en 1988, tandis que l'autre couvre la période de 2008 à 2012. L'hypothèse est que les différences significatives autrefois observées dans la comparaison de détenus d'homicides et de détenus de non homicides ne seraient plus apparentes. Plus précisément, ceux qui ont commis un crime lié à un homicide ne présenteraient plus une taux de TMG significativement plus élevés que les autres détenus. Deuxièmement, il est vraisemblable que les personnes reconnues coupables d'un crime lié à un homicide depuis les changements apportés au Code criminel du Canada (1992) présenteraient un profil plus proche de celui des criminels de carrière plutôt que de caractéristiques liées à un TMG. Par exemple, les personnes détenues pour

des accusations liées à un homicide au cours des dernières années auront davantage de condamnations criminelles dans leurs antécédents et présenteront davantage de caractéristiques liées à la personnalité antisociale ou à la psychopathie plutôt que des caractéristiques liées à une maladie mentale non stabilisée. Par ailleurs, les détenus reconnus coupables d'au moins un homicide, rencontrés avant la réforme du Code criminel de 1992, auront moins d'antécédents criminels et présenteront moins de caractéristiques étroitement associées à une maladie mentale non stabilisée.

La première partie de l'étude a été menée principalement pour vérifier les taux de prévalence actuels de TMG chez les prisonniers ayant commis des homicides dans les établissements correctionnels fédéraux au Québec. De plus, des comparaisons ont été faites avec les taux de prévalence chez d'autres détenus. L'objectif était d'analyser si la prévalence de TMG a diminué parmi les détenus ayant commis un homicide et pour identifier les différences parmi les groupe dans le but de tester l'hypothèse que les détenus ayant commis des homicides ne sont plus atteints de troubles mentaux lorsque l'on compare les autres détenus en établissement.

L'échantillon de la première étude étaient constituée de 563 hommes condamnés au fédéral. Cet échantillon est issu d'une large étude épidémiologique qui avait pour but d'identifier les personnes ayant des troubles mentaux dans le système correctionnel québécois (de 2008 à 2012). Les participants étaient recrutés au centre régional de réception (CRR) des Services correctionnels Canada (SCC) pour la province de Québec.

Les participants sélectionnés étaient des hommes ayant été admis pour une première sentence ou une nouvelle sentence d'emprisonnement.

Une série d'analyses descriptives et d'analyses Khi-carré ont été effectuées. Des 563 détenus avec des données complètes, 55 (9.8%) détenus ont été condamnés d'au moins un meurtre ou d'une tentative de meurtre au cours de leur vie. Les crimes liés à l'homicide incluaient un meurtre au premier ou au deuxième degré, un homicide involontaire ou une tentative de meurtre. Dix-huit des 55 détenus condamnés pour homicide avaient reçu un diagnostic de TMG (32.7%). Cependant, il n'y avait aucune différence significative dans les taux de diagnostics de TMG entre les deux groupes. De ce fait, les détenus ayant été condamnés d'un crime lié à un meurtre (32.7%), n'ont pas démontré de taux plus élevé de TMG à vie que ceux qui n'ont pas commis ou tenté de commettre un homicide (29.3%). Subséquemment, des analyses ont été menées afin d'évaluer chaque TMG individuellement et les résultants ont montré que 100% des détenus ayant commis un crime lié à un homicide et ayant un diagnostic de TMG avaient un diagnostic de dépression majeure. Cependant, il n'y avait pas de différence significative dans les taux de diagnostic de dépression majeure entre ceux qui ont commis un crime lié à un homicide et entre ceux ayant commis d'autres crimes.

Dans la deuxième partie de l'étude, nous avons considéré la possibilité que ceux qui ont commis un crime lié a un homicide et qui avaient reçu un diagnostic de TMG sont redirigé vers les services de justice en santé mentale via le verdict de NRCTM. Ainsi,

ceux qui restent dans les établissements correctionnels représenteraient un sous-groupe distinct d'individus ayant commis un homicide. Ainsi, nous avons émis l'hypothèse que les personnes qui ne correspondent pas aux critères nécessaires au plaidoyer de NRCTM et qui ont commis une infraction liée à un homicide présenteraient un profil qui est typiquement plus antisocial.

Pour tenter de vérifier cette hypothèse, nous avons procédé à une analyse des correspondances multiples liée à une analyse de regroupements hiérarchiques. Ces procédures statistiques non linéaires ont été utilisées afin de déceler les caractéristiques des détenus qui se sont révélées significativement différentes de celles du détenu moyen, dans le but de créer des profils psychosociaux pour les détenus sous responsabilité fédérale; à la fois avant et après les modifications au Code criminel canadien. L'objectif est de pouvoir comparer les profils passés et présents et de mieux identifier les profils actuels des détenus ayant commis un homicide.

Des analyses de correspondances multiples (ACM) ont été effectuées pour générer des profils de détenus fédéraux. L'ACM est une technique d'analyse de données utilisée pour détecter des structures sous-jacentes dans un ensemble de données. L'ACM est une extension de l'analyse de correspondance simple lorsque plus de deux variables sont étendues dans l'équation (Benzécri, 1973; Greenacre, 1984; Greenacre & Blasius, 2006). Une ACM est utilisée pour détecter les structures sous-jacentes dans un ensemble de données en regroupant les données sous forme de points de consigne dans un espace

euclidien. Les résultants d'une ACM ressemblent étroitement à ceux d'une analyse en composantes principaux (ACP); cependant, la ACM utilise des données catégoriques et est basée sur une approche non linéaire.

Avant de pouvoir procéder à une ACM, les résultats de chaque variable doivent être codés en mode binaire afin de créer une matrice d'indicateurs (Greenacre, 2007). Par exemple, la variable 'homicide' qui a été initialement code comme 'absente = 0; présente = 1" devient maintenant 'absence de comportement homicidaire: oui = 0; non = 1' et la présence de comportement homicidaire: oui = 1; non = 0'.

Les rangées représentent les participants et les colonnes représentent les différentes modalités de réponses (Le Roux & Rouanet, 2004). Donc, nous ne décrivons plus les données comme des variables mais comme étant des variables de profils et de variables de participants, ce qui en mode binaire aide à créer des profils pour une population identifiée. L'analyse de la table disjonctive rend possible de recueillir une représentation directe d'individus comme des points dans une zone géométrique. Les associations sont calculées en utilisant les résultats de la distance entres les catégories des variable et les réponses des participants de l'analyse du Khi-carré.

L'opposition entre les rangée et les colonnes sont maximisée pour soulever les dimensions sous-jacentes avec l'opposition la plus significative dans la base de données. Dans l'ACM, la première dimension qui est révélée est la plus importante/significative

en raison de l'inertie, suivi du deuxième et ainsi de suite. Les caractéristiques de l'inertie dans l'ACM sont semblables à la variance représente dans l'ACP. Par contre, sa fonction principale dans l'ACM est un indicateur du nombre d'axes (dimensions) à retenir pour les analyses subséquentes.

L'ACM est souvent suivie par une analyse de groupement hiérarchique afin de regrouper des individus qui présentent des caractéristiques semblables. Ceci est établi à travers la classification des coordonnées qui sont produites par la manipulation des données brutes pendant la procédure d'ACM. Le groupement prend en considération les coordonnées qui se regroupent et qui se distancient de la moyenne de l'échantillon global. La méthode d'analyse de groupement hiérarchique de Ward a été retenue pour produire les profils des détenus, étant donné qu'il produit une perte minimale d'inertie. (Greenacre, 1988). L'analyse hiérarchique produit un dendrogramme, qui représente visuellement l'analyse afin de déterminer le nombre de groupements à être retenus.

Les résultats de l'échantillon de 2008 à 2012 ont révélé que les personnes reconnues coupables d'un crime lié à un homicide ne présentent pas des taux significativement plus élevés de TMG que celles qui n'avaient pas commis ou tenté de commettre un homicide. En fait, aucun cas de schizophrénie ou autre trouble psychotique n'a été détecté chez ces détenus. Toutefois, ce n'est pas le cas pour les détenus rencontrés en 1988 qui avaient été reconnus coupables d'un crime lié à un homicide. Ces derniers présentent des taux de TMG significativement plus élevés que ceux qui n'ont pas commis ou tenté de

commettre un homicide. Il en va de même pour l'analyse spécifique aux troubles schizophréniques : alors que, en 1988, les détenus qui ont commis des crimes liés à un homicide manifestent une prévalence plus élevée de trouble schizophrénique que ceux qui n'ont jamais commis de crime lié à un homicide.

Ces observations sont analysées à nouveau à l'aide de l'ACM. Quatre profils distincts ont été développés pour l'échantillon de 1988 (le profil délinquant non violent; le profil psychologiquement instable et modérément violent; le profil non violent bien ajusté; et le profil homicide avec personnalité stable et trouble de l'humeur), alors que cinq profils ont été révélés dans l'échantillon recueilli entre 2008 et 2012 (le profil modérément criminalisé qui s'est développé de façon tardive; le profil criminel psychologiquement instable et violent; le profil non violent bien ajusté; le profil très violent et antisocial, et le profil homicide avec personnalité stable et trouble de l'humeur). Les hypothèses de départ sont partiellement validées, montrant que le profil « homicide » de l'échantillon récemment recruté comporte significativement plus de crimes violents et non violents que le profil de l'échantillon « homicide » de 1988, plutôt caractérisé par un crime violent unique. Cependant, ceux du dernier échantillon inclus dans le profil « homicide » ayant une personnalité stable, avec troubles de l'humeur, ne montrent pas les caractéristiques de la personnalité antisociale et de la délinquance juvénile par opposition à ce qui était avancé. De plus, les données antérieures suggèrent que les détenus pour crimes liés à un homicide étaient plutôt concentrés dans deux profils types : le profil « criminel psychologiquement instable et violent » et, bien sûr, le

profil de « homicide avec personnalité stable et trouble de l'humeur ». Les données les plus récentes montrent plutôt une répartition plus large des détenus pour crimes reliés à un homicide, et ce, dans trois profils types.

L'étude établit les taux actuels de TMG chez les détenus reconnus coupables de crimes liés à un homicide. Cette étude est la première depuis la réforme au Code Criminel du Canada de 1992 à examiner ces taux et à créer des profils psychosociaux. Cela ajoute inévitablement du relief à la complexité des associations précédemment rapportées entre les TMG et les comportements criminels, voire violents. En outre, la présente étude permet de saisir les possibilités offertes par des analyses statistiques non linéaires, permettant de saisir davantage la complexité de l'homicide, permettant de nuancer davantage les observations. Ainsi, lors d'analyses linéaires, les troubles psychotiques sont associés de manière significative à l'homicide en 1988, alors que les analyses non-linéaires montrent qu'un profil homicide est à la fois caractérisé par des troubles majeurs de l'humeur et la présence non statistiquement significative de troubles psychotiques. Finalement, il apparait que les prochaines études devront tenir compte de tous les cas d'homicide sans tenir compte de leur statut (coupable et NRCTM), pour établir un lien entre les troubles mentaux graves et le comportement violent.

# Introduction

According to the World Health Organization (WHO), mental illness is a universal problem impacting over 450 million individuals worldwide (WHO, 2001a, 2013), which will continue to grow in years to come, accounting for 13% of the global burden of disease in 2004 and will rise to about 15% by 2020 (WHO, 2001b; 2013). If this projection is accurate, there would be an increase of 11% since 1990. In 2013 the WHO made mental health a priority and developed the Mental Health Action Plan, 2013-2020 (2013). In Canada, in 2002, 2.6 million individuals (10%) reported symptoms of mental health disorders (Statistics Canada, 2003). Health Canada (2002) estimates that one in five Canadians will have experienced a mental illness in their lifetime, for which most do not receive treatment. In fact, in 2012 the Mental Health Commission of Canada (2012) released Canada's first ever mental health strategy, addressing key issues affecting the psychological well-being of Canadians.

Although the majority of individuals suffering from psychological disorders do not commit crimes or behave in a violent manner (Andrews & Bonta, 1993; Bonta, Andrews, & Motiuk, 1993), the Canadian Institute for Health Information (2008) finds that individuals suffering with mental illnesses such as psychosis, depression, anxiety, and substance related disorders are highly over-reported in the criminal justice system and correctional facilities. Over the years, these reports have created much concern surrounding those who are mentally ill and criminalized (Public Health Agency of

Canada, 2006). Reference to disorders such as schizophrenia, schizophreniphorm, delusional disorder, bipolar disorder, and major depression are what are usually considered when discussing major mental disorders (MMD). Historically, Canadian studies reporting the prevalence of MMD in corrections date back to the early 90's, where most studies suggest that the prevalence of MMD in federal correctional institutions far exceed that of the general population (Correctional Service of Canada, 1990; Hodgins & Côté, 1990; Motiuk & Porporino, 1991). This avenue of research has continued to hold strong (Beaudette, & Stewart, 2016; Brink, Doherty, & Boar, 2001). This association has been shown to be even more relevant for homicide offenders in correctional settings and is especially the case for those who suffer with schizophrenia (Baillargeon, Binswanger, Penn, Williams, & Murray 2009; Côté & Hodgins, 1992; Erb, Hodgins, Freese, Müller-Isberner, & Jöckel, 2001). However, recent work suggests that the prevalence rate for schizophrenia among federal inmates may be reducing (Côte et al., paper in preparation). With this reduction in prevalence rate, it may be possible that the profile of current homicidal inmates has also altered from what was typically observed in past research.

In chapter 1, analyses are conducted to obtain current prevalence rates of MMD for homicide offenders in federal correctional institutions in the Province of Quebec. Then, comparisons are made with prevalence rates among other inmates. The objective is to analyze if in fact MMD prevalence has diminished among homicidal offenders and to identify group differences, with the aim of testing the hypothesis that homicidal inmates

are no longer more mentally disordered when compared to other offenders in corrections.

After presenting results regarding current prevalence rates of MMD among homicidal inmates, we discuss the possibility that those who committed homicide-related crimes and who are diagnosed with the most severe types of MMD are being redirected towards forensic mental health services through verdicts of not criminally responsible on account of mental disorder (NCRMD). Therefore, those who remain in corrections represent a subgroup of homicidal individuals. These individuals who do not correspond to criteria for a NCRMD defence, and who have committed a homicide-related offence may present with a profile which is characteristically more antisocial. In an attempt to confirm this hypothesis we discuss results from multiple correspondence analyses and hierarchical clustering analyses in Chapter two. These non-liner statistical procedures were utilized in order to detect inmate characteristics that were found to be significantly different from the average criminal with the objective of creating psychosocial profiles for federal inmates; both pre- and post- amendments to the Criminal Code of Canada. The aim is to be able to compare past and present profiles, and to better identify profiles for current homicidal inmates.

# Theoretical background

In a review, Hodgins (2001; Côté & Hodgins, 2003) describes major studies which lead to an overall general conclusion that a significant link exists between major mental disorders (MMD) and criminality and/or violence. Hodgins describes four streams of investigations leading up to the authors' strongly held conclusion. She concludes that we need to stop debating if there is an actual link between MMD and criminality and/or violence, but rather start developing prevention strategies. The four streams of investigation Hodgins describes stem from the results of numerous studies. The first type of investigation discusses results from studies of criminality among patients living in the community (i.e. Mullen, Burgess, Wallace, Palmer, & Ruschena, 2000; Volavka et al., 1997; Wessely, Castle, Douglas, & Taylor, 1994). For the second type, the author discusses six studies of birth cohorts in which criminality of persons who develop MMD are compared to that of persons who did not develop MMD (Hodgins, 1992; Hodgins, Mednick, Brennan, Schulsinger, & Engberg, 1996; Stueve & Link, 1998; Tiihonen, Isohanni, Räsänen, Koiranen, & Moring, 1997; Wallace et al., 1998). The author then moves on to discuss the third pathway in which studies of mental disorder among incarcerated offenders are reported. She explains that North American studies have found higher than normal prevalence rates of MMD among both male and female offenders (Hodgins & Côté, 1995; Teplin, Abram, & McClelland, 1996). However, this phenomenon is not supported in the UK (Cooke, 1994; Gunn, Maden & Swinton, 1991, 1992). The fourth and last stream of investigation is the study of mental disorders among

samples of homicide offenders, in which Hodgins discusses research findings from five groups of researchers (Côté & Hodgins, 1992; Erb et al., 2001; Eronen, Tiihonen, & Hakola, 1996; Gottlieb, Gabrielsen, & Kramp, 1987; Lindqvist, 1986).

Of the five studies Hodgins reviews, the work of Côté and Hodgins (1992) is particularly interesting. They reported that the prevalence of MMD in male offenders convicted of homicide (35%) in the Province of Quebec was higher than that of those who had committed other crimes (21%). At a closer look, there was a tendency for the homicidal group to have a higher prevalence of schizophrenia. The diagnosis of the MMD was most often present before they committed the homicide, and group differences (those convicted for homicide vs. those convicted of other crimes) were most apparent when there was a comorbid diagnosis of a substance abuse disorder or an antisocial personality disorder. In a longitudinal study conducted in Copenhagen it was reported that 20% of men found guilty of homicide were suffering from a MMD and that 41% of those men were also substance abusers (Gottlieb et al., 1987). In Sweden, a group of researchers found that more than half of the individuals found guilty of homicide suffered from a MMD, with 38% of them also substance abusers (Lindqvist, 1986). In line with these findings, a more recent international systematic review (Richard-Devantoy, Olie, & Gourevitch, 2009) reporting the rates of mental disorder in people convicted of homicide found that those with MMD were at an increased risk for committing homicide (two-fold for males and six-fold for females). The authors found that a diagnosis of schizophrenia increased the risk six to 10-fold in males and eight

to 10-fold in females. In another study by Swinson and Shaw (2007), it was found that 9% of those who had committed a homicide had been in contact with mental health services during the 12 months period prior to the offence and that schizophrenia was the most common diagnosis (5%) among these offenders.

Relevant to the present study are the two latter streams of investigation presented in the Hodgins' review (2001; Côté & Hodgins, 2003). Most, Canadian studies reporting the prevalence of MMD in corrections date back to the early 90's, where it is suggested that the prevalence of MMD in federal correctional institutions far exceed that of the general population (Correctional Service of Canada, 1990; Hodgins & Côté, 1990; Motiuk & Porporino, 1991).

Bland and colleagues (1990, 1998) found that prisoners were twice as likely as the general population to have a lifetime psychiatric diagnosis and three times as likely to have a current psychiatric diagnosis. They further state that 76.7% of the prison population had at least one type of mental disorder in the last six months. In an international systematic review of prisoners, a prevalence of 4% for psychotic disorders was found, whereas about .3% to 1% is what is normally reported for general populations worldwide (Ayuso-Mateos, 2000; Fazel & Danesh, 2002; Fazel & Seewald, 2012). Furthermore, Bland, Newman, Dyck and Orn (1990) had reported a rate of 22.8% for affective disorders in Canadian correctional settings, which is three times what is normally found in the general population. Daigle and Côté (2002) found that 17.7% of

provincially incarcerated men in Quebec present with a serious risk of suicide or a MMD. In 2010, the Correctional Service of Canada (CSC) released a statement indicating an 85% increase of offenders with mental health disorders at intake since 1997. In British-Columbia federal corrections, Brink and colleagues (2001) found a rate of 25.8% for MMD and a rate of 8.4% for psychotic disorders while they state that a rate of .5% is what is normally found in the general population. More recently, Beaudette and Stewart (2016) are still finding higher than normal prevalence rates for some MMD among Canadian correctional populations (26.8% for lifetime, 13.2% for current). In another recent CSC study, Beaudette, Power, and Stewart (2015) report that 30.5% of inmates in the Province of Quebec met the lifetime criteria for a MMD (identified without exclusion criteria; bipolar I disorder, major depression, and psychotic disorders), which is higher than the national prevalence rate (25.5%) for newly admitted offenders. For their part, Côté and colleagues (paper in preparation) found that the lifetime prevalence of MMD for men serving a new sentence in a Quebec federal correctional institution is 29.4%, while the prevalence rate of a current MMD diagnosis is 5.5%. At a first glance rates of MMD do not seem significantly different from what was found in the past for the same population (i.e. 22.7%; Hodgins & Côté, 1990). However, one can postulate that after almost 25 years of amendments to laws and regulations, the composition of specific characteristics of MMD among homicidal inmates may have changed.

Of particular interest are the amendments made in 1992. Prior to 1992, defendants who were found Not Guilty by Reason of Insanity (NGRI) were automatically confined to an institution for as long as the Lieutenant Governor deemed necessary. This system functioned with arbitrarily-defined guidelines, which were often guided by opinion rather than concrete definitions, and therefore, patients held in custody often spent longer periods in confinement than what was actually necessary, and therefore against human rights.

A fundamental concept in the Canadian judicial system is that to be found guilty of a crime, one has to possess the capacity to have understood that the act or omission they committed was wrong (Criminal Code of Canada, 1992; Latimer & Lawrence, 2006). The idea rests on the basic principle, that has consistently stated in one form or another, that in order to be convicted of a crime, the courts must prove not only that a wrongful act was committed but that the accused was of "guilty mind" (Department of Justice Canada, 1991). However, this leaves the courts and government facing certain challenges of public safety.

In Canada, the responsibility for the care and custody of an individual 18 years of age and older is determined at the time of sentencing. Those who are sentenced to less than two years, and those who are on remand awaiting trial, are referred to custody or community supervision under the provincial or territorial authorities, whereas individuals sentenced to two years or more fall under the mandate of the federally-

managed CSC. Alternatively, if the individual is deemed NCRMD, he is referred and managed by the Canadian Review Boards for Mental Disorder Systems. Historically, the judicial system for offenders suffering with mental illness has not always been so clear cut or just.

## History of Canadian Criminal Code amendments regarding mental illness

Based on the ruling made in the M'Naghten case in Britain in 1843 (8 E.R. 718, H.L.), the common law defence of "insanity" was introduced into the Canadian Criminal Code of 1892 (Criminal Code, 1892; Tollefson & Starkman, 1993). This incorporation did not allow for an individual who was considered of "natural imbecility", or of "diseased mind", to be convicted of a crime. This was due to the idea that he or she was "incapable of appreciating the nature and quality of the act or omission" (Criminal Code, 1892). However, this did not mean that the individual was free. A not guilty by reason of insanity (NGRI) verdict resulted in detention in strict custody at a forensic hospital. Being detained in strict custody meant that the Lieutenant Governor of the province held the power to keep the individual in custody for as long as he deemed necessary.

In 1975 the Law Reform Commission of Canada began initiating discussions on the need for reform of the criminal justice system for dealing with accused who were mentally disordered. They argued that "unclear language" and "improper attitudes" without practical solutions to social problems were dangerous. They proposed that restrictions of freedom should only be imposed when justified. Evidently, they proposed

an end to the Lieutenant Governor ruling system and favoured a system which utilized a hearing process for decisions regarding treatment of individuals found NGRI (Law Reform Commission of Canada, 1976).

Later, the suitability of the Lieutenant Governor's Warrant system came into question once again when the results of the Department of Justice's Mental Disorder Project (Department of Justice Canada, 1983) were published. Essentially, numerous shortcomings in the Criminal Code were revealed. These were mainly a lack of clarity, guidance and direction, as well as the fact that there was a misalignment between the criminal code and the Canadian Charter of Rights and Freedoms. Particularly, in the case of an indefinite confinement of an individual found unfit to stand trial (UST). Individuals found UST were held until deemed fit to aid in the process of their trial. However, if the individual did not respond to treatment and was never able to stand trial they were held indefinitely. This is a violation of human rights due to the fact that they were never actually found guilty in court.

By 1986, a draft proposal for amendments to the Canadian Criminal Code was put forward. A number of recommendations were proposed modernizing language and definitions. These discussions and debates were taking place at the same time as the District Court of Ontario was rendering a verdict on the Owen Swain assault and aggravated assault case (Regina v. Swain, 1986), which put pressure on the government to create amendments to the Criminal Code. This eventually led to improvement of

procedures and processes while protecting human rights. Unable to achieve unanimous agreement to changes put forward in the final proposal, it was only in 1991 that a bill was officially presented. However, due to a new ruling in *Regina v. Swain* (R. v. Swain, 1991; Glancy & Bradford, 1999), the Supreme Court of Canada held that the practice of automatic confinement for undetermined periods was unconstitutional and violated section nine of the Canadian Charter of Rights and Freedoms[1]. By early 1992, Parliament amended Section 16 of the Canadian Criminal Code in order to reflect legal rights presented in the Canadian Charter of Rights and Freedoms. What was once known as not guilty by reason of insanity (NGRI) has now been renamed not criminally responsible on account of mental disorder (NCRMD).

## Bill C-30

The amendments to Part XX.I of the Canadian Criminal Code were introduced through Bill C-30 in 1991, and the following are some of the major changes involving accused who are mentally disordered. First, along with the newly revised terminology (the term NCRMD replaced NGRI) to describe incapacity, updates to definition of the term were also granted. What was once described as "natural imbecility" or "disease of the mind" have now been replaced with "mental disorder". In addition to the new NCRMD definition, Bill C-30 provides new criteria for determining if an individual is unfit to stand trial (UST).

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[1] Section 9 of the Canadian Charter of Rights and Freedoms, found under the "Legal Rights" heading, guarantees the right against arbitrary detainment and imprisonment.

The advent of Bill C-30 also abolished the role of the Lieutenant Governor and created the Provincial Review Board Systems. These Review Boards were tasked with imposing the least restrictive or onerous disposition while at the same time ensuring public safety. The three dispositions available to the Review Boards are absolute discharge, conditional discharge or an order to be held for treatment at a specialized psychiatric hospital (Criminal Code of Canada, R.S.C. 1992). Therefore, once the accused is found NCRMD, they are subject to a hearing to determine proper disposition rather than automatically being held under strict custody. Under Section 672.81 of the Criminal Code, when an accused is granted one of the two later dispositions, the Review Boards must hold annual hearings to reassess and when appropriate, change the status of the accused. Annual Review Board hearings take place until a disposition of absolute discharge is granted to the individual. Every province and territory is responsible for governing their own Review Boards. All Canadian Review Boards for Mental Disorder are specialized tribunals chaired by a judge, and consist of at least three other members. In the Province of Quebec, mandatory presence of at least one lawyer and one psychiatrist, as well as a member of the Social Affairs division of the Tribunal Administratif du Québec (TAQ, 2008), are required at every hearing.

Finally, for cases involving individuals deemed UST, mandatory treatment could be enforced to render fit, followed by a reassessment to determine if the accused has been treated sufficiently to participate in their trial.

## Regina v. Winko

Much positive change was created with Bill C-30, with its clearer and less stigmatizing vocabulary and definitions, while respecting human rights and freedoms. However, the amendment was not without flaws and was shown to still require further adjustments. Joseph Winko was arrested in 1983 for attacking pedestrians with a knife. Due to his mental illness (Auditory hallucinations-Schizophrenia) at the time, he was found NGRI for the aggravated assault and weapon-related charges. After being held in custody for treatment for his condition, he was then placed in a community setting with restrictions. At a Review Board hearing in 1995, Joseph Winko was rendered a conditional discharge (Sinha, 2009), despite a request for an absolute discharge. The disposition of conditional discharge was given because it was the opinion of the Review Board that Winko "may" possibly become a "significant" threat to the community under certain circumstances. Winko took his case to the Supreme Court of Canada declaring that this decision went against the Canadian Charter of Rights and Freedoms. Then, in 1999, the courts ruled that in absence of concrete evidence demonstrating that Winko could be an actual "significant" threat, Mr. Winko must be granted an absolute discharge.

The ruling in the Winko case once again set a precedent and created considerable change within the system (Schneider, Glancy, Bradford, & Seibenmorgen, 2000), in that prior to *Winko v. B.C.* (British Columbia Forensic Institute, 1999), uncertainty of threat resulted in continued follow-up within the system. Whereas after *Winko v. B.C.*, the

inability to demonstrate that the patient is an actual significant threat results in an absolute discharge (Balachandra, Swaminath, & Litman, 2004). Moreover, conditions imposed post *Winko v. B.C.* were amended as well. First, being held in custody is rarely applied to a conditional discharge, and secondly, conditions are now less onerous and imposed less often than before (Latimer & Lawrence, 2006). For example, conditions such as curfew, weakly reporting and mandatory treatments were imposed on average 50% less often than prior to changes which were influenced by the Winko case (Latimer & Lawrence, 2006).

Roesch and colleagues (1997) found that in the year following the 1992 amendment, there was an increase of use and success of the NCRMD defence. Furthermore, an increase of about 20% in remands was documented. Latimer and Lawrence (2006) also reported a 102% increase from 1992 to 2004. The authors concluded that the increase was not due to total number of absolute admissions in the judicial system. In the Province of Quebec, the Review Board reported that in 2005 the number of NCRMD verdicts had more than doubled since 1992 (N = 407 vs. N = 177, respectively), and again later in 2012 the number increased to 540 new verdicts (Carmelle Beaulieu, as mentioned in Crocker et al., 2015). Additionally, in light of the decision rendered in the Winko case, some have speculated that absolute discharges have been on the rise (Balachandra et al., 2004, Simpson et al., 2014). Latimer and Lawrence (2006) reported that after the Winko case, absolute discharges increased from 10% to 15%, while conditional discharges increased from 33% to 37%. Conversely, there was a decrease

(56% to 47%) in detention orders imposed by the Review Boards of Canada. The study also reported fewer conditions imposed on dispositions in general. But of particular interest, they found that accused who were granted a conditional discharged were never held in detention. Published annual report figures for the TAQ shows that the amount of accused entering the Review Board system in Quebec have almost doubled since 1999 (1999, N = 1307 vs. 2017, N = 2400; Rapport d'activité 1998-2000; TAQ Rapport annuel de gestion 2016-2017). One can speculate that given the decrease in threshold for mandating continued follow-up in the system, a possible higher volume of NCRMD defences for serious crimes may have developed, as well as a higher volume of absolute discharge requests for seriously violent offences, such as homicide and attempted homicide, in hopes for a fast process and absolute discharge.

In summary, the first big change to the Canadian Criminal Code in 1992 made it so that the system worked in a fair and more efficient manner, which aimed to protect the rights of patients. Some hypothesized the amendments encouraged an influx of accused requesting and obtaining the NCRMD defence (Crocker et al., 2015; Latimer & Lawrence, 2006; Roesch et al., 1997). Again, after Joseph Winko's Supreme Court of Canada case in 1999, it was suspected that even greater amounts of accused were utilizing the defence in order to eventually file for an absolute discharge. Therefore, we may postulate that the rates of individuals with MMD who are incarcerated for more serious crimes may have diminished, since it is now more advantageous to go through the Review Boards Systems for more serious crimes. We may also postulate that the

characteristics of those who have committed a homicide-related crime and who still end up in the correctional system have changed from what was found in the past.

Given that individuals diagnosed with psychotic disorders are the most likely to be found NCRMD (56.3%, $n = 3828$; Latimer & Lawrence, 2006), there is a possibility that after changes to laws governing non-responsibility, there may be a significantly lower prevalence of psychotic disorders in federal correctional institutions. In fact, Hodgins and Côté (1990) have previously reported a lifetime prevalence rate for psychotic disorders to be 7.5% in corrections, whereas Côté and colleagues (paper in preparation) now find that the lifetime prevalence rate has dropped to 2.3% for the same population.

Currently, there is a lack of research examining the prevalence of MMD among inmates who have had at least one conviction for a homicide-related crime. Most research report on a broad spectrum of crimes rather than specifically on homicide-related crimes (all types of homicide, including attempted homicide), which are the most serious of all crimes, with major and long lasting repercussions (WHO, 2015). Often, researchers will dichotomize crime into violent and non-violent (i.e. Brennan, Mednick, & Hodgins, 2000). Some studies analyze data on murder and manslaughter, but often overlook those who intended on committing homicide but were unable to complete the act. When studying mental health, some researchers do not focus on those who have MMD, but rather on wide diagnostic criteria for mental illness. Therefore, these studies may have a limited ability to report true prevalence rates of individuals who have

suffered or who are suffering with a MMD and who are serving a sentence for a homicide-related crime.

The current study is based on two samples of federally incarcerated offenders who have been convicted of a homicide or an attempted homicide in the Province of Quebec at two different time periods (1988 and 2008 to 2012). Given that use of the NCRMD defence for violent offences may be on the rise in Quebec, one can postulate that prevalence rates for MMD among those federally incarcerated for homicidal crimes would have decreased. Therefore, the current study will first investigate the lifetime prevalence of MMD among male homicidal inmates, in order to investigate change in prevalence over time. Then, comparisons will be made with matched inmates who have committed other crimes (with no history of homicide-related crime). Lastly, the study will attempt to generate profiles of homicidal inmates before and after the amendments made (1988 and 2008 to 2012) to the Criminal Code of Canada, in order to investigate changes in psychosocial profiles over time, and to present a profile for homicidal inmate which is current and therefore more up to date.

## Homicide in Canada

According to the Canadian Criminal Code (last amendment on July 23, 2015), a person commits homicide when "*directly or indirectly, by any means, he causes the death of a human being*". There are two types of homicide; culpable and non-culpable. Non-culpable is homicide that is not a criminal act in the sense that it occurs completely

by accident, or in self-defence. Whereas, culpable homicide is murder, manslaughter or infanticide (Criminal Code, R.S.C., 1985. c.C-46). Murder is a culpable homicide that the individual (i) *"means to cause the death of the victims, or* (ii) *means to cause the victim bodily harm that he knows is likely to cause his death, and is reckless whether death ensues or not"*. A murder charge may be reduced to manslaughter if the person who committed the act did so in the *"heat of passion"* and was caused by *"sudden provocation"*. Lastly, a female may be charged with infanticide when she willfully acts or chooses not to act, causing the death of her newly-born child.

In 2014, police reported 369,359 violent Criminal Code violations in Canada. Violent crimes account for about 20% of all criminal offences (Miladinovic & Mulligan, 2015; CANSIM table 252-0051). Rates of homicide are thought to represent about .1% of all violent crime (Perreault, 2013). Also in 2014, Canadian police services reported 516 homicides, which were four more cases than in the previous year, but still 18% below average from the previous decade, which translates into a national homicide rate of about 1.45 in 100,000 population. For the population of Quebec the homicide rate is .86 per 100,000. Statistics Canada reports that the national homicide rate is at its lowest point since 1966. Moreover, there were 617 attempted murders, which also has as well been on a stable decline for the last five years (CANSIM table 253-0001).

Almost three quarters of all cases under mandate of the Review Board System in Canada are for violent offences (violent offences against persons, including verbal

threats and harassments). Research conducted by the Department of Justice Canada compared cases involving NCRMD/UST rulings and those who have been found guilty in adult court (fiscal year of 2003/2004). They found that compared to those who were convicted in adult courts, individuals who have been found NCRMD or deemed UST are more likely to have been charged with a seriously violent offence, such as homicide or major assault and less likely to be charged with a non-violent offence such as theft (Latimer & Lawrence, 2006).

While we acknowledge the low rates of homicide in Canada, we should also acknowledge that homicide is the most serious of all crimes, with repercussions affecting many aspects of human life (WHO, 2015), while carrying the most severe criminal sanctions.

Historically, we have seen that the prevalence of MMD has been elevated among inmates who committed homicide. This is especially true for the diagnosis of schizophrenia (Côté & Hodgins, 1992; Crocker, Seto, Nicholls, & Côté, 2013; Erb et al., 2001; Eronen et al., 1996; Gottlieb et al., 1987; Shaw et al., 2006). In fact, some researchers have used this strong association to argue that those suffering with MMD are at elevated risk of criminality and/or violence. However, recent work has suggested rates for schizophrenia are diminishing in federal correctional institutions (Côté et al., in preparation). Considering the amendments to the Criminal Code, it is hypothesized that those suffering from the most severe cases of MMD are being diverted towards the

Review Board Systems for Mental Disorder. Therefore, we hypothesize that lower prevalence rates for MMD will be exhibited among homicidal inmates than what was observed in past research. Results indicating that no significance difference for the prevalence of MMD were found when comparing homicidal inmates with their non-homicidal cohorts will be presented and discussed in Chapter one.

After presenting data supporting the decreasing prevalence rates of MMD among homicidal inmates, we discuss the possibility that in redirecting homicidal offenders with the most severe types of MMD towards the Review Boards for Mental Disorder, those who remain in corrections represent a subset of homicidal individuals. These individuals who do not correspond to criteria for a NCRMD defence, yet still end up committing a homicide, may present with a profile which is more criminalized and characteristically more antisocial. In other words, inmates who have committed a homicide after the amendments to the Criminal Code are more likely to resemble the typical criminal, rather than one who is mentally instable. To confirm this hypothesis, we present results from a multiple correspondence analysis in Chapter two. A non-linear procedure was utilized in order to detect inmate profiles that are significantly different from the average inmate.

# Chapter 1
# Prevalence of major mental disorder among men incarcerated for homicide-related crimes

# Prevalence of major mental disorder among men incarcerated for homicide-related crimes

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Reports have shown that one in five Canadians will have experienced a mental illness in their lifetime (Health Canada, 2002). Although the majority of individuals with mental illness do not come in contact with the criminal justice system or behave violently (Andrews & Bonta, 1993; Bonta, Andrews, & Motiuk, 1993), the Canadian Institute for Health Information (2008) reports that individuals suffering with mental illnesses such as psychosis, depression, anxiety and substance related disorders are overrepresented in Canadian correctional facilities.

Historically, Canadian studies reporting the prevalence of major mental disorder (MMD) in corrections, date back to the early 90's.These studies suggest that the prevalence of MMD in federal correctional institutions far exceed that of the general population (Correctional Service of Canada, 1990; Hodgins & Côté, 1990; Motiuk & Porporino, 1991).

Bland and colleagues (Bland, Newman, Thompson, & Dyck, 1998) found that prisoners were twice as likely as the general population to have a lifetime psychiatric diagnosis (91.7% vs. 43.7%) and three times as likely to have a current psychiatric diagnosis (76.7% vs. 23.2%). They further states that 2.2% of the prison population had suffered with schizophrenia in the last six months. In an international systematic review of prisoners, a prevalence of 4% for psychotic disorders was found, whereas about .3% to 1% is what is normally reported for general populations worldwide (Ayuso-Mateos, 2000; Fazel & Danesh, 2002; Fazel & Seewald, 2012). More than 25 years ago, Bland

and colleagues (Bland, Newman, Dyck, & Orn, 1990) reported a rate of 22.8% for affective disorders in corrections, which is three times what is normally found in the general population. Powell, Holt, and Fondacaro (1997) published results from a stratified random sample (N = 213) study conducted in rural American jails and prison, indicating a prevalence of 2.8% for schizophrenia, 5.2% for bipolar disorder, and 10.3% for major depression. Daigle and Côté (2002) found that 17.7% of provincially incarcerated men in Quebec present with a serious risk of suicide or a MMD. In 2010, the Correctional Service of Canada (CSC) released a statement indicating an 85% increase of offenders with mental health disorders at intake since 1997. In British-Columbia federal corrections, Brink, Doherty and Boer (2001) found a rate of 25.8% for MMD and a rate of 8.4% for psychotic disorders, while they state that a rate of .5% is what is normally found in the general population.

More recently, Beaudette and Stewart (2016) have also found higher than normal prevalence rates for some MMD among Canadian correctional populations (26.8% for lifetime, 13.2% for current). In another recent publication by CSC, Beaudette, Power and Stewart (2015) reported that 30.5% of inmates in the Province of Quebec met the lifetime criteria for a MMD (identified without exclusion criteria; bipolar I disorder, major depression, & psychotic disorders). Currently, Côté and colleagues (paper in preparation) found that the lifetime prevalence of MMD for men serving a new sentence in a Quebec federal correctional institution is 29.4%, while the prevalence rate of a current MMD diagnosis is 5.5%. Furthermore, the CSC reports that almost 13% of

federally sentenced men in Canada are identified as having a very serious mental health disorder while in custody (Beaudette et al., 2015).

While all of the previously mentioned studies describe similar issues of elevated prevalence rates of MMD in correctional settings, they do not provide prevalence rates specifically for homicidal individuals. Recently, the CSC has stated that at any given time, about one in five offenders in custody is serving a sentence for homicide (CSC, 2017).

Researchers have found that the prevalence of MMD is even higher among homicide offenders when compared to offenders who have never committed a homicide (Baillargeon, Binswanger, Penn, Williams, & Murray, 2009; Côté & Hodgins, 1992; Erb, Hodgins, Freese, Müller-Isberner, & Jöckel, 2001; Eronen, Tiihonen, & Hakola, 1996; Gottlieb, Gabrielsen, & Kramp, 1987; Lindqvist, 1986; Richard-Devantoy, Olie, & Gourevitch, 2009). A study released in 1992 by Côté and Hodgins reported that the prevalence of MMD in male offenders convicted of homicide (35%) was higher than that for those who had committed other crimes (21%) in the Province of Quebec. There was a tendency for the homicidal group to have a higher prevalence of schizophrenia spectrum disorders (not including schizoid and schizotypal personality disorder). The diagnosis of the MMD was most often present before they committed homicide, and group differences (those convicted for homicide vs. those convicted for other crimes) were most apparent when there was a comorbid diagnosis of a substance abuse disorder

or an antisocial personality disorder. In a longitudinal study conducted in Copenhagen, it was reported that 20% of men found guilty of homicide were suffering with a MMD, and that 41% of those men were also substance abusers (Gottlieb et al., 1987). In Sweden, researchers found that more than half of the individuals found guilty of homicide suffered from a MMD, with 38% of them also having a diagnosis of substance use disorder (Lindqvist, 1986).

Hodgins (2001; Côté & Hodgins, 2003) conducted a review of the literature describing four types of investigations which lead to the general conclusion that a significant association exists between MMD and criminality and/or violence. For one of the four investigative pathways, Hodgins uses the results from numerous studies of MMD among samples of homicide offenders (Côté & Hodgins, 1992; Erb et al., 2001; Eronen et al., 1996; Gottlieb et al., 1987; Lindqvist, 1986) to strengthen the findings that there is indeed a link between MMD and criminal/violent behaviour. These results are in line with other more recent studies such as Swinson and Shaw (2007) who found that 9% of those who had committed a homicide had been in contact with mental health services during the 12 months prior to committing an offence and that schizophrenia was the most common diagnosis (5%). The three other pathways used by Hodgins to strengthen the author's conclusion were 1) studies of criminality among patients living in the community, 2) studies of mental disorder among incarcerated offenders, and 3) investigations of birth cohorts comparing criminality of persons who developed

MMD with persons who did not (for an in-depth review of the four approaches see Côté & Hodgins, 2003; Hodgins, 2001).

In line with the studies presented in the Hodgins review (2001), a more recent international systematic review (Richard-Devantoy et al., 2009) reporting the rates of mental disorder in people convicted of homicide found that those with MMD were at an increased risk for committing homicide (two-fold for males and six-fold for females). The authors found that the diagnosis of schizophrenia created an even greater risk of committing a homicide (Six to 10-fold in males and eight to 10-fold in females).

The link between homicidal men and MMD has been shown. However, one can postulate that amendments to the way the Canadian judicial system functions may have influenced the way lawyers and accused plea. Therefore, possibly altering prevalence rates of MMD among homicidal men in correctional settings.

A fundamental concept in the Canadian judicial system is that to be found guilty of a crime, one has to possess the capacity to understand that the act or omission they committed was wrong (Criminal Code of Canada, R.S.C., 1985; Latimer & Lawrence, 2006). However, prior to 1992, defendants who were found "Not Guilty by Reason of Insanity" were automatically confined to an institution "to the pleasure of the Lieutenant Governor". This system functioned with arbitrarily defined guidelines which were often influenced by opinion rather than concrete definitions, and therefore, patients held in

custody often spent longer periods in confinement than had they been found guilty and gone to prison, and therefore against human rights. Due to the ruling in *Regina v. Swain* (R. v. Swain, 1991; Glancy & Bradford, 1999), the Supreme Court of Canada held that this practice was unconstitutional and by early 1992, parliament amended Section 16 of the Canadian Criminal Code in order to reflect legal rights presented in the Canadian Charter of Rights and Freedoms. What was once known as Not Guilty by Reason of Insanity is now known as Not Criminally Responsible on Account of Mental Disorder (NCRMD).

The amendment to Part XX.1 of the Mental Disorder section of the Canadian Criminal Code was introduced in Bill C-30, which also abolished the role of the Lieutenant Governor and created the Canadian Review Board Systems for Mental Disorder. These Review Boards are tasked with imposing the least restrictive or onerous disposition while at the same time ensuring public safety. The three dispositions available to the Review Boards are absolute discharge, conditional discharge or an order to be held for treatment at a specialized psychiatric hospital (Criminal Code of Canada, R.S.C., 1992). Review Boards are also tasked with conducting annual reviews until the individual has been granted an absolute discharge. Every province and territory is responsible for governing their own Review Board. All Canadian Review Boards for Mental Disorder are specialized tribunals chaired by a judge, and consist of at least three other members. In the Province of Quebec, mandatory presence of at least one lawyer

and one psychiatrist, as well as a member of the Social Affairs division of the Tribunal Administratif du Quebec (TAQ, 2008), are required at every hearing.

Bill C-30 was a step in the positive direction, with its clearer and less stigmatizing vocabulary and definitions, while respecting human rights and freedoms. However, Bill C-30 was not without flaws and was shown to still require further adjustments. At a Review Board hearing in 1995, Joseph Winko was granted a conditional discharge (Sinha, 2009), despite the request for an absolute discharge. The Review Boards reasoning was that he "may" become a significant threat to the community. Winko took his case to the Supreme Court of Canada declaring that this decision went against the Canadian Charter of Rights and Freedoms. In 1999, the courts ruled that in absence of concrete evidence demonstrating an actual "significant" threat, Mr. Winko must be granted an absolute discharge. Once again setting a precedent and creating considerable change within the system (Schneider, Glancy, Bradford, & Seibenmorgen, 2000), in that prior to *Winko v. B.C.* (British Columbia Forensic Institute, 1999), uncertainty of threat resulted in continued follow-up within the system. Whereas, the inability to demonstrate that the patient is an actual significant threat after the *Winko v. B.C.* trial, now results in an absolute discharge (Balachandra, Swaminath, & Litman, 2004). Moreover, conditions imposed post *Winko v. B.C.* were modified as well. First, custody is rarely a condition applied to a conditional discharge, and secondly, conditions are now less onerous and in general imposed less often than before (Latimer & Lawrence, 2006).

Roesch and colleagues (1997) found that in the year following the 1992 amendment, there was an increase of use and success of the NCRMD defence. Furthermore, an increase of about 20% in remands was documented. Latimer and Lawrence (2006) also reported a 102% increase from 1992 to 2004. The authors concluded that the increase was not due to total number of absolute admissions in the judicial system. In the Province of Quebec, the TAQ reported that in 2005 the number of NCRMD findings had more than doubled since 1992 (N = 407 vs. N = 177, respectively), and again later in 2012 the number increased to 540 new verdicts (Carmelle Beaulieu, as mentioned in Crocker et al., 2015). Additionally, Latimer and Lawrence also reported that after the Winko case, absolute discharges increased from 10 to 15%, while conditional discharges increased from 33% to 37%. Conversely, there was a decrease (56% to 47%) in detention orders imposed by the Review Boards of Canada.

However, more recently (July 11, 2014), the federal government once again passed an amendment (Bill-54) to Part XX.1 of the Criminal Code, introducing limitations to the rights of a person deemed "high risk". To be labeled "high risk" one would have had to commit an act involving serious personal violence. A factor that the courts take into consideration when deciding on labeling an offender "high risk" is the element of the level of brutality of the act committed by the accused. Although this significant change in the system directly affects most individuals accused of homicide, the law is under great critique. Few cases have been designated high-risk and the legislation has not been implemented long enough to have exhibited a significant effect on the actual number of

cases which raise the issue of criminal responsibility. Additionally, this amendment will have no effect on the current study since it came into effect after data collection.

In summary, changes to the Criminal Code of Canada in 1992 aimed towards a fair and efficient system and to protect the rights of accused. Observers hypothesized that the amendments encouraged an influx of accused requesting and obtaining the NCRMD defence (Crocker et al., 2015; Latimer & Lawrence, 2006; Roesch et al., 1997). It can be postulated that the rates of individuals with MMD who are incarcerated for more serious crimes may have diminished, since it has become more advantageous to go through the Review Board for Mental Disorder system for more serious crimes prior to 2014. Therefore, we may also postulate that the characteristics of those who have committed a homicide-related crime and who still end up in the correctional system have changed from what was found in the past. It is likely that inmates convicted of homicidal crimes, after the implementation of the amendments to the Criminal Code, are more likely to resemble other highly criminalized inmates, whereas those who have committed homicidal crimes prior to the amendments present with greater prevalence of MMD.

The literature has often reported that homicide offenders are associated with significantly higher rates of MMD and more particularly higher rates of schizophrenia spectrum disorders (not including schizoid and schizotypal personality disorder; Baillargeon et al., 2009; Côté & Hodgins, 1992; Crocker, Seto, Nicholls, & Côté, 2013; Erb et al., 2001; Eronen et al., 1996; Gottlieb et al., 1987; Lindqvist, 1986; Shaw et

al., 2006). Given that individuals diagnosed with psychotic disorders are the most prominent users of the mental disorder defence (56.3%; Latimer & Lawrence, 2006), there is a possibility that after changes to laws governing non-responsibility, there may be a significantly lower prevalence of psychotic disorders in federal correctional institutions. In fact, Hodgins and Côté (1990) have previously reported a prevalence rate of 7.5% for psychotic disorders in corrections, whereas Côté and colleagues (paper in preparation) have presently found that the prevalence rate for psychotic disorders has dropped to 2.3% for the same population.

Since prevalence rates for psychotic disorders are decreasing in correctional institutions, the link that has traditionally been documented between homicide and MMD in the correctional setting may no longer be as useful for demonstrating the association between MMD and criminality and/or violence.

There is a lack of recent research examining the prevalence of MMD in inmates who have had at least one conviction for a homicide-related crime. Most research has reported a broad spectrum of crimes rather than specifically on homicide-related crimes, which are the most serious of all crimes, with major and long lasting repercussions (World Health Organization [WHO], 2015). Often, researchers will dichotomize crime into violent and non-violent (i.e. Brennan, Mednick, & Hodgins, 2000). Some studies analyze data on murder and manslaughter, but often overlook those who intended on committing homicide but were unable to complete the act. When studying mental health

some studies do not focus on those who have MMD, but rather wide diagnostic criteria for mental health. Therefore, these studies may have a limited ability to report true prevalence rates for individuals who have suffered from or who are currently suffering with a MMD and who are serving time for a homicide-related crime.

The CSC is responsible for managing institutions of various security levels and supervising offenders under conditional release in the community. At any given time, the CSC houses and/or manages approximately 23,000 offenders (Department Performance Report, CSC, 2013-2014). About 15,000 of those offenders are in federal custody. In Canada, offenders who receive a prison sentence of two years or more fall under federal jurisdiction. The current study thus draws on a sample of federally incarcerated offenders who have been convicted of a homicide or an attempted homicide in the Province of Quebec. Given that utilization of the NCRMD defence for violent crimes may be on the rise in Quebec, one can postulate that the rate of MMD among those incarcerated for homicidal crimes would have as well diminished. The current study will first investigate the lifetime prevalence rates of MMD among homicidal inmates (convicted of at least one first- or second-degree murder, manslaughter, or attempted homicide) within Quebec correctional facilities in order to demonstrate a change of prevalence over time. Then, group comparisons will be made with inmates who have committed crimes other than homicide-related ones.

## Hypothesis

Historically, major mental disorders were more apparent among individuals who committed homicide when compared to inmates who committed other crimes (e.g., 35%, Côté & Hodgins, 1992). More specifically, psychotic disorders (12.6%) were the most common disorders associated with homicide. It is hypothesized that these significant group differences, which were once observed (prior to 1992) when comparing those convicted of homicide and those who never committed a homicide, will no longer be apparent. More specifically, it is hypothesized that those who committed or attempted to commit homicide will no longer exhibit significantly higher rates of major mental disorders when compared to other inmates, and that the prevalence of homicidal individuals (convicted of at least one first- or second-degree murder, manslaughter, or attempted homicide) with a psychotic disorder within Quebec correctional facilities may now be significantly lower than in the past.

## Method

### Participants and Procedure

The participants for the current study consist of 563 federally sentenced males, who were part of a large epidemiological study which aimed to identify mental disorders present in Quebec correctional institutions (from 2008 to 2012). Participants were recruited from the Regional Reception Centre (RRC) of the CSC for the Province of Quebec.

Participants were selected from all men admitted for a first sentence or a new sentence of imprisonment. All participants provided informed consent for conducting all evaluations as part of an epidemiological study of mental illness, personality disorders and intellectual deficiency in the federal incarceration system. Consent forms and assessment protocol have been approved by the appropriate institutional ethics board (see Appendix).

The male inmates were approached to participate and complete assessments and consent within a month of their arrival at the RRC. Assessments were conducted by trained research assistants (a psychiatrist, a psychologist specializing in SCID I & II diagnostics, and five doctorate level students in psychology). These interviewers obtained excellent inter-rater agreements for MMD diagnoses ($n = 41$, kappa = .93). All assessments were completed before the inmate was transferred to their assigned penitentiary.

Given a limited number of interviewers could be in the facility conducting interviews at one time (due to space constraints), a selection processes was applied. The preselected goal of approaching one of every four incoming inmates was carried out by random selection of the first four inmates and then approaching every forth after that. Of the 768 potential participants, 36 individuals were excluded either for the following reasons: language barrier (10 individuals did not speak English or French), departure from the facility scheduled too early (18), too dangerous to interview (1), arrived at the

facility at the end of their sentence (5), unavailability of an office to conduct interviews (1), and one individual was very sick and was expected to pass away. Seven hundred and thirty-two inmates were therefore admissible for participation but 153 inmates refused. Thus 579 accepted to participate. In time, 16 individuals abandoned the project (4 were no longer interested in participating; 3 were overwhelmed with medical follow-ups; 4 were unable to form a trusting relationship with the interviewer; 2 were preoccupied by their transfer; 1 felt it was interfering with his other activities; 1 was not feeling mentally and physically stable; and 1 got transferred before completion of the project). The final acceptance rate was 77% ($n$ = 563).

The mean age of the inmates at the time of the first interview was 39 (SD = 12.8). The majority of the participants were Canadian (97.3%) and French speaking (78.9%). Five percent of the participants did not complete elementary school and 60% did not complete high school. Also, 50% of the participants were in a committed relationship (married, 6.7%; common law, 32%; relationship without cohabitation, 11.4%). For the purpose of this study, all individuals convicted of a homicide-related crime were selected. Homicide-related crimes include first- or second-degree murder, manslaughter, and attempted homicide. Of the 563 inmates with complete data, 55 inmates were convicted of at least one count of homicide or attempted homicide (life-time), which translates to almost 10 percent (9.8%) of the total sample (see Table 1 for distribution of type of homicide-related crime). History of criminal convictions was gathered from official record with the Royal Canadian Mounted Police (RCMP).

Table 1

*Distribution of type of homicide-related offenses (N=55)*

| Homicide offence | Total (%) |
|---|---|
| 1st Degree Murder | 5 (9.1) |
| 2nd Degree Murder | 10 (18.2) |
| Manslaughter | 17 (30.9) |
| Attempted Murder | 23 (41.8) |
| Total | 55 (100) |

*Note*. Two individuals had two second degree murder convictions, one individual had two manslaughter convictions, and two individuals had two attempted murder convictions.

## Diagnosis

For the purpose of this study, MMD is defined as a diagnosis of schizophrenia, schizophreniform disorder, schizo-affective disorder, delusional disorder, non-specified psychosis, major depression, or bipolar I disorder.

The Structured Clinical Interview (SCID) for the Diagnostic and Statistical Manual of Mental Disorder 4th edition-text revised (DSM-IV-TR) for Axis I Disorders was utilized to obtain MMD diagnoses (SCID-I; First, Spitzer, Gibbon, & Williams, 2002). The DSM is an American Psychiatric Association (APA) publication which uses common language and standard criteria for the classification of mental disorders. The SCID-I is widely used (Shear et al., 2000; Steiner, Tebes, Sledge, & Walker, 1995) on many different types of samples (e.g., Steadman, Robbins, Islam, & Osher, 2007;

Trestman, Ford, Zhang, & Wiesbrock, 2007; Zanarini & Frankenburg, 2001), with good to excellent reliability (Lobbestael, Leurgans, & Arntz, 2010; Williams et al., 1992; Zanarini et al., 2000; Zanarini & Frankenburg, 2001) and validity (Fennig, Craig, Lavelle, Kovasznay, & Bromet, 1994). Additionally, the SCID-I compares favourably to diagnoses made by psychiatrists in terms of sensitivity (.50 - 1.00), specificity (.94 - 1.00), and agreement ($k$ = .66 - .90; Fennig et al., 1994). For the current sample, an excellent inter-rater agreement was found for MMD diagnoses ($k$ = .93).

## Results

Analyses were conducted using lifetime prevalence rates for all MMD. Initial analyses indicate that of the 563 inmates, 167 (29.7%) have experienced at least one MMD in their lifetime (refer to Table 2 for details on MMD diagnoses). Twenty-nine (5.2%) obtained a current diagnosis of a MMD. The mentally disordered inmates did not differ from the non-mentally disordered inmates as to mean age at the time of interview or highest degree of education. However, they did differ on civil status at time of incarceration ($x^2$ = (1, N = 563) 10.924, $p \leq .001$). Whereas, those who had suffered in their lifetime with a MMD were more likely to be single (59.9%; these results are also reported in a symposium by Côté et al., 2013 and in a paper in preparation by Côté et al., in preparation).

The inmates convicted of at least one homicide-related crime were similar to the non-homicidal inmates in regards to age at the time of the interview ($t$(561) = .487,

$p = .626$), education level ($t(561) = -.75$, $p = .940$), and relationship status ($x^2 = (1, N = 548)\ 1.864, p = .172$).

Eighteen of the 55 homicidal inmates were also diagnosed with a MMD (32.7%). However, there was no significant difference in rate of MMD diagnosis between the two groups ($x^2 = (1,\ N = 563)\ .274,\ p = .600$). Therefore, those convicted of a homicide-related crime (32.7%) did not exhibit significantly higher rates of lifetime MMD than those who did not commit or attempt to commit homicide (29.3%). Subsequently, analyses were conducted to evaluate each major disorder individually, and results show that 100% of those with a MMD diagnosis from the group of those who committed homicide-related crimes were diagnosed with a major depression (see Table 2). However, there was no difference in rate of major depression diagnoses between those who committed a homicide-related crime (32.7%) and those who committed other crimes (26.4%, $x^2 = (1, N = 563)\ .1.015, p = .314$).

Table 2

*Major mental disorders among homicidal and non-homicidal inmates*

| Diagnosis (lifetime) | Homicidal Inmates N = 55 (%) | Non-Homicidal Inmates N = 508 (%) |
|---|---|---|
| Major Depression | 18 (32.7) | 134 (26.4) |
| Bipolar I | 0 | 4 (.8) |
| Schizophrenia-paranoid type | 0 | 5 (1.0) |
| Schizophreniphorm | 0 | 1 (.2) |
| Schizoaffective | 0 | 1 (.2) |
| Delusional Disorder | 0 | 3 (.6) |
| Non-specified Psychotic Disorder | 0 | 2 (.4) |
| **MMD** | **18 (32.7)** | **149 (29.3)** |

## Discussion

Historically, research conducted at Canadian correctional institutions has revealed a higher prevalence of MMD amongst homicide offenders when compared to other criminals (Côté & Hodgins, 1992; Hodgins & Côté, 1995). However, current data indicates that this is no longer the case in federal institutions in the Province of Quebec. Results from the present study indicate that there is no significant difference in prevalence rates of MMD when comparing inmates who committed or attempted to commit homicide and inmates who committed other crimes (but never a homicide-related crime).

In an attempt to explain the discrepancy between the current results and those obtained from past research for similar populations, one may postulate that the discrepancy may be due to the difference in diagnostic instruments utilized. The current study used the SCID I, whereas at the time of past research, the Diagnostic Interview Schedule-version III (DIS; Robins, Helzer, Croughan, & Ratcliff, 1981) was most popular, due to its use in a large epidemiological study in the USA (U.S. Dept. of Health and Human Services & National Institute of Mental Health, 1992). Therefore, research conducted in the early 90's (Côté & Hodgins, 1992; Hodgins & Côté, 1995) favoured the use of the DIS, which has some strengths, but also some weaknesses. First, the schedule allows for epidemiological comparisons and is ideal for epidemiological studies, due to the fact that it was designed to be administered by lay interviewers. However, the DIS has been found to underreport the prevalence of MMD (Hodgins, 1995), both major depression (Helzer et al., 1985) and psychotic disorders (Anthony et al., 1985; Eaton, Neufeld, Chen, & Cai, 2000; Folstein et al., 1985; Pulver & Carpenter, 1983). For example, researchers reported that agreement for diagnosing a major depression was only fair ($k = .20$) with the DIS missing many cases judged to meet criteria for a diagnosis using the Schedule for Clinical Assessment in Neuropsychiatry (WHO, 1994). Factors associated with under-detection by the DIS were older age, male gender, and lower impairment (Eaton et al., 2000), which are all relevant in research conducted in correctional settings. Pulver and Carpenter (1983) reported similar findings with the use of the DIS for diagnosing psychotic disorders, concluding that the use of the DIS may seriously underestimate lifetime occurrence of psychotic symptoms.

Furthermore, the DIS does not differentiate between different forms of psychotic disorders, grouping them into a schizophrenia spectrum diagnosis (not including schizoid and schizotypal personality disorders), while at the same time not formulated to evaluate delusional disorder fully.

Another factor which may have had an influence on current MMD prevalence rates for homicide offenders is the fact that Canada has been experiencing a steady decline in homicide and attempted homicide rates in the past few decades (Miladinovic & Mulligan, 2015; Statistics Canada, 2016). In 2014 Canadian police services reported 516 homicides, which were four more cases than during the previous year, yet still 18% below average from the previous decade, which translates into a national homicide rate of about 1.45 in 100,000 population, whereas in 2004, the national homicide rate was 1.95 in 100,000 (Statistics Canada, table 353-0001, CANSIM database). Statistics Canada reports that the national homicide rate is at its lowest point since 1966. Also in 2014, there were 617 attempted murders, which has as well, been on a stable decline for the last five years (Boyce & Cotter, 2013; Miladinovic & Mulligan, 2015). However, it is unclear if this factor would have an effect on offenders with mental illness, given that research from the U.K. has found that the rate of homicide committed by individuals with a mental health disorders holds steady over time (Taylor & Gunn, 1999). In other research conducted in Australia, it was reported that in cases where the rate of violent offences by those with mental illness was found to elevate slightly over time, so did the rate for those without mental illness (Wallace, Mullen, & Burgess, 2004). Therefore, the

rate increase over time was due to a general increase in violent crimes nationally, and not due to its association with mental illness.

Although the argument for the difference in diagnostic instruments or declining homicide rates are valid ones, there is another argument that may be more relevant in influencing the change in rates of MMD observed amongst inmates who have committed homicide-related crimes. It is highly likely that the current results reflect the influence the amendments to the Canadian Criminal Code in 1992 and everything that followed (e.g., Winko; British Columbia Forensic Institute 1999) may have had on the pathways to treatment and incarceration of this group of individuals. There is a clear increase in use and success of the NCRMD defences since 1992 (Latimer & Lawrence, 2006; Roesch et al., 1997). Latimer and Lawrence (2006) indicated that there was a 102% increase of absolute number of admissions within a 12 years period following the criminal code amendment, which they predicted would continue to increase. They also stated that the increase in Review Board admissions was not a result of more accused appearing in adult criminal courts but rather an indication that the courts were more likely to find an accused NCRMD/UST (unfit to stand trial). Furthermore, Latimer and Lawrence also found that homicide-related offences (11.6%) were the second most common index offence that brought them to the Review Board during their two year study period.

The increase in cases directed towards the Quebec Review Board for Mental Disorder is clear (Crocker et al., 2015; Latimer & Lawrence, 2006). It is also clear that it is not an increase in individuals who are committing crimes, but in fact, an increase in use of the system. Cochrane, Grisso, and Frederick (2001) found that psychotic disorders are the leading diagnostic category usually obtaining a mental health plea, and Crocker et al. (2013) found that approximately two-thirds of their sample of individuals found NCRMD for seriously violent offences were primarily diagnosed as having a psychotic disorder, which was predominately schizophrenia. Therefore, it is possible to postulate that the more seriously impaired individuals with MMD are not being sent to correctional services but rather specialized forensic facilities. This may also be the reason why no cases of psychosis were reported within the homicide group. Homicide being the most seriously violent crime, and psychosis being one of the most serious and debilitating MMD, it is more likely that individuals who have both committed a homicide-related crime and have a psychotic disorder are directed towards the TAQ for review. Consequently, the redirection of accused is likely altering current prevalence rates of those who have lifetime MMD, yet still incarcerated for a homicide-related crime. In fact, this group of homicidal individuals may present with a profile more closely resembling that of a career criminal and not of an individual who loses control due to an acute episode or who have suffered a lifetime of MMD. Future analyses are needed to further investigate characteristics of those who have committed homicide-related crimes and how the changes to the criminal code may have affected this population still present in correctional facilities.

Strengths and limitations

The current study is the first since the 1992 amendments to the Canadian Criminal Code to analyze rates of MMD in a group of individuals incarcerated for a homicide or an attempted homicide. The majority of the interviews were conducted by highly trained clinicians with an expertise in the field, which leads to the next strength, the fact that the inter-rater reliability was excellent. Finally, the sample size of 563 inmates is quite large, and therefore, the current research represents a large, reliable and representative study of homicidal individuals in correctional services in the Province of Quebec.

However, this study has some limitations which must be taken into account. First, the timing of the diagnosis by research staff is not ideal. Due to the design of this study, the diagnostic interviews were conducted after significant delays from the time the crime was committed. Ideally, and interview would have been conducted at the time, or shortly after the crime was committed. On balance however, psychotic disorders diagnoses are found to be quite stable over time (Helgeland & Torgersen, 2005; Jarbin & Knorring, 2003; Masson, Harrison, Croudace, Glazebrook, & Medley, 1997). Second, homicide-related crime was based on official record with the RCMP, and not a combination of official files and self-reports. Official files within the federal policing system may be missing information. The weakness in the official files is most prevalent when the crime was committed by an individual with a mental health problem. As well, in Canada every year about three-quarters of all homicides are solved, leaving about 25% unsolved (Boyce & Cotter, 2013). Therefore, there is a subgroup of individuals who have not been

caught and should be part of this group for analyses. However, this may not be as relevant for this particular study given that those with MMD are usually arrested more often than individuals without mental health problems (Brennan et al., 2000). Lastly, only newly admitted individuals were approached to participate in the study and therefore, the homicide rate among inmates was lower than expected and does not reflect the current prevalence rate of homicide in Quebec correctional institutions. Inmates serving time for homicide-related crimes tend to spend longer periods in corrections. Therefore, if previously admitted inmates were to have been approached, as well as newly admitted inmates, a carryover affect would have been captured. This may explain why our rate of 10% for homicide-related crimes is lower than what is reported from Correctional Service Canada (20%, CSC, 2014; CSC, 2017).

In conclusion, the present study has put into question the association of MMD among inmates convicted of homicide, which has been used as a major pathway in the hypothesis demonstrating that MMD are related to criminality and/or violence (e.g., Hodgins, 2001). Studies linking homicide and MMD in correctional settings can no longer be used as one of the pathways linking MMD and criminality and/or violence, due to the fact that the prevalence of MMD among homicide offenders in the correctional setting are no longer higher than that of other criminals. Rather, cases of MMD are most probably being redirected towards NCRMD verdicts.

The amendments to the criminal code may have created appropriate action in addressing psychological needs of offenders with MMD, indicating that there may in fact be amelioration in the system. In the sense that those needing specialized services after offending are being appropriately directed towards the provincial Review Boards for Mental Disorder. Alternatively, it may be that the more liberal use of section 16 of the Canadian Criminal Code is being captured in this study. If one would want to still be able to use the link between homicide and MMD to maintain it as one of the major pathways of investigation supporting the hypothesis that MMD are associated to criminality and/or violence, they would have to study all individuals accused of homicide regardless of their guilt or NCRMD status. It would be interesting to evaluate other provinces in order to investigate if in fact the amendments to the Canadian Criminal Code have had the same effect across the country. As it is believed that if the amendments made to the Canadian Criminal Code are responsible for the shift in psychological status of current inmates, then these finding should be generalizable across provinces. However, it is not believed that these results can be generalizable to other countries given that every country is governed by laws influenced by a multitude of factors, over different time periods.

In this new era of laws and subsequent changes, more research is needed to investigate exactly how the incarcerated population has changed. Additionally, there is a need for future research to investigate how these changes have affected observations made in past research. Given what we now know about the shift of psychological status

of current inmates, services within the CSC need to be re-evaluated to adapt to the social and psychological needs of these inmates.

## References

Andrews, D. A., & Bonta, J. (1993). *The psychology of criminal conduct*. Cincinnati, OH: Anderson Publishing.

Anthony, J. C., Folstein, M. F., Romanoski, A. J., Von Kroff, M. R., Nestadt, G. R., Chahal, R., ... Kramer, M. (1985). Comparison of the lay diagnostic interview schedule and standard psychiatric diagnosis. *Archives of General Psychiatry, 42,* 667-675.

Ayuso-Mateos, J. L. (2000). *Global burden of schizophrenia in the year 2000: Version 1 estimates.* World Health Organization, Geneva, Switzerland. Available from http://www.who.int/healthinfo/statistics/bod_schizophrenia.pdf

Baillargeon, J., Binswanger, I. A., Penn, J. V., Williams, B. A., & Murray, O. J. (2009). Psychiatric disorders and repeat incarcerations: The revolving door. *American Journal of Psychiatry, 166,* 103-109.

Balachandra, K., Swaminath, S., & Litman, L. C. (2004). Impact of Winko on absolute discharges. *Journal of the American Academy of Psychiatry and the Law, 32,* 173-177.

Beaudette, J. N., Power, J., & Stewart, L. A. (2015). *National prevalence of mental disorders among incoming federally sentenced men offenders* (Research Report, R-357). Ottawa, ON: Correctional Service Canada.

Beaudette, J. N., & Stewart, L. A. (2016). National prevalence of male disorders among incoming Canadian male offenders. *Canadian Journal of Psychiatry, 61,* 624-632.

Bland, R. C., Newman, S. C., Dyck, R. J., & Orn, H. (1990). Prevalence of psychiatric disorders and suicide attempts in a prison population. *Canadian Journal of Psychiatry, 35,* 407-413.

Bland, R. C., Newman, S. C., Thompson, A. H., & Dyck, R J. (1998). Psychiatric disorders in the population and in prisoners. *International Journal of Law and Psychiatry, 21,* 273-279.

Bonta, J., Andrews, D. A., & Motiuk, L. L. (1993). *Dynamic risk assessment and effective treatment.* Paper presented at the annual meeting of the American Society of Criminology, Phoenix, October 28.

Boyce, J., & Cotter, A. (2013). Homicide in Canada, 2012. *Juristat*. Canadian Centre for Justice Statistics, Statistics Canada catalogue No. 85-002-X

Brennan, P. A., Mednick, S. A., & Hodgins, S. (2000). Major mental disorder and criminal violence in a Danish birth cohort. *Archives of General Psychiatry, 57*, 494-500.

Brink, J. H., Doherty, D., & Boer, A. (2001). Mental disorder in federal offenders: A Canadian prevalence study. *International Journal of Law and Psychiatry, 24*, 339-356.

Canadian Institute for Health Information. (2008). *Improving the health of Canadians: Mental health, delinquency and criminal activity.* Ottawa, ON: Canadian Institute for Health Information.

Cochrane, R. E., Grisso, T., & Frederick, R. I. (2001). The relationship between criminal charges, diagnoses, and psycholegal opinions among federal pretrial defendants. *Behavioral Science & the Law, 19*, 565-582.

Correctional Service of Canada. (CSC, 1990). Mental health of federal inmates. *Forum, 2*, 271-281.

Correctional Service of Canada. (CSC, 2010). *Community mental health initiative.* Available from http://www.csc-scc.gc.ca/publications/092/005007-3010-eng.pdf

Correctional Service of Canada. (CSC, 2014). *CSC Statistics - Key facts and figures.* Via Offender Management System as of April 14, 2013.

Correctional Service of Canada. (CSC, 2017). *CSC statistics – key facts and figures.* Available from http://www.csc-scc.gc.ca/publications/092/005007-3024-eng.pdf

Côté, G., Crocker, A., Daigle, M., Toupin, J., Gobbi, G., & Turecki, G. (paper in preparation). *Mental health problems in correctional settings.*

Côté, G., Crocker, A., Daigle, M., Toupin, J., Gobbi, G., Turecki, G., ... Brouillard, M. (2013). Mental health problems in correctional settings. Symposium presented at the 13th annual International Association of Forensic Mental Health Services (IAFMHS) conference *Empowering Forensic Mental Health Services: Intergrading Research and Practice*, June 18-21, Maastricht, the Netherlands, 45.

Côté, G., & Hodgins, S. (1992). The prevalence of major mental disorders among homicide offenders. *International Journal of Law and Psychiatry, 15*, 89-99.

Côté, G., & Hodgins, S. (2003). Les troubles mentaux et le comportement criminel. In M. Le Blanc, M Ouimet & D Szabo (Eds), *Traité de criminologie empirique, 3rd ed.* (pp. 503-548). Montréal, QC : Bibliothèque Nationale du Canada.

Criminal Code of Canada, R.S.C., 1985, c. C-46.

Criminal Code of Canada, R.S.C., 1992, c. C-46.

Crocker, A. G., Nicholls, T. L., Seto, M. C., Côté, G., Charette, Y., & Caulet, M. (2015). The national trajectory project of individuals found not criminally responsible on account of mental disorder in Canada. Part 1: Context and mthods. *Canadian Journal of Psychiatry, 60,* 98-105.

Crocker, A. G., Seto, M. C., Nicholls, T. L., Côté, G. (2013). Description and processing of individuals found not criminally responsible on account of mental disorder accused of "serious violent offences". Research and Statistics division, Department of Justice, Canada.

Daigle, M., & Côté, G. (2002). *Dépistage systématique et prise en charge de hommes incarcérés suicidaires* (Rapport d'évaluation). Available from http://www.crise.ca/e-docs/daigle2002_hommes.pdf

Eaton, W. W., Neufeld, K., Chen, L. S., & Cai, G. (2000). A comparison of self-report and clinical diagnostic interviews for depression. *Archives of General Psychiatry, 57,* 217-222.

Erb, M., Hodgins, S., Freese, R., Müller-Isberner, R., & Jöckel, D. (2001). Homicide by persons with schizophrenia before and after deinstitutionalization. *Criminal Behaviour and Mental Health, 11,* 6-26.

Eronen, M., Tiihonen, J., & Hakola, P. (1996). Schizophrenia and homicidal behavior. *Schizophrenia Bulletin, 22*, 83-89.

Fazel, S., & Danesh, J. (2002). Serious mental disorder in 23 000 prisoners: A systematic review of 62 surveys. *The Lancet*, *359*, 545-550.

Fazel, S., & Seewald, K. (2012). Severe mental illness in 33 588 prisoners worldwide: Systematic review and meta-regression analysis. *British Journal of Psychiatry, 200,* 364-373.

Fennig, S., Craig, T., Lavelle, J., Kovasznay, B., & Bromet, E. J. (1994). Best-estimate versus structured interview-based diagnosis in first-admission psychosis. *Comprehensive Psychiatry, 35,* 341-348.

First, M. B., Spitzer, R. L., Gibbon, M., & Williams, J. B. W. (2002). *Structured clinical interview for DSM-IV-TR for axis I disorders-patient edition.* New York, NY: Biometric Research Department, New York State Psychiatric Institute. (French translation by Lise Bordeleau and Daniclle Gangé, membres de l'équipe de l'Unité de recherche en Neuroscience. Le Centre Hospitalier Universitaire de Québec).

Folstein, F. F., Romanoski, A. J., Nestadt, G., Chahal, R., Merchant, A., Shapiro, S., ... McHugh, P. R. (1985). Brief report on the clinical reappraisal of the Diagnostic Interview Schedule carried out at the John Hopkins site of the Epidemiological Catchment Area Program of the NIMH. *Psychological Medicine, 15,* 809-814.

Glancy, G., & Bradford, J. (1999). Canadian landmark cases: Regina v. Swain. *Journal of the American Academy of Psychiatry and the Law, 27,* 301-307.

Gottlieb, P., Gabrielsen, G., & Kramp, P. (1987). Psychotic homicides in Copenhagen from 1959 to 1983. *Acta Psychiatrica Scandinavica, 76,* 285-292.

Health Canada. (2002). *A report on mental illness in Canada.* Ottawa, ON: Health Canada.

Helgeland, M. I., & Torgersen, S. (2005). Stability and prediction of schizophrenia from adolescence to adulthood. *European Child & Adolescent Psychiatry, 14,* 83-94.

Helzer, J. E., Robins, L. N., McEvoy, L. T., Spitznagel, E. I., Stoltzman, R. K., Farmer, A., & Brockington. I. F. (1985). A comparison of clinical and diagnostic interview schedule diagnosis: Physician reexamination of lay-interviewed cases in the general population. *Archives of General Psychiatry, 42,* 657-666.

Hodgins, S. (1995). Assessing mental disorder in the criminal justice system: Feasibility versus clinical accuracy. *International Journal of Law and Psychiatry, 18*, 15-28.

Hodgins, S. (2001). The major mental disorders and crime: Stop debating and start treating and preventing. *International Journal of Law and Psychiatry, 24*, 427-446.

Hodgins, S., & Côté, G. (1990). Prevalence of mental disorders among penitentiary inmates in Québec. *Canada's Mental Health, 3,* 1-4.

Hodgins, S., & Côté, G. (1995). Major mental disorder among penitentiary inmates. In L. Stewart, L. Stermac & C. Webster (Eds), *Clinical criminology: Toward effective treatment. Proceedings of the second conference on clinical criminology* (p. 6-20). Toronto, ON: Correctional Services of Canada.

Jarbin, H., & Knorring, A. L. V. (2003). Diagnostic stability in adolescent onset psychotic disorders. *European Child & Adolescent Psychiatry, 12,* 15-22.

Latimer, J., & Lawrence, A. (2006). *The review board systems in Canada: An overview of results from the mentally disordered accused data collection study.* Ottawa, ON: Department of Justice Canada, No. Rr06-1e.

Lindqvist, P. (1986). Criminal homicide in Northern Sweden 1970-In 1981: alcohol intoxication, alcohol abuse and mental disease. *International Journal of Law and Psychiatry, 8,* 19-37.

Lobbestael, J., Leurgans, M., & Arntz, A. (2010). Inter-rater reliability of the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID I) and Axis II Disorders (SCID II). *Clinical Psychology & Psychotherapy, 18,* 75-79.

Masson, P., Harrison, G., Croudace, T., Glazebrook, C, Medley, I. (1997). The predictive validity of a diagnosis of schizophrenia. A report from the International Study of Schizophrenia (ISoS) coordinated by the World Health Organization and the Department of Psychiatry, University of Nottingham. *British Journal of Psychiatry, 170,* 321-327.

Miladinovic, Z., & Mulligan, L. (2015). Homicide in Canada, 2014. *Juristat.* Canadian Centre for Justice Statistics, Statistics Canada catalogue No. 85-002-X.

Motiuk, L. L., & Porporino, F. J. (1991). *The prevalence, nature and severity of mental health problems among federal male inmates in Canadian penitentiaries.* Research Report, R-24. Ottawa, ON: Correctional Service of Canada.

Powell, T. A., Holt, J. C., & Fondacaro, K. M. (1997). The prevalence of mental illness among inmates in a rural state. *Law and Human Behaviour, 21,* 427-437.

Pulver, A. E., & Carpenter, W. T. (1983). Lifetime psychotic symptoms assessed with the DIS. *Schizophrenia Bulletin, 9,* 377-382.

Richard-Devantoy, S., Olie, J. P., & Gourevitch, R. (2009). Risque d'homicide et troubles mentaux graves : revue critique de la littérature. *Encéphale, 35,* 521-530.

Robins, L. N., Helzer, J. E., Croughan, J., & Ratcliff, K. S. (1981). National Institute of Mental Health Diagnostic Interview Schedule: Its history, characteristics, and validity. *Archives of General Psychiatry, 38,* 381-389.

Roesch, R., Ogloff, J. R. P., Hart, S. D., Dempster, R. J., Zapf, P. A., & Whittemore, K. E. (1997). The impact of Canadian Criminal Code changes on remands and assessments of fitness to stand trial and criminal responsibility in British Columbia. *Canadian Journal of Psychiatry, 42,* 509-514.

Regina. v. Swain, 1 SCJ 32 (1991).

Schneider, R. D., Glancy, G. D., Bradford, J. M., & Seibenmorgen, E. (2000). Canadian landmark case, Winko v. British Columbia: Revisiting the conundrum of the mentally disordered accused. *Journal of the American Academy of Psychiatry and the Law, 28,* 206-212.

Shaw, J., Hunt, I. M., Flynn, S., Meehan, J., Robinson, J., Bickley, H., ... Applby, L. (2006). Rates of mental disorder in people convicted of homicide: National clinical survey. *British Journal of Psychiatry, 188,* 143-147.

Shear, M. K., Greeno, C., Kang, J., Ludewig, D., Frank, E., Swartz, H. A., ... Hanekamp, M. (2000). Diagnosis of non-psychotic patients in community clinics. *American Journal of Psychiatry, 157,* 581-587.

Sinha, M. (2009). *An Investigation into the feasibility of collecting data on the involvement of adults and youth with mental health issues in the criminal justice system.* Crime and Justice Research Paper Series. Statistics Canada Catalogue no. 85-561-M - No. 016. Available from www.statcan.gc.ca/pub/85-561-m/85-561-m2009016-eng.pdf (retrieved May 27, 2015).

Statistics Canada. (2016). *Police-reported crime statistics in Canada, 2015: Highlights* (N0. 85-002-X). Ottawa, ON: Government of Canada.

Steadman, H. J., Robbins, P. C., Islam, T., & Osher, F. (2007). Re-validating the Brief Jail Mental Health Screen to increase accuracy for women. *Psychiatric Services, 58,* 1598-1601.

Steiner, J. L., Tebes, J. K., Sledge, W. H., & Walker, M. L. (1995). A comparison of the structured clinical interview for DSM-III-R and clinical diagnoses. *Journal of Nervous & Mental Disease, 183,* 365-369.

Swinson, N., & Shaw, J. (2007). Homicide and mental disorder: The national confidential inquiry. *Psychiatry, 6,* 452-454.

Taylor, P. J., & Gunn, J. (1999). Homicide by people with mental illness: Myth and reality. *British Journal of Psychiatry, 174,* 9-14.

Trestman, R. L., Ford. J., Zhang, W., & Wiesbrock, V. (2007). Current and lifetime psychiatric illness among inmates not identified as acutely mentally ill at intake in Connecticut's jails. *Journal of the American Academy of Psychiatry and the Law, 35,* 490-500.

Tribunal Administratif du Québec. (2008). *Rapport annuel de gestion 2006-2007.* Québec, QC : Tribunal Administratif du Québec. Available from http://www.taq.gouv.qc.ca/fr/publications-documentation/publications/depliants-guides-et-rapports

U.S. Dept. of Health and Human Services & National Institute of Mental Health. (1992). *Epidemiology catchment area study, 1980-1985*: Rockville, MD: U.S. Dept. of Health and Human Services, National Institute of Mental Health. Ann Arbor, Inter-university Consortium for Political and Social Research. doi: 10.3886/ ICPSR06153.v1

Wallace, C., Mullen, P., & Burgess, P. (2004). Criminal offending in schizophrenia over a 25-year period marked by deinstitionalization and increasing prevalence of comorbid substance use disorders. *American Journal of Psychiatry, 161,* 716-727.

Williams, J. B., Gibbon, M., First, M. B., Spitzer, R. L., Davies, M., Borus, J., ... Wittchen, H-U. (1992). The Structured Clinical Interview for DSM-III-R (SCID) II: Multisite Test-retest reliability. *Archives of General Psychiatry, 49,* 630-636.

Winko v. British Columbia (Forensic Psychiatric Institute), 1999, 2 SCR 625.

World Health Organization. (WHO, 1994). *Schedules for clinical assessment in neuropsychiatry: version 2.* Division of Mental Health. Author.

World Health Organization. (WHO, 2015). *Violence info. Homicide: WHO global health estimates.* Retrieved September 7, 2018 from http://apps.who.int/violence-info/homicide/

Zanarini, M. C., & Frankenburg, F. R. (2001). Attainment and maintenance of reliability of Axis I and Axis II disorders over the course of a longitudinal study. *Comprehensive Psychiatry, 42*, 369-374.

Zanarini, M. C., Skodol, A. E., Bender, D., Dolan, R. T., Sanislow, C. A., Schaefer, E., ... Gunderson, J. G. (2000). The collaborative longitudinal personality disorder study: Reliability of Axis I and II diagnoses. *Journal of Personality Disorders, 14*, 291-299.

# Chapter 2
# Profiles of homicidal inmates before and after the introduction of amendments to the Criminal Code of Canada

# Profiles of homicidal inmates before and after the introduction of amendments to the Criminal Code of Canada

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The prevalence of mental illness among inmates within correctional settings have been said to be higher than the general population (Beaudette & Stewart, 2016; Brink, Doherty, & Boer, 2001; Hodgins & Côté, 1995; Fazel & Danesh, 2002; Fazel & Seewald, 2012; Teplin, Abram, & McClelland, 1996). The Canadian Institute for Health Information (2008) finds that individuals with mental illness such as psychosis, depression, anxiety, and substance related disorders are highly over-reported within our correctional facilities. Some maintain that higher rates of mental illness among inmates are an indication that those with major mental disorder (MMD) are at higher risk of criminality and/or violence (Hodgins, 2001). Several early large scale studies have determined that there is in fact a relationship between mental disorders and violence (Link, Andrews, & Cullen, 1992; Swanson, Holzer, Ganju, & Jono, 1990; Steadman et al., 1998; Teplin, 1990; Tiihonen, Isohanni, Räsänen, Koiranen, & Moring, 1997) and that this association is most relevant when discussing the crime of homicide (Baillargeon, Binswanger, Penn, Williams, & Murray, 2009; Côté & Hodgins, 1992).

At the moment, what we know about inmates who have committed a homicide is that historically the prevalence of MMD was higher than their non-homicidal counterparts (Coté & Hodgins, 1992; Erb, Hodgins, Freese, Müller-Isberner, & Jöckel, 2001). More specifically, inmates who had committed a homicide were more likely to have higher rates of schizophrenia and other psychotic disorders (Baillargeon et al., 2009; Côte & Hodgins, 1992; Shaw et al., 2006; Swinson & Shaw, 2007). More recently however, our research, (Vracotas & Côté, 2017) has shown that the prevalence of MMD

amongst inmates who have committed or attempted to commit homicide is no longer significantly different when compared to other federal correctional inmates who have never committed a homicide-related crime. Additionally, we found that the most common diagnosis for homicidal inmates was major depression, and interestingly, there were no cases of schizophrenia or other psychotic disorders within the homicidal group. Curiosity is piqued when comparing this observation to that from the same population of inmates about 25 years prior (e.g., Côté & Hodgins, 1992). Therefore, it begs the question: why has the prevalence for MMD among those who have committed homicide-related crimes changed over the years, and what else about the profile of homicidal inmates has changed?

In an attempt to answer the first question, we (Vracotas & Côté, 2017) hypothesized that the amendments to the Canadian Criminal Code in 1992 had most probably influenced the redirection of those who suffer from the most severe cases of MMD, such as schizophrenia and other psychotic disorders, to the Canadian Review Boards for Mental Disorder. Assumptions were based on findings from prominent studies and official government statistical reports indicating an increased use and success of the 'not criminally responsible due to mental disorder' defence (NCRMD) as well as an increase in the number of absolute discharges granted (Crocker et al., 2015; Latimer & Lawrence, 2006; Roesch et al., 1997; Tribunal Administratif du Québec, 2008).

Now that the prevalence rates of MMD are no longer significantly higher for inmates who have committed homicide-related crimes when compared to other inmates, the question is: how has this change possibly affected the psychosocial characteristics of this population?

The aim of the present study was to analyze data collected during two periods in time, which represent time frames for pre- and post- amendment to the Canadian Criminal Code. The first sample was collected in 1988, which represents the period prior to the amendments made to the Criminal Code (1992), while the second sample was collected between 2008 and 2012 and represents the post-amendment period. Although diagnoses during the two periods were evaluated via different instruments, the idea is to identify and compare inmate psychosocial profiles with the hypothesis that if indeed MMD are less present among homicidal inmates, are there other elements among the offenders psychosocial profile that differ? Of particular interest are the profiles which include the majority of the homicidal inmates.

## Hypothesis

Research has shown that individuals who committed or attempted to commit homicide no longer exhibit significantly higher rates of MMD when compared to other inmates, and this is especially the case for psychotic disorders (Vracotas & Côté, 2017). If these observations are correct, then it can be hypothesized that those serving time in a penitentiary and who have been convicted for homicide-related crimes (homicide-related

crimes include, first- or second-degree murder, manslaughter, and attempted homicide) since the 1992 amendments to the Canadian Criminal Code will present with a psychosocial profile more closely resembling the average inmate rather than characteristics related to unstable major mental illness. More specifically, the majority of the homicidal inmates from the years 2008 to 2012 will present with more previous criminal convictions, and characteristics related to juvenile delinquency, antisocial personality and/or psychopathy rather than characteristics related to major mental illness. Whereas, those from the homicidal group prior to the amendments (1988), will exhibit a profile with less of a criminal history and characteristics closely related to major mental disorder.

## Methods

### Participants and Procedure

The participants for the current study were collected during two different time frames. The first database one was collected in 1988 and the second was collected between 2008 and 2012. Both data collections were based on random sampling, and consisted of men who were sentenced to a federal correctional institution in the Province of Quebec. Consent forms and assessment protocol have been approved by the appropriate institutional ethics board (see Appendix).

Sample from 1988

The first sample of 650 male inmates was collected at random among 2,972 inmates housed in Quebec penitentiaries on April 13, 1988. From the 650 inmates selected to participate, 138 refused to be interviewed, 15 could not be contacted, and two interviews could not be analyzed because the responses were contradictory. It resulted in a sample of 495 inmates for which interviews were conducted and an acceptance rate of 76.2%. Inmates who participated in the project were similar to inmates who refused with respect to age, marital status, type of offence, maternal language, number of sentences served in a penitentiary, security level where they were housed in the penitentiary, major offence leading to the sentence at the time data was collected, and most serious crime for which the inmate was ever convicted. However, those who refused to participate were incarcerated longer ($M$ = 155.1 weeks, SD = 197.4) than those who participated ($M$ = 119.5 weeks, SD = 166.9; $t(306.13) = 2.19$, $p = .03$) in regards to the sentence they were serving at the time of the study (also reported in Côté & Hodgins, 1992). However, 35 inmates later refused to grant access to their criminal records, resulting in a final sample consisting of 460 participants with complete data.

The mean age of the inmates at the time of their first criminal act was 25.7 (SD = 7.5), and at the time of the first interview for participation in the current study was 31.5 (SD = 8.66). The majority of the participants were Caucasian (97.8%) and French-speaking (57%). More than half (51.3%) of the participants were single at the time of incarceration, while 40% reported being in a committed relationship. At the time of the

interview, they had been incarcerated for an average of 122 weeks, and for most of the participants it was their first sentence in a penitentiary (56.1%).

Sample from 2008 to 2012

The second data sample was collected between 2008 and 2012, which was part of a large epidemiological study which aimed to identify mental disorders present in male federal correctional institutions in the Province of Quebec. Participants were recruited from the Regional Reception Centre (RRC) of the CSC for the province.

Male participants were selected based on those who have been the subject of a first sentence or a new sentence of imprisonment. All participants provided an informed consent for conducting all evaluations as part of the epidemiological study of mental illness, personality disorders and intellectual deficiency in the federal incarceration system.

Within one month of their arrival at the RRC the inmates were approached to participate in the study. Assessments were conducted by trained research assistants (a psychiatrist, a psychologist specializing in SCID I & II diagnostics, & five doctorate level students in psychology) and were completed before the inmates were transferred to the penitentiary they were assigned to.

Given a limited number of interview rooms available to research staff, a selection process was applied. The preselected goal of approaching one of every four incoming inmates was attained by random selection of the first four inmates and then approaching every forth after that. From the 768 potential participants, 36 individuals were excluded. The reasons for exclusion are the following: language barrier (10 individuals did not speak English or French), departure from the facility scheduled too early (18), too dangerous to interview (1), arrived at the facility at the end of their sentence (5), unavailability of an office to conduct interviews (1), and one individual was very sick and was expected to pass away. Seven hundred and thirty-two inmates were therefore admissible for participation however, 153 inmates refused. Thus 579 accepted to participate. Later, 16 individuals abandoned the project (four were no longer interested in participating; three were overwhelmed with medical follow-ups; four were unable to form a trusting relationship with the interviewer; two were preoccupied by their transfer; one felt it was interfering with his other activities; one was not feeling mentally and physically stable; and one was transferred before all assessments could be completed). Therefore, eliciting an acceptance rate of 77%. Complete data was obtained for 563 federally sentenced males.

Due to the difference in study designs for both samples, some comparisons cannot be carried out. For instance, the length of incarceration could be calculated for the 1988 sample, as those inmates were already serving their sentence at the time of participation. Whereas, this calculation was not an option for the sample collected between 2008

and 2012 due to recruitment only being available for newly admitted inmates. However, acceptance rates for both projects were identical.

The mean age of the inmates at the time of the first interview was 39 (SD = 12.8 years). The majority of the participants were Canadian (97.3%) and French-speaking (78.9%). Five percent of the participants did not complete elementary school and 60% did not complete high school. Also, 50% were in a committed relationship (married, 6.7%; common law, 32%; relationship without cohabitation, 11.4%).

Diagnoses and Characteristics for Sample collected in 1988. In 1988, when data was collected for the first sample, the use of The Diagnostic Interview Schedule-version III-A (DIS; Robins, Helzer, Croughan, & Ratcliff, 1981), was used to establish diagnoses and personality characteristics. The DIS is a standardized, reliable and valid instrument, which was designed for use by lay interviewers (Eaton, Dryman, Sorenson, & McCutcheon, 1989; Escobar, Randolph, Asamen, & Karno, 1986; Helzer et al., 1985). The DIS was developed by the National Institute of Mental Health, and adopts objective diagnostic criteria described in the Diagnostic and Statistical Manual of Mental Disorders (DSM-III) of the American Psychiatric Association (APA, 1980). The DSM utilizes common language and standard criteria for the classification of mental disorders, while the DIS allows for diagnosis on a historical (lifetime) basis.

At the time, 69 participants were re-interviewed after a mean delay of five weeks by an alternate interviewer to elicit a good interrater agreement (kappa = .78; reported in Côté & Hodgins, 1992; Hodgins & Côté, 1993).

Diagnoses and Characteristics for Sample collected between 2008 and 2012. The Structured Clinical Interview for DSM-IV-TR for Axis I Disorders-Patient edition (SCID-I; First, Spitzer, Gibbon, & Williams 2002) and the SCID-II (First, Gibbon, Spitzer, Williams, & Benjamin, 1997) were used to obtain diagnoses and personality characteristics during the interviews that were conducted between the years 2008 and 2012. The SCID-1 is widely used (Shear et al., 2000; Steiner, Tebes, Sledge, & Walker, 1995) on multiple types of samples (i.e. male and female community, psychiatric and offender; Steadman, Robbins, Islam, & Osher, 2007; Trestman, Ford, Zhang, & Wiesbrock, 2007; Zanarini & Frankenburg, 2001), with good to excellent reliability (Lobbestael, Leurgans, & Arntz, 2010; Williams et al., 1992; Zanarini et al., 2000; Zanarini & Frankenburg, 2001) and validity (Fennig, Craig, Tanenberg-Karant, & Bromet, 1994). Additionally, the SCID-I compares favourably to diagnoses made by psychiatrists in terms of sensitivity (.50-1.00), specificity (.94-1.00), and agreement ($k$ = .66 - .90; Fennig et al., 1994).

Assessments were conducted by trained research assistants and elicited an excellent inter-rater agreement for MMD diagnoses ($n$ = 41, kappa = .93).

Criminal history

Criminal history was obtained from official police records with the Royal Canadian Mounted Police (RCMP), for both samples of inmates. Of the 495 inmates from the 1988 sample, only 460 inmates complete criminal history data was obtained. Within that group, 100 (21.7%) had been convicted of at least one homicide-related crime. Whereas, for data collected between 2008 and 2012, 55 (9.8%) of the 563 inmates were convicted of a homicide-related crime. For the present study, homicide-related crime includes first- or second-degree murder, manslaughter, and attempted homicide.

Statistical Analyses. Federally imprisoned profiles generated through multiple correspondence analysis (MCA), which is an extension of the simple correspondence analysis when more than two variables are entered into the equation (Benzécri, 1973; Greenacre, 1984; Greenacre & Blasius, 2006). A MCA is used to detect underlying structures in a data set by grouping data as points in a low-dimensional Euclidean space. The results of a MCA closely resemble those of a principle component analysis (PCA); however, the MCA utilizes categorical data and is based on a non-linear approach.

Before being able to proceed with a MCA, the results from each participant variable must be coded in a binary mode to create an indicator matrix (Greenacre, 2007). For example the variable 'homicide' which was initially coded as 'absent = 0; present = 1" now becomes 'absence of homicidal behaviour: yes = 0; no = 1' and presence of homicidal behaviour: yes = 1; no = 0'. The rows represent the participants and the

columns represent the different modalities of response (Le Roux & Rouanet, 2004). Therefore, we no longer describe the data as variables, but as profile variables and participant variables, which in binary mode aid to create profiles for a given population. Analysis of the disjunctive table makes it possible to gather a direct representation of individuals as points in geometric space. Associations are then calculated using the chi-squared distance between the different categories of variables and participants' responses. Oppositions between rows and columns are maximized to then uncover the underlying dimensions with the largest opposition in the dataset. In the MCA, the first dimension revealed is the most important, because of the largest amount of inertia, followed by the second and so on. The characteristics of inertia in MCA are similar to what variance represents in PCA; however, its main purpose in a MCA is as an indicator of the number of axes (dimensions) to retain for further analysis.

The MCA is often complemented by a hierarchical clustering analysis in order to group together individuals who present with similar characteristics. This is established through the classification of coordinates which were produced through the manipulation of raw data during the MCA procedure. The clustering takes into consideration those coordinates who group together and who distance themselves from the average of the overall sample. Therefore, Ward's hierarchical clustering method was applied to produce inmate profiles, given that it has been shown to yield a minimum loss of inertia (Greenacre, 1988). Within the hierarchical analysis, a dendrogram is produced, which is a visual aid in determining the number of clusters to be used for further analysis. All

multiple correspondence and hierarchical analyses were performed using SAS for Windows version 9.4 (SAS Institute Inc. 2006) and IBM SPSS Statistics for Windows version 24.0 (IBM Corp, 2016).

## Results

### Sample description of federal inmates from 1988

Of the 460 inmates with complete criminal history data, 100 inmates had been convicted of at least one count of homicide or attempted homicide, which translates to almost 22% percent (21.7%) of the sample. The homicide offenders were similar to those who had never committed a homicide-related offence except for age. The homicide offenders were, on average, older ($M$ = 35 years, SD = 9.21years) than those who had never been convicted of a homicide-related crime ($M$ = 30.5 years, SD = 8.24 years) [$t(458) = -4.733, p \leq .000$].

### Sample description of federal inmates from 2008 to 2012

Of the 563 inmates with complete data, 55 inmates had been convicted of at least one count of murder or attempted murder, which translates to almost 10 percent (9.8%) of the total sample. The homicide offenders were similar to the non-homicide offenders in regard to age at the time of interview, education, and relationship status.

MMD for homicidal inmates

Thirty-six of the 100 inmates in 1988 who had been convicted of a homicide-related crime were also diagnosed with a MMD. A Pearson chi-squared test was conducted to examine whether a significant difference of MMD diagnoses exists between those who committed or attempted to commit homicide. The results revealed that there was in fact a significant difference in rate of MMD diagnosis between the two groups ($x^2 = (1, N = 460)\ 7.174, p \leq .007$). Therefore, those serving a sentence in 1988 and who had been convicted of a homicide-related crime (36%) did exhibit significantly higher rates of MMD than those who did not commit or attempt to commit homicide (22.8%). Similar results were produced when analyzing the diagnosis of schizophrenia specifically, as those who had committed a homicide-related crime (12%) had higher rates of schizophrenia than those who had never committed a homicidal crime (5%; $x^2 = (1, N = 460)\ 5.627, p \leq .018$).

Eighteen of the 55 inmates from 2008-2012, who had been convicted of a homicide-related crime were also diagnosed with a MMD. Results revealed however that there was no significant difference in rate of MMD diagnosis between the two groups ($x^2 = (1, N = 563)\ .274, p = .600$). Therefore, those incarcerated between 2008 and 2012 and who were convicted of a homicide-related crime (32.7%) did not exhibit significantly higher rates of MMD than those who did not commit or attempt to commit homicide (29.3%; also reported in Vracotas & Côté, 2017). When specifically investigating the lifetime prevalence of schizophrenia spectrum disorders, no difference

among groups was observed ($x^2 = (1, N = 563)\ 1.441$, $p = .230$). In fact, those who had committed a homicide-related crime had no cases of schizophrenia spectrum disorders.

Dimensions of psychosocial characteristics for offenders

Using the Scree test criterion, MCA results yielded a two-dimensional solution for both samples of inmates.

For the first sample collected in 1988, the two dimensions explained 71.98% of the inertia (Greenacre adjusted inertia): the first dimension reflects characteristics typical of juvenile delinquency and adult antisocial behaviour (63.92%), while the second dimension is described more by criminal history (8.06%). The first dimension discriminates between those who were never arrested or involved in fighting as a minor and who do not exhibit antisocial characteristics as an adult and those who do exhibit theses juvenile delinquent behaviours and ASPD characteristics (see Table 3). The second dimension plots those who are highly criminalized (30+ non-violent crimes; this category ranges from 30 to 184 crimes) but who are not violent to those who have only committed one violent criminal act (see Table 3).

For the sample collected between 2008 and 2012, the two dimensions explained 87.77% of the inertia (Greenacre adjusted inertia): the first dimension reflects characteristics typical of antisocial behaviour (85.71%), while the second dimension is described by mental illness and criminal history (2.06%). The first dimension

discriminates between those who exhibited juvenile delinquency, antisocial characteristics and many non-violent crimes (30+, this category ranges from 30 to 334 crimes) as an adult, and those who did not (see Table 4). The second dimension discriminates between those who did not commit any violent crimes, but did commit a moderate amount of non-violent crimes (10 to 29 non-violent crimes) to those who have a mood disorder and who committed some violent crimes (one to six violent crimes), yet did not commit any non-violent crimes (see Table 4).

Table 3

*Contributions and positions for two dimensions - 1988*

| Dimension 1 | | | Dimension 2 | | |
|---|---|---|---|---|---|
| Profile variable | Contribution | Position | Profile variable | Contribution | Position |
| No ASPD Diagnosis | 15.7% | .96 | No non-violent crimes | 28.3% | 1.64 |
| Never arrested as a minor | 13.8% | .97 | No violent crimes | 22.4% | -1.21 |
| ASPD diagnosis | 10.0% | -.61 | 1 violent crime | 17.4% | 1.13 |
| Often got into fights as a minor | 10.0% | -1.01 | 30+ non-violent crimes | 12.5% | -1.43 |
| No substance problems | 7.8% | .93 | | | |
| Arrested as a minor | 7.0% | -.49 | | | |
| Never got into fights | 7.0% | .53 | | | |
| Impulsivity | 5.2% | -.53 | | | |

Table 4

*Contributions and positions for two dimension - 2008-2012*

| Dimension 1 | | | Dimension 2 | | |
|---|---|---|---|---|---|
| Profile Variable | Contribution | Position | Profile Variable | Contribution | Position |
| No ASPD Diagnosis | 14.6% | 1.16 | Mood disorder diagnosis | 18.4% | .92 |
| No substance problems | 10.1% | 1.18 | No non-violent crimes | 14.7% | 1.74 |
| No juvenile delinquency | 9.5% | .77 | 10-29 non-violent crimes | 14.2% | -.79 |
| Juvenile delinquency | 8.9% | -.72 | No violent crimes | 11.9% | -.96 |
| Impulsivity | 8.5% | -.81 | 1-6 violent crimes | 8.6% | .52 |
| ASPD diagnosis | 7.1% | -.57 | Single | 7.5% | .45 |
| Cruelty towards others | 6.6% | -1.10 | Relationship | 7.3% | -.44 |
| 30+ non-violent crimes | 6.3% | -.77 | No mood disorder | 7.3% | -.36 |
| No Impulsivity | 5.4% | .52 | 30+ non-violent crimes | 5.0% | .45 |
| 1-9 non-violent crimes | 4.5% | .67 | | | |

Psychosocial profiles of offenders in 1988

Once the dimensions had been identified, the hierarchical clustering analysis yielded four distinct profiles of incarcerated men for the sample collected in 1988. The

Dendrogram allows for a visual representation of the four clusters (see Figure 1). Table 5 presents the four clusters and the percentage in each group.

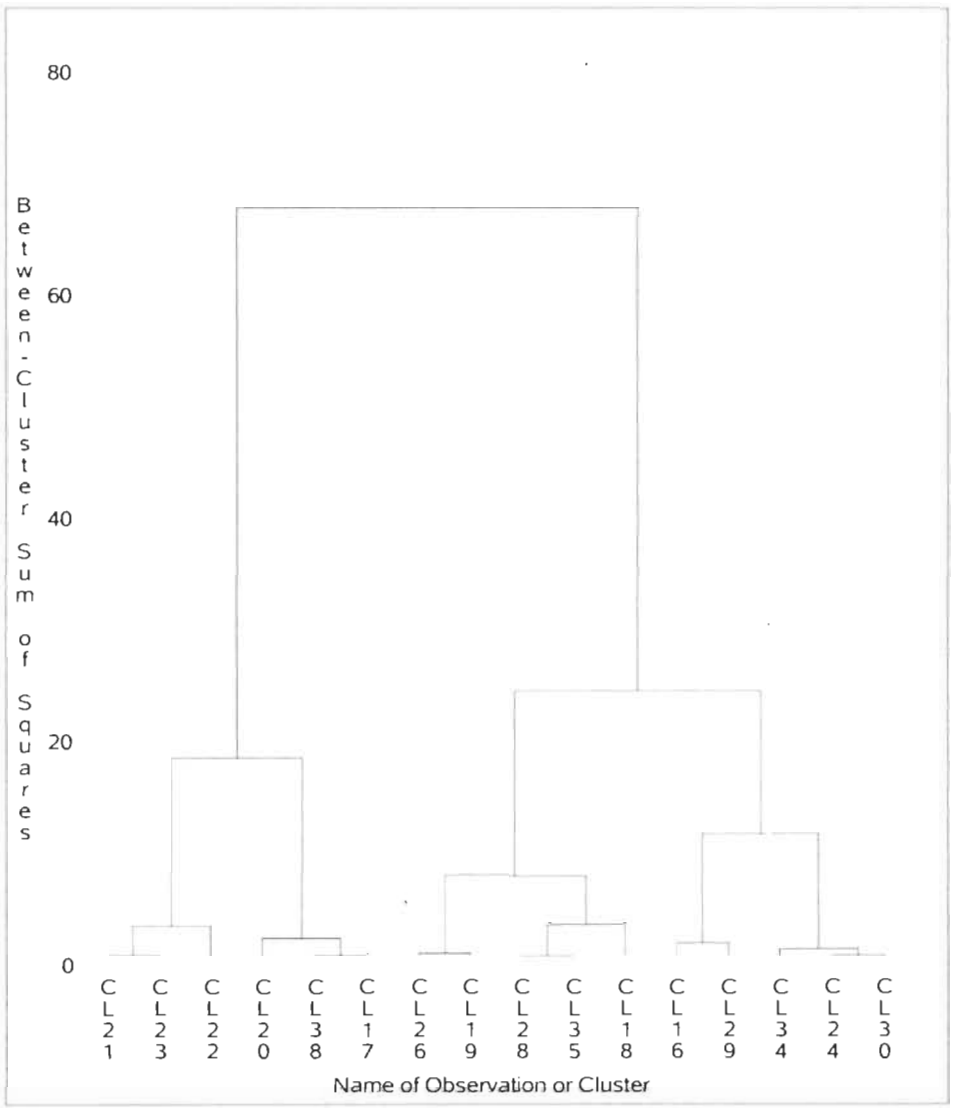


*Figure 1*. Dendrogram for data from 1988.

Table 5

*Psychosocial criminal profiles for inmates in 1988*

| | | Non-violent delinquent ($n$ = 125) | | Psychologically unstable & moderately violent ($n$ = 153) | | Well-adjusted & non-violent ($n$ = 83) | | Mood disordered homicide ($n$ = 77) | |
|---|---|---|---|---|---|---|---|---|---|
| Psychosocial Characteristics | Overall (%) | Profile (%) | Value test | Profile (%) | Value test | Profile (%) | Value test | Profile (%) | Value test |
| Arrested as a minor | 66.4 | **88.8** | **6.26** | **91.5** | **8.14** | 25.3 | -8.80 | 24.7 | -8.53 |
| Never arrested as a minor | 33.6 | 11.2 | -6.25 | 8.5 | -8.13 | **74.7** | **8.81** | **75.3** | **8.54** |
| Often got into fights as a minor | 22.1 | 15.2 | -2.20 | **48.4** | **9.68** | .0 | -5.39 | 5.2 | -3.94 |
| Occasionally got into fights | 21.2 | 21.6 | .12 | **28.7** | **2.82** | 4.8 | -4.05 | 23.4 | .51 |
| Never got into fights | 56.7 | 63.2 | 1.76 | 22.9 | -10.42 | **95.2** | **7.87** | **71.4** | **2.89** |
| Diagnosed ASPD | 61.0 | **76.0** | **4.08** | **95.4** | **10.83** | 10.8 | -10.38 | 22.1 | -7.69 |
| No ASPD diagnosis | 39.0 | 24.0 | -4.07 | 4.6 | -10.82 | **89.2** | **10.39** | **77.9** | **7.70** |
| Diagnosed substance problems | 79.7 | 82.4 | .90 | **96.7** | **6.50** | 48.2 | -7.90 | 75.3 | -1.04 |
| No substance problems | 20.3 | 17.6 | -.89 | 3.3 | -6.49 | **51.8** | **7.91** | 24.7 | 1.05 |
| Impulsivity | 41.6 | 27.2 | -3.84 | **72.5** | **9.64** | 19.3 | -4.56 | 27.3 | -2.79 |
| No Impulsivity | 58.4 | **72.8** | **3.85** | 27.5 | -9.63 | **80.7** | **4.57** | **72.7** | **2.80** |
| Diagnosed major mood disorder | 14.6 | 12.0 | -.97 | 16.3 | .75 | 8.4 | -1.76 | **22.1** | **2.05** |
| | 85.4 | 88.0 | .98 | 83.7 | -.74 | 91.6 | 1.77 | 77.9 | -2.04 |

No major mood disorder

Table 5

*Psychosocial criminal profiles for inmates in 1988 (continued)*

| | | Non-violent delinquent ($n$ = 125) | | Psychologically unstable & moderately violent ($n$ = 153) | | Well-adjusted & non-violent ($n$ = 83) | | Mood disordered homicide ($n$ = 77) | |
|---|---|---|---|---|---|---|---|---|---|
| Psychosocial Characteristics | Overall (%) | Profile (%) | Value test | Profile (%) | Value test | Profile (%) | Value test | Profile (%) | Value test |
| Diagnosed psychotic disorder | 6.6 | .8 | -3.09 | **15.0** | **5.19** | .0 | -2.69 | 6.5 | -.04 |
| No psychotics disorder | 93.4 | **99.2** | **3.10** | 85.0 | -5.18 | **100.0** | **2.70** | 93.5 | .05 |
| No violent crimes | 22.4 | **40.0** | **5.59** | .7 | -7.98 | **56.6** | **8.31** | .0 | -5.18 |
| 1 violent crime | 19.6 | 5.6 | -4.66 | 15.7 | -1.52 | 4.8 | -3.80 | **66.2** | **11.33** |
| 2-6 violent crimes | 40.6 | 36.8 | -1.03 | **64.7** | **7.51** | 18.1 | -4.64 | 23.4 | -3.39 |
| 7+ violent crime | 17.4 | 17.6 | .09 | 18.9 | .65 | 20.5 | .84 | 10.4 | -1.77 |
| No non-violent crimes | 15.3 | .0 | -5.61 | 13.1 | -.94 | .0 | -4.29 | **61.0** | **12.27** |
| 1-2 non-violent crimes | 25.1 | 21.6 | -1.07 | 17.7 | -2.63 | **48.2** | **5.38** | 20.8 | -.96 |
| 3-9 non-violent crimes | 29.9 | 36.0 | 1.76 | **39.2** | **3.12** | 21.7 | -1.81 | 10.4 | -4.11 |
| 10-29 non-violent crimes | 20.8 | 25.6 | 1.58 | **26.1** | **2.03** | 15.7 | -1.27 | 7.8 | -3.08 |
| 30+ non-violent crimes | 8.9 | **16.8** | **3.67** | 3.9 | -2.67 | 14.4 | 1.98 | .0 | -3.01 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Single | 58.7 | 55.6 | -.93 | 60.8 | .66 | 47.0 | -2.39 | **72.7** | **2.76** |
| Relationship | 41.3 | 44.8 | .94 | 39.2 | -.65 | **53.0** | **2.40** | 27.3 | -2.75 |
| | | | | | | | | | |
| Committed homicidal crime | 21.5 | 13.6 | -2.52 | 20.9 | -.20 | 6.0 | -3.80 | **52.0** | **7.17** |
| Never committed homicidal crime | 78.5 | **86.4** | **2.53** | 79.1 | .21 | **94.0** | **3.81** | 48.0 | -7.16 |

The first profile presented is labeled the 'non-violent delinquent', who exhibits antisocial personality and a history of arrests as a minor. This profile is highly characterized by non-violent criminal acts, and no violent criminality. Individuals in the second profile labeled 'psychologically unstable and moderately violent' are characterized by comorbid diagnoses of antisocial disorder, psychotic disorders, and substance use disorders, while exhibiting a history of juvenile delinquency and impulsivity. These individuals are moderately violent and criminalized. Individuals in the third profile, labeled the 'well-adjusted and non-violent' have never been diagnosed with a psychiatric problem and were in committed relationships prior to committing the offence. These inmates, however, committed one or two non-violent crimes. Lastly, is the 'mood disordered homicide' profile, these individuals are stable in terms of personality, though, have a significant amount of major mood disorder. These inmates have no history of non-violent crime and have only committed one violent crime, which is thought to be the high percentage of homicide exhibited in this profile (52%). The distribution of homicidal inmates represented within each profile is presented in Table 6.

Psychosocial profiles of offenders from 2008 to 2012

Once the two dimensions had been identified, the hierarchical cluster analysis yielded five distinct profiles of psychosocial characteristics for the offenders from the sample of inmates interviewed between 2008 and 2012. The Dendrogram is presented in Figure 2. The five profiles are presented in Table 7.

Table 6

*The distribution of homicide among profiles*

| 1988 | | 2008 to 2012 | |
|---|---|---|---|
| Profile | Homicide $n = 94$ (%) | Profile | Homicide $n = 55$ (%) |
| Non-violent delinquent | 17 (18.1) | Late starter and moderately criminalized | 12 (21.8) |
| Psychologically unstable and moderately violent | 32 (34.0) | Psychologically unstable and highly violent | 9 (16.4) |
| Well-adjusted and non-violent | 5 (5.3) | Well-adjusted and non-violent | 5 (9.1) |
| Mood disordered homicide | 40 (42.5) | Highly violent and antisocial | 11 (20.0) |
| | | Mood disordered homicide | 18 (32.7) |

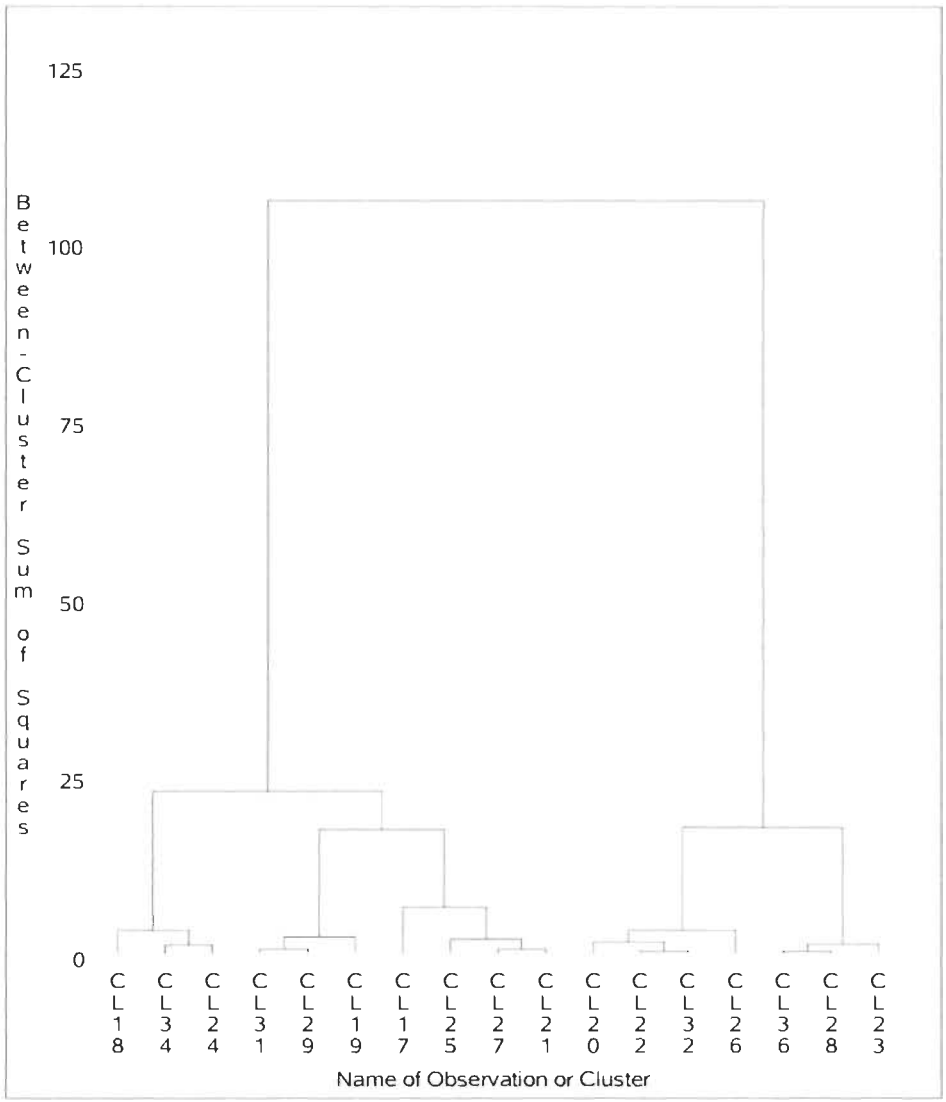


*Figure 2*. Dendrogram for data from 2008 to 2012.

Table 7

*Psychosocial criminal profiles for inmates from 2008 to 2012*

| | | Late starter & moderately criminalized ($n$ = 112) | | Psychologically unstable & highly violent ($n$ = 141) | | Well-adjusted non-violent ($n$ = 101) | | Highly violent & antisocial ($n$ = 117) | | Mood disordered murderer ($n$ = 77) | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Psychosocial Characteristics | Overall (%) | Profile (%) | Value test | Profile (%) | Value test | Profile (%) | Value test | Profile (%) | Value test | Profile (%) | Value test |
| Conduct disorder | 51.6 | 36.6 | -3.56 | **86.5** | **9.61** | 5.0 | -10.38 | **90.6** | **9.50** | 11.70 | -7.56 |
| No conduct disorder | 48.4 | **63.4** | **3.57** | 13.5 | -9.60 | **95.0** | **10.39** | 9.4 | -9.49 | **88.30** | **7.57** |
| Diagnosed ASPD (Adult) | 67.2 | **78.6** | **2.89** | **98.6** | **9.22** | 15.8 | -12.14 | **100.0** | **8.53** | 10.40 | -11.42 |
| No ASPD (Adult) diagnosis | 32.8 | 21.4 | -2.88 | 1.4 | -9.21 | **84.2** | **12.15** | .0 | -8.52 | **89.60** | **11.43** |
| Diagnosed substance problems | 78.1 | 83.0 | 1.42 | **99.3** | **7.06** | 44.6 | -9.01 | **95.7** | **5.20** | 49.40 | -6.57 |
| No substance problems | 21.9 | 17.0 | -1.41 | .7 | -7.05 | **55.4** | **9.02** | 4.3 | -5.19 | **50.60** | **6.58** |
| Exhibits cruelty towards others | 16.4 | 2.7 | -4.39 | **29.8** | **4.97** | .0 | -4.92 | **38.5** | **7.25** | .00 | -4.19 |
| No cruelty towards others | 83.6 | **97.3** | **4.40** | 70.2 | -4.96 | **100.0** | **4.93** | 61.5 | -7.24 | **100.00** | **4.20** |
| Impulsivity | 39.1 | 31.3 | -1.89 | **67.4** | **8.00** | .0 | -8.89 | **70.1** | **7.76** | 2.60 | -7.06 |
| No Impulsivity | 60.9 | 68.7 | 1.90 | 32.6 | -7.99 | **100.0** | **8.90** | 29.9 | -7.75 | **97.40** | **7.07** |
| Diagnosed major mood disorder | 28.3 | 20.5 | -2.03 | **60.3** | **9.79** | 5.0 | -5.75 | 4.3 | -6.49 | **48.10** | **4.16** |
| No major mood disorder | 71.7 | **79.5** | **2.04** | 39.7 | -9.78 | **95.0** | **5.76** | **95.7** | **6.50** | 51.90 | -4.15 |

Table 7

*Psychosocial criminal profiles for inmates from 2008 to 2012 (continued)*

| | | Late starter & moderately criminalized ($n$ = 112) | | Psychologically unstable & highly violent ($n$ = 141) | | Well-adjusted non-violent ($n$ = 101) | | Highly violent & antisocial ($n$ = 117) | | Mood disordered murderer ($n$ = 77) | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Psychosocial Characteristics | Overall (%) | Profile (%) | Value test | Profile (%) | Value test | Profile (%) | Value test | Profile (%) | Value test | Profile (%) | Value test |
| Diagnosed psychotic disorder | 2.19 | 3.6 | 1.12 | **5.0** | **2.61** | 1.0 | -.91 | .0 | -1.82 | .00 | -1.41 |
| No psychotics disorder | 97.8 | 96.4 | -1.11 | 95.0 | -2.60 | 99.0 | .92 | 100.0 | 1.83 | 100.00 | 1.42 |
| No violent crimes | 17.0 | 12.5 | -1.41 | 2.8 | -5.18 | **49.5** | **9.64** | 18.8 | .60 | 3.90 | -3.29 |
| 1-6 violent crimes | 41.0 | **51.8** | **2.59** | 42.6 | .42 | 34.7 | -1.44 | 9.4 | -7.84 | **79.23** | **7.34** |
| 7+ violent crime | 42.0 | 35.7 | -1.50 | **54.6** | **3.53** | 15.8 | -5.88 | **71.8** | **7.37** | 16.89 | -4.80 |
| No non-violent crimes | 6.4 | .9 | -2.66 | 1.4 | -2.79 | .0 | -2.90 | .0 | -3.18 | **41.60** | **13.61** |
| 1-9 non-violent crimes | 30.6 | **38.4** | **1.99** | 9.2 | -6.40 | **57.4** | **6.46** | 11.9 | -4.93 | **51.90** | **4.37** |
| 10-29 non-violent crimes | 30.3 | 33.9 | .94 | 12.7 | -5.25 | **39.6** | **2.26** | **57.3** | **7.16** | 3.90 | -6.06 |
| 30+ non-violent crimes | 32.7 | 26.8 | -1.48 | **76.6** | **12.90** | 3.0 | -7.03 | 30.8 | -.49 | 2.60 | -5.43 |
| Elementary school completed | 67.7 | 72.3 | 1.18 | 70.9 | .95 | 55.5 | -2.91 | **82.9** | **3.97** | 48.00 | -3.97 |
| High school completed | 18.2 | 18.8 | .16 | 17.0 | -.43 | **28.7** | **3.02** | 12.8 | -1.71 | 14.30 | -.97 |
| College/university completed | 14.1 | 8.9 | -1.74 | 12.1 | -.79 | 15.8 | .58 | 4.3 | -3.42 | **37.70** | **6.43** |

Table 7

*Psychosocial criminal profiles for inmates from 2008 to 2012 (continued)*

| | | Late starter & moderately criminalized ($n$ = 112) | | Psychologically unstable & highly violent ($n$ = 141) | | Well-adjusted non-violent ($n$ = 101) | | Highly violent & antisocial ($n$ = 117) | | Mood disordered murderer ($n$ = 77) | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Psychosocial Characteristics | Overall (%) | Profile (%) | Value test | Profile (%) | Value test | Profile (%) | Value test | Profile (%) | Value test | Profile (%) | Value test |
| Single | 49.5 | 41.1 | -1.98 | **73.8** | **6.70** | 28.7 | -4.61 | 32.5 | -4.13 | **70.10** | **3.91** |
| Relationship | 50.5 | **58.9** | **1.99** | 26.2 | -6.69 | **71.3** | **4.62** | **67.5** | **4.14** | 29.90 | -3.92 |
| Committed homicidal crime | 10.0 | 10.7 | .27 | 6.4 | -1.67 | 5.0 | -1.88 | 9.4 | -.25 | **23.40** | **4.20** |
| Never committed homicidal crime | 90.0 | 89.3 | -.26 | 93.6 | 1.68 | 95.0 | 1.89 | 90.6 | .26 | 76.63 | -4.19 |

The first inmate profile developed is the 'late starter and moderate criminal' who scores highly as an antisocial adult yet does not exhibit a history of conduct disorder and is otherwise highly relational. This profile however is known for moderate amounts of violent and non-violent criminal offences. The second profile is the 'psychologically unstable and highly violent' offender. These individuals are diagnosed with conduct, antisocial, substance, and major mood disorders. They also scores highly on impulsivity and cruelty towards others, and have committed the most amounts of violent and non-violent criminal acts. The third profile is labeled the 'well-adjusted and non-violent' inmate. These inmates are highly criminalized, moderately educated and were in committed relationships. The fourth profile is labeled the 'highly violent and antisocial' criminal. These individuals were in relationships but had very little education, and scored highly on all aspects of personality and conduct profile variables. These individuals never suffered any MMD. They are also characterized by a long history of violent and non-violent criminal acts. Lastly, the 'mood disordered homicide' profile is composed of individuals characterized as single and highly educated. These inmates have suffered with a lifetime of major mood disorder; however no one in this profile has ever experience a psychotic disorder. Inmates in this profile are characterized as moderately violent and have committed no to low amounts of non-violent offences. Homicide is statistically more present in this profile. The distribution of homicidal inmates represented within each profile is located in Table 6.

Profiles for which homicide is significantly included

Over half (52%) the inmates within the fourth profile ($n = 77$) from the sample collected in 1988 were convicted for a homicide-related crime, which translates into 42.5% of all homicidal inmates. This cluster was named the 'mood disordered homicide' profile. Individuals who are included in this cluster are described as having suffered a major mood disorder at one time or another in their life. They are single, controlled, non-delinquent or antisocial, and did not have a history of any non-violent crimes. However, they did commit one violent crime, which is thought to be either a homicide or an attempted homicide.

For those who were interviewed between 2008 and 2012, the fifth cluster ($n = 77$) included the highest amount of the inmates who had committed a homicide-related crime (32.7%) from the total sample, with 23.4% of the inmates within the fifth profile classified as homicidal. This profile was also labeled the 'mood disordered homicide' and was also characterized by well-adjusted personality types, who have suffered with major mood disorders in their lifetime. However, these inmates are single and highly educated. Individuals in this cluster are characterized as having a longer history of violent (one to six convicted of violent offences) and non-violent convictions (zero to nine convicted of non-violent offences). What is significant to note is that no profile within the 2008 to 2012 analyses produced such highly significant prevalence of homicide as in the 'mood disordered homicide' profile from 1988, with 52% of inmates from that profile having committed a homicide-related crime.

## Discussion

In the past homicidal inmates exhibited significantly higher rates of MMD, when compared to those who had never committed a homicide (Côte & Hodgins, 1992). However, we now know that these rates have changed over time and while analyzing the difference in prevalence rates on a linear basis, it appears that there are no longer significant differences between inmates convicted of homicidal crime and those who have never been convicted of a homicidal crime (Vracotas & Côté, 2017). However, homicide is a complex phenomenon especially in light of the application of amendments made to the Criminal Code, where it has now become more favourable for those suffering from the most serious MMD to orientate towards the Review Board for Mental Disorder after committing a seriously violent crime, such as homicide. Therefore, in order to fully understand the complexity of homicidal inmate during two time periods representing pre- and post- significant legislative changes in the Canadian Criminal Code regarding mental disorders provisions, it seems more relevant to utilize a non-linear statistical method to fully grasp subgroups present during these two time periods.

Moving forward and considering the lowering of homicidal inmates in comparison to non-homicidal inmates, the current study aimed to investigate further possible changes to the population of incarcerated inmates convicted of homicide by analyzing profiles that distance themselves from the mean of the average inmate, with the hypothesis that those currently serving a sentence in federal corrections and who have committed homicide-related crimes will present with a psychosocial profile more closely

related to that of the average career criminal. Whereas, those who had committed a homicide-related crime and who were serving a sentence prior to the amendments to the Criminal Code were most probably members of a psychosocial profile characterized by unstable mental illness, i.e. that the homicidal acts committed by these individuals were not part of a profile characterized by criminality and delinquency, but that the MMD may have been the influencing factor in the homicidal act. In non-linear statistical sense, a profile characterized by homicide prior to the amendments to the Criminal Code would be located at a farther distance from the mean of other criminal profiles.

For the over-all sample collected in 1988, four distinct profiles were identified: (1) a 'non-violent delinquent' criminal profile; (2) a 'psychologically unstable and moderately violent' criminal profile; (3) a 'well-adjusted and non-violent' criminal profile; and lastly, (4) a 'mood disordered homicide' profile.

For the sample collected between the years 2008 and 2012, five profiles were identified: (1) a 'late starter moderately criminalized' profile; (2) a 'psychologically unstable and highly violent' criminal profile; (3) a 'well-adjusted and non-violent' profile; (4) a 'highly violent and antisocial' profile; and finally, (5) a 'mood disordered homicide' profile.

Contrary to the proposed hypothesis, both 'homicide' profiles from 1988 and 2008 to 2012 partially overlap. They are both more likely to include single males who have

stable personalities and a lifetime major mood disorder. In fact, the prevalence of major mood disorders within this profile have elevated throughout the years. In 1988, lifetime major mood disorders represented 22.1% of the 'homicide' profile, whereas in the more recent 'homicide' profile it was found that 48.1% had suffered a major mood disorder at one time or another in their life. While conducting linear analyses, psychotic disorders were identified as the most significant variable associated with homicide for the 1988 sample of homicidal inmates. Though, psychotic disorders were not significantly represented in the 'homicide' profile from this sample (6.5%), and interestingly, psychotic disorders completely disappeared from the 'homicide' profile from 2008 to 2012. There seems to be a shift taking place, where psychotic disorders have practically disappeared and the prevalence for major mood disorders have a little more than doubled for those who had committed a homicide-related crime. This element is yet another indication that those with the most severe and debilitating types of MMD are being displaced possibly through the Review Boards for Mental Disorder, and that even though major mood disorders are considered a MMD, in most cases do not meet the full criteria for a NCRMD defence. Along with this shift in MMD prevalence rates, another significant difference between the two 'homicide' profiles is that the more recent profile is characterized by moderate but substantial amounts of violent (79.23%; one to six violent crimes) and non-violent (zero to nine non-violent) crimes. Due to statistical constraints when creating profile variables, a category for the number of violent crimes had to be developed including one to six violent crimes. To ensure the profile variable for 'one to six' violent crimes did not actually correspond to inmates who only

committed one violent crime, a breakdown of the number of crimes was performed. Therefore, of the 79.23%, only 15.6% corresponded to only one violent crime, while 63.6% corresponded to the category of two to six violent crimes. Therefore, a profile which includes current homicidal inmates indicates that these individuals have had a longer and more chronic criminal history. Whereas, the inmates among the 'homicide' profile from 1988 were characterized by having committed only one violent act in their lifetime. Therefore, individuals among the more recent 'homicide' profile have a longer history of criminality, which was the hypothesis proposed. It is quite plausible that the homicidal event included in the 1988 profile may have been in part due to the instability of suffering with a lifetime MMD.

Most research suggested that psychotic disorders were the most predominant MMD associated with homicide offenders (Baillargeon et al., 2009; Côte & Hodgins, 1992). This was not the case for the current study while conducting non-linear analyses. It can be seen that the significant prevalence of psychotic disorders exhibited among those who had committed homicidal crimes while conducting linear analyses had disappeared under non-linear condition. However, there is another profile which is characterized heavily by a diagnosis of a psychotic disorder. Both 'psychologically unstable' profiles from 1988 and 2008 to 2012 were characterized by psychotic and antisocial personality disorders along with a history of juvenile delinquency. Interestingly, there is a shift in this profile as well. Over the years, the rates of psychotic disorder decreased (from 15% to 5%) and major mood disorder became a more prominent profile variable (60.3%).

Along with the shift towards major mood disorder being the major disorder for this profile, the quantity of violent and non-violent criminal acts increased as well. This profile was always violent and criminalized and has become even more violent and criminalized; however, only in few cases did the violence go as far as a homicide. In fact, within the profile from 1988, 34% of individuals had committed a homicide-related crime, whereas, in the more current 'psychologically unstable and violent' profile, only 16.4% committed a homicide-related crime. This observation indicates a reduction of homicidal offences among this profile type. It is possible that while conducting linear analyses, individuals in this profile have dominated results due to elevated rates of psychosis in the past, even though only a small percentage of individuals in that profile had committed a homicide-related crime. These results argue for the existence of two distinct groups of mentally disordered inmates. In 1988, one was dominated by psychotic disorders ('psychologically unstable and moderately violent' profile) and the other was dominated by mood disorders ('mood disordered homicide' profile). In the more current sample there is evidence of two mentally disordered profiles as well. However, both are heavily dominated by major mood disorder while the 'psychologically unstable and violent' profile is also characterized with some psychotic disorder.

In terms of the profiles with the highest amount of violence, it is not surprising that both profile two ('psychologically unstable and highly violent' criminal profile) and four ('highly violent and antisocial' criminal profile) from 2008 to 2012 had the most violent

and non-violent convictions, given that inmates in those two profiles adhere to both conduct disorder and adult ASPD. Mueser and colleagues (2006) found that those with both child onset and adult characteristics of the personality disorder were found to have the most criminal justice involvement, especially with respect to violence charges and convictions, when compared to others who either only had conduct disorder, ASPD or nothing at all. Although similar in some respect, these two groups differ greatly. One is highly unstable in term of psychological wellbeing. Characterized by a lifetime of MMD and a long history of violence and crime, they most probably behaved in this way due to a lifetime of mental instability and lack of control due to their dual diagnoses of a mental and antisocial disorder. Inmates in the 'highly violent and antisocial' profile, on the other hand, seem more characteristically psychopath. Psychopaths are usually described by their violent tendencies, history of offences, and impulsive reactions to frustrating situations (Hare, 1981; Hare & McPherson, 1984; Serin, 1991). It is important to note that within the scope of the present study, psychopathy assessments were not conducted. However, given the significantly high percentages within this cluster on profile variables, one can postulate that a new distinct profile has emerged since 1988. This profile is characterized by conduct, antisocial, and substance disorders, as well as cruelty towards others and impulsivity. Inmates in this profile are uneducated, have not been able to experience disorders associated with emotion, such as depression and were in committed relationships prior to incarceration. When assessing this profile more globally, one may come to the conclusion that this profile more closely describes characteristics of psychopathic inmates. This is not unlikely, as Hare reported that the

prevalence of psychopathy among offenders is usually between 15% and 25% (Hare, 1991) and this profile represents 21% of the total sample. Although, highly violent and cruel, inmates in this profile also rarely went as far as homicide. Williamson, Hare and Wong (1987) proclaim that psychopaths are more likely to commit serious violent assaults and other crimes, and that it is more likely that a non-psychopath would commit homicide. This seems to be the case for both our 1988 and 2008 to 2012 'homicide' profiles who do not exhibit any psychopathic traits.

A benefit of developing profiles of inmates with the aim of analyzing subgroups of homicidal offenders among two time periods is being able to obtain a visual representation of the distribution of homicidal inmate within these profiles developed. What was most interesting is that even though there was only one profile among each time period for which homicide was significant, there was a distinct spread within each time frame. In 1988, homicide was most apparent in the 'mood disordered homicide' as well as the 'psychologically unstable and violent' profile. In fact, never committing or attempting to commit a homicide was significantly part of the other two profiles ('non-violent delinquent', and the 'well-adjusted and non-violent' criminal profile). Whereas in 2008 to 2012, homicide seems to be spread throughout the profiles, with maybe the exception of the 'well-adjusted and non-violent' profile (5%) and the 'psychologically unstable' (6.4%) which are both under the sample mean (10%). Diminishing homicide rates in Canada and increased use of the NCRMD defence are possible causes of the low prevalence rates within these profiles.

Strengths and limitations

The present study is novel as it takes into consideration legislative reform in the past few decades. This is the first study to have identified profiles of incarcerated offenders, pre- and post-amendments to the Canadian Criminal Code, with the specific purpose of investigating change in characteristics of individuals who committed homicide-related crimes. The sample sizes for both samples of inmates were quite large, and were a good representation of homicidal individuals in corrections for the periods for which data were collected. The majority of the interviews for the most current database were conducted by highly trained clinicians with expertise in the field, which is most probably why excellent inter-rater reliability was observed. However, the sample collected in 1988 were interviewed by research assistants less specialized due to the utilization of the DIS, which was developed to be administer by lay interviewers. Also, ideally the same diagnostic evaluations should have been used on both samples of inmates for better comparisons of profile variables. For example, in the 1988 database, the use of two questions from the DIS regarding arrests and fighting as a minor were used to evaluate juvenile delinquency while in the 2008 to 2012 database the SCID-II provided the category of conduct disorder which is part of the antisocial personality disorder evaluation, which was used as an indication of juvenile delinquency. Additionally, the same is true for the evaluation of psychotic disorders. The DIS does not distinguish between different forms of psychotic disorders, grouping them into a schizophrenia spectrum diagnosis (not including schizoid and schizotypal personality disorders), while

at the same time not formulated to evaluate delusional disorder fully. The SCID-I evaluates every type of psychotic disorder separately.

Even though both samples are from the same type of population, they were still not identical in the sense that, in 1988, inmates who were already serving their sentence were approached to participate. Whereas, for the sample collected between 2008 and 2012, only newly admitted offenders were interviewed. Therefore, the latter sample may have had a lower homicide rate for this reason. However, the fact that the one sample included inmates already serving their sentence while the other included newly admitted inmates should not have had an effect on inmates' psychosocial profiles because the variables chosen for inclusion in the analysis are not often malleable and do not fluctuate much over time.

In terms of generalizability, it is not believed that the results of the current studies reflect correctional populations in other countries. Although it is possible, that other countries that have the same type of judicial structure as Canada could exhibit the similar trends. It is believed however that other provinces within Canada may exhibit the same results. It would be highly interesting for future studies to evaluate MMD prevalence rates and develop inmate profiles in correctional settings across Canada. As it is believed that if the amendments made to the Canadian Criminal Code are responsible for the shift in psychological status of current inmates, then these finding should be generalizable across provinces.

In conclusion, while studying complex issues requiring the analyses of inter playing profile variables, a non-linear statistical analysis produces more refined results. Hence, the current results argue for the existence of two distinct profiles of mentally disordered inmates. The one profile which is highly violent and criminalized, but not homicidal; in fact, prevalence of homicide seems to be diminishing within this profile. The other is characterized as homicidal, yet, more stable in terms of personality.

Another innovative finding is that inmates from 2008 to 2012 who have committed homicide-related crimes seem to be spread throughout at least three criminal profiles. In 1988, they have been primarily located in two distinct profiles: the 'psychologically unstable but moderately violent' and the 'mood disordered homicide' profile. Partially in line with the hypotheses proposed, the 'homicide' profile from the recently collected sample was significantly more criminalized, violently and non-violently than those who were included in the 'homicide' profile from 1988. Although the homicidal inmates from the current sample are characterized as having committed more violent and non-violent crimes than in those from the past sample, they are not the most criminalized and violent when compared to other profiles of inmates during the same time period. Results showed that in fact the 'psychologically unstable and violent' and the 'highly violent and antisocial' profiles both present as having committed the most violent and non-violent criminal acts. We can assume that this has been influenced by the antisocial aspects of the personality. Those in the more recent sample who were included in the 'mood disordered homicide' profile did not possess antisocial and conduct disorder

characteristics as opposed to what was proposed in the hypothesis. In fact, not having displayed any of the following: conduct disorder, antisocial personality, cruelty towards others, a substance diagnoses, or impulsivity was characteristic of this group. Therefore, having a more "pure" form of a major mood disorder without the dual diagnosis of an antisocial personality makes for a profile history with less violent and non-violent offences; however, the risk of committing a homicide is more likely than any other profile.

It is hypothesized that the most plausible explanation for these shifts in prevalence of MMD among homicidal inmates and change in inmate profiles may be due to amendments made to the Criminal Code of Canada in 1992, as well as, the ruling in the *Winko v. British Columbia* Supreme Court of Canada in 1999 (Vracotas & Côté, 2017). One avenue for future research that could lend strength to this argument would be to examine characteristics of homicidal individuals found NCRMD. If those found NCRMD present with characteristics that closely resemble the 'homicide' profile from 1988 then the explanatory hypothesis that changes to the Criminal Code are responsible for the current results is more plausible. The fact that some of the more severe forms of MMD may be directed towards the Review Boards for Mental Disorder could be considered as an indication that the judicial system has adapted and is working to meet the psychological needs and uphold the rights of offenders suffering with the most severe and debilitating mental illnesses, such as psychotic disorders.

Given changes made to laws governing accused with mental illness, some past research cannot be replicated without amending the study design in order to compensate for accused that have been redirected to the Review Boards for Mental Disorder. This makes research trying to link MMD and homicide more complex to study than it once was. Although MMD is still a factor in a profile highly characterized by violence and criminality, a conclusion cannot be made within the scope of the present study that those with MMD are at higher risk for committing homicide, especially with regards to psychotic disorders. Indicating that the reform to the Criminal Code law has favoured those most debilitated by MMD, and has identified a profile which includes other MMD for which the NCRMD defence does not apply. While still relevant for their time, studies conducted in the past linking homicide and MMD (Côté & Hodgins, 2003; Hodgins, 2001) in correctional settings can no longer be used as they once were. Due to the fact that there is no longer high prevalence rates for MMD among homicide offenders in the correctional setting and in fact some types of MMD have completely disappeared among homicidal inmates. However, presently, major mood disorders are still part of a profile characterized by homicidal crime. Given the fact that laws and regulations have changed in the past couple of decades, which may have affected the types of observations made in past research, future studies should include samples of patients committed to forensic psychiatric institutions to be able to keep this line of research current.

## References

American Psychiatric Association. (1980). DSM-III: *Diagnostic and statistical manual of mental disorders* (3e éd.). Arlington, VA: Author.

Baillargeon, J., Binswanger, I. A., Penn, J. V., Williams, B. A., & Murray, O. J. (2009). Psychiatric disorders and repeat incarcerations: The revolving door. *American Journal of Psychiatry, 166,* 103-109.

Beaudette, J. N., & Stewart, L. A. (2016). National prevalence of male disorders among incoming Canadian male offenders. *Canadian Journal of Psychiatry, 61*, 624-632.

Benzécri, J. P. (1973). *L'analyse des données : l'analyse des correspondances.* Paris, France : Dunod.

Brink, J. H., Doherty, D., & Boer, A. (2001). Mental disorder in federal offenders: A Canadian prevalence study. *International Journal of Law and Psychiatry, 24*, 339-356.

Canadian Institute for Health Information. (2008). *Improving the health of Canadians: Mental health, delinquency and criminal activity.* Ottawa, ON: Canadian Institute for Health Information.

Côté, G., & Hodgins, S. (1992). The prevalence of major mental disorders among homicide offenders. *International Journal of Law and Psychiatry, 15*, 89-99.

Côté, G., & Hodgins, S. (2003). Les troubles Mentaux et le comportement criminel. In M. Le Blanc, M. Ouimet, & D. Szabo (Eds), *Traité de criminologie empirique, 3rd ed.* (p. 503-548). Montréal, QC : Bibliothèque Nationale du Canada.

Crocker, A. G., Nicholls, T. L., Seto, M. C., Côté, G., Charette, Y., & Caulet, M. (2015). The national trajectory project of individuals found not criminally responsible on account of mental disorder in Canada. Part 1: Context and methods. *Canadian Journal of Psychiatry, 60,* 98-105.

Criminal Code of Canada, R.S.C., 1992, c. C-46.

Eaton, W. W., Dryman, A., Sorenson, A., & McCutcheon, A. (1989). DSM-III major depressive disorder in the community: A latent class analysis of data from the NIMH epidemiological catchment area program. *British Journal of Psychiatry, 155,* 48-54.

Erb, M., Hodgins, S., Freese, R., Müller-Isberner, R., & Jöckel, D. (2001). Homicide by persons with schizophrenia before and after deinstitutionalization. *Criminal Behaviour and Mental Health, 11,* 6-26.

Escobar, J. I., Randolph, E. T., Asamen, J., & Karno, M. (1986). The NIMH-DIS in the assessment of DSM-III schizophrenia disorder. *Schizophrenia Bulletin, 12,* 187-193.

Fazel, S., & Danesh, J. (2002). Serious mental disorder in 23 000 prisoners: A systematic review of 62 surveys. *The Lancet, 359,* 545-550.

Fazel, S., & Seewald, K. (2012). Severe mental illness in 33 588 prisoners worldwide: Systematic review and meta-regression analysis. *British Journal of Psychiatry, 200,* 364-373.

Fennig, S, Craig, T. J., Tanenberg-Karant, M., & Bromet, E. J. (1994). Comparison of facility and research diagnoses in first-admission psychotic patients. *American Journal of Psychiatry, 151*(10), 1423-1429.

First, M. B., Gibbon, M., Spitzer, R. L., Williams, J. B. W., & Benjamin, L. S. (1997). *SCID-II Personality Questionnaire.* Washington, DC: American Psychiatric Press.

First, M. B., Spitzer, R. L., Gibbon, M., & Williams, J. B. W. (2002). *Structured clinical interview for DSM-IV-TR for axis I disorders-patient edition.* New York, NY: Biometric Research Department, New York State Psychiatric Institute. (French translation by Lise Bordeleau and Danielle Gangé, membres de l'équipe de l'Unité de recherche en Neuroscience. Le Centre Hospitalier Universitaire de Québec).

Greenacre, M. J. (1984). *Theory and application of correspondance analysis.* London: Academic Press.

Greenacre, M. J. (1988). Clustering the rows and columns of a contingency table. *Journal of Classification 5,* 39-51.

Greenacre, M. J. (2007). *Correspondence analysis in practice* (2nd edition). London: Chapman & Hall/CRC.

Greenacre, M. J., & Blasius, J. (2006). *Multiple correspondence analysis and related methods.* London: Chapman & Hall/CRC.

Hare, R. D. (1981). Psychopathy and violence. In J. R. Hayes, T. K. Roberts, & K. S. Solway (Eds), *Violence and the psychopathy checklist* (p. 53-74). Vancouver, Canada: Department of Psychology, University of British Columbia.

Hare, R. D. (1991). *The Hare Psychopathy Checklist Revised.* Toronto, ON: Multi-Health Systems.

Hare, R. D., & McPherson, L. M. (1984). Violent and aggressive behaviour by criminal psychopaths. *International Journal of Law and Psychiatry, 7,* 35-50.

Helzer, J. E., Robins, L. N., McEvoy, L. T., Spitznagel, E. I., Stoltzman, R. K., Farmer, A., & Brockington. I. F. (1985). A comparison of clinical and diagnostic interview schedule diagnosis: Physician reexamination of lay-interviewed cases in the general population. *Archives of General Psychiatry, 42,* 657-666.

Hodgins, S. (2001). The major mental disorders and crime: Stop debating and start treating and preventing. *International Journal of Law and Psychiatry, 24*, 427-446.

Hodgins, S., & Côté, G. (1993). The criminality of mentally disordered offenders. *Criminal Justice and Behavior, 20*, 115-129.

Hodgins, S., & Côté, G. (1995). Major mental disorder among penitentiary inmates. In L. Stewart, L. Spermaceti, & C. Webster (Eds), *Clinical criminology: Toward effective correctional treatment. Proceedings of the second conference on clinical criminology* (p. 6-20). Toronto, ON: Correctional Service Canada.

IBM Corp. Released. (2016). *IBM SPSS Statistics for Windows, Version 24.0.* Armonk, NY: IBM Corp.

Latimer, J., & Lawrence, A. (2006). *The review board systems in Canada: An overview of results from the mentally disordered accused data collection study.* Ottawa, ON: Department of Justice Canada, No. Rr06-1e.

Le Roux, B., & Rouanet, H. (2004). *Geometric data analysis, from correspondence analysis to structured data analysis.* Dordrecht. Kluwer. P. 179.

Link, B., Andrews, H., & Cullen, F. (1992). The violent and illegal behavior of mental patients reconsidered. *American Sociological Review, 57*, 257-292.

Lobbestael, J., Leurgans, M., & Arntz, A. (2010). Inter-rater reliability of the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID I) and Axis II Disorders (SCID II). *Clinical Psychology & Psychotherapy, 18,* 75-79.

Mueser, K. T., Crocker, A. G., Frisman, L. B., Drake, R. E., Cowell, N. H., & Essock, S. M. (2006). Conduct disorder and antisocial personality disorder in persons with severe psychiatric and substance use disorders. *Schizophrenia Bulletin, 32,* 626-636.

Robins, L. N., Helzer, J. E., Croughan, J., & Ratcliff, K. S. (1981). National Institute of Mental Health Diagnostic Interview Schedule: Its history, characteristics, and validity. *Archives of General Psychiatry, 38*, 381-389.

Roesch, R., Ogloff, J. R. P., Hart, S. D., Dempster, R. J., Zapf, P. A., & Whittemore, K. E. (1997). The impact of Canadian Criminal Code changes on remands and assessments of fitness to stand trial and criminal responsibility in British Columbia. *Canadian Journal of Psychiatry, 42,* 509-514.

Serin, R. C. (1991). Psychopathy and violence in criminals. *Journal of Interpersonal Violence, 6*, 423-431.

SAS Institute Inc. (2006). *SAS, version 9.1.* SAS Institute Inc., Cary, NC.

Shaw, J., Hunt, I. M., Flynn, S., Meehan, J., Robinson, J., Buckley, H., et al. (2006). Rates of mental disorder in people convicted of homicide: National clinical survey. *British Journal of Psychiatry, 188,* 143-147.

Shear, M. K., Greeno, C., Kang, J., Ludewig, D., Frank, E., Swartz, H. A., ... Hanekamp, M. (2000). Diagnosis of non-psychotic patients in community clinics. *American Journal of Psychiatry, 157,* 581-587.

Steadman, H. J., Mulvey, E. P., Monahan, J., Robbins, P. C., Appelbaum, P. S., Grisso, T., Roth, L. H., & Silver, E. (1998). Violence by people discharged from acute psychiatric inpatient facilities and by others in the same neighborhoods. *Archives of General Psychiatry, 55*(5), 393-401.

Steadman, H. J., Robbins, P. C., Islam, T., & Osher, F. (2007). Re-validating the Brief Jail Mental Health Screen to increase accuracy for women. *Psychiatric Services, 58,* 1598-1601.

Steiner, J. L., Tebes, J. K., Sledge, W. H., & Walker, M. L. (1995). A comparison of the structured clinical interview for DSM-III-R and clinical diagnoses. *Journal of Nervous & Mental Disease, 183,* 365-369.

Swanson, J. W., Holzer, C. E., Ganju, V. K., & Jono, R. T. (1990). Violence and psychiatric disorder in the community: Evidence from the epidemiological catchment area surveys. *Hospital and Community Psychiatry, 41*, 761-770.

Swinson, N., & Shaw, J. (2007). Homicide and mental disorder: The national confidential inquiry. *Psychiatry, 6*, 452-454.

Teplin, L. A. (1990). The prevalence of severe mental disorder among male urban jail detainees: comparison with the Epidemiological Catchment Area program. *American Journal of Public Health, 80*, 663-669

Teplin, L. A., Abram, K. M., & McClelland, G. M. (1996). Prevalence of psychiatric disorders among incarcerated women: Pretrial jail detainees. *Archives of General Psychiatry, 53,* 505-512.

Tiihonen, J., Isohanni, M., Räsänen, P., Koiranen, M., & Moring, J. (1997). Specific major mental disorder and criminality: a 26 year prospective study of the 1966 Northern Finland birth cohort. *American Journal of Psychiatry, 154,* 840-845.

Trestman, R. L., Ford. J., Zhang, W., & Wiesbrock, V. (2007). Current and lifetime psychiatric illness among inmates not identified as acutely mentally ill at intake in Connecticut's jails. Journal of the American Academy of Psychiatry and the Law, 35, 490-500.

Tribunal Administratif du Québec. (2008). *Rapport annuel de gestion 2006-2007.* Québec, QC : Tribunal Administratif du Québec. Available from http://www.taq.gouv.qc.ca/fr/publications-documentation/publications/depliants-guides-et-rapports

Vracotas, N., & Côté, G. (2017). *Prevalence of major mental disorder among men incarcerated for homicide-related crimes.* Unpublished document, Université du Québec a Trois Rivières.

Williams, J. B., Gibbon, M., First, M. B., Spitzer, R. L., Davies, M., Borus, J., ... Wittchen, H-U. (1992). The Structured Clinical Interview for DSM-III-R (SCID) II: Multisite Test-retest reliability. *Archives of General Psychiatry, 49,* 630-636.

Williamson, S., Hare, R. D., & Wong, S. (1987). Violence: Criminal psychopaths and their victims. *Canadian Journal of Behavioural Science, 19,* 454-462.

Winko v. British Columbia (Forensic Psychiatric Institute), 1999, 2 SCR 625

Zanarini, M. C., & Frankenburg, F. R. (2001). Attainment and maintenance of reliability of Axis I and Axis II disorders over the course of a longitudinal study. *Comprehensive Psychiatry, 42*, 369-374.

Zanarini, M. C., Skodol, A. E., Bender, D., Dolan, R. T., Stanislaw, C. A., Schaefer, E., & Morey, L. C. (2000). The collaborative longitudinal personality disorder study: Reliability of Axis I and II diagnoses. *Journal of Personality Disorders, 14*, 291-299.

General discussion

Historically, research conducted at federal correctional institutions in Canada have revealed higher prevalence rates of MMD amongst homicide offenders when comparing them to other criminals (Côté & Hodgins, 1992; Hodgins & Côté, 1995). This was especially true with regards to the diagnosis of schizophrenia. In fact, schizophrenia and other psychotic disorders are repeatedly being cited in studies demonstrating risk of homicide (Baillargeon et al., 2009). The present study was able to generate current rates of MMD among homicidal inmates and demonstrate through linear analyses, that the population of inmates who had committed a homicide-related crime no longer exhibited higher rates of MMD when compared to their non-homicidal counterparts (Vracotas & Côté, 2017).

These results indicate that systematic changes are affecting the inmate population since previous studies were conducted on the same population almost 25 years prior. It is thought that since the application of the amendments to the Criminal Code of Canada in 1992, a greater amount of accused are requesting and obtaining a NCRMD defence, and therefore, being directed towards the Review Boards for Mental Disorder (Latimer & Lawrence, 2006; Roesch et al., 1997). Keeping this in mind the possibility that offenders with some MMD are being directed towards the Review Boards for Mental Disorder, and the trend of diminishing homicide rates in Canada the present study aimed to investigate, if when dealing with the complexities of homicide, does the profile for the

population of incarcerated homicidal inmates change as well. The question here is: Did these legislative changes to Part XX.1 of the Canadian Criminal Code cause changes in the profile of homicidal inmates?

It was hypothesized that those serving a sentence for a homicide-related crime in a federal correctional institution during a post amendment period would present with a psychosocial profile more closely related to the average career criminal. Corollary, those belonging to a homicide profile prior to the amendments made to the Criminal Code were most likely characterized by unstable mental illness. To demonstrate this, non-linear analyses were conducted. MCA group individuals in a geometric space according to the value of each profile characteristic. These groups are then measured according to their significant difference from the average individual. In this case the 'homicide' profile characteristics distance is compared to from the mean of the average criminals. The farther the profiles are located, the more significantly different they are considered to be. The MCA and the hierarchical clustering technique bring to the foreground the major changes to the populations of incarcerated homicide offenders, which is most likely an effect of the modifications made to the criminal justice system because of the amendments made to the Criminal Code in 1992.

For the sample collected in 1988, four distinct profiles were revealed: (1) the 'non-violent delinquent'; (2) the 'psychologically unstable and moderately violent'; (3) the 'well-adjusted and non-violent'; and finally (4) the 'mood disordered homicide' profile.

The inmates from this last profile are stable in terms of personality, though, have a significant amount of major mood disorder. These individual have no history of non-violent crime and have only committed one violent crime, which is thought to be the high percentage of homicidal inmates exhibited in this profile (52%).

For the data collected between 2008 and 2012, five distinct profiles were revealed: (1) the 'late starter and moderate criminal'; (2) the 'psychologically unstable and highly violent'; (3) the 'well-adjusted and non-violent'; (4) the 'highly violent and antisocial'; and finally (5) the 'mood disordered homicide' profile. The individuals from this last profile are characterized as single and highly educated. Inmates within this profile have suffered a lifetime of major mood disorder, though they have never experienced a psychotic disorder. Inmates in this profile have committed a moderate amount of violent and none to low amounts of non-violent offences.

Therefore, contrary to our initial hypothesis, the 'homicide' profiles from 1988 and 2008 to 2012 are to some extent similarly characterized. Inmates within both profiles are characterized as being single, having stable personalities and have experienced a lifetime of major mood disorders. In fact, the prevalence of major mood disorders within this profile has more than doubled throughout the years (from 22.1% to 48.1%).

These results are contradictory to past research that found that psychotic disorders were the predominant MMD associated with homicide offenders (Côté &

Hodgins, 1992). Our non-linear analysis revealed that, in fact, major mood disorders were the most predominant disorder for a profile which includes 'homicide' for inmates from 1988. Psychotic disorders (6.5%) were not significantly represented in the 'homicide' profile from this sample, and interestingly, psychotic disorders completely disappeared from the 'homicide' profile from 2008 to 2012; whereas, the prevalence of major mood disorder has more than doubled within this profile when compared to the same profile from 1988. This could be considered another indication that those with the most severe and debilitating types of MMD are being redirected towards the Review Boards for Mental Disorder and that even though major mood disorders are considered a MMD, in most cases do not meet the full criteria for a NCRMD defence.

Another significant difference exhibited between the two 'homicide' profiles is that the more recent profile is characterized by moderate but substantial amounts of violent and non-violent crimes. This could be an indication that inmates from the more recent 'homicide' profile have had a longer and more chronic criminal history. Whereas, the inmates within the 'homicide' profile from 1988 were characterized by only having committed one violent offence and no non-violent offences in their lifetime. The findings that individuals within the more recent 'homicide' profile have had a longer history of criminality and that those within the older sample have only committed one violent offence is what was initially hypothesized. It is quite plausible that the homicidal event included in the 1988 profile may have been in part due to the instability of suffering with a lifetime MMD. Bennett, Ogloff, Mullen, and Thomas (2012) found that

most of the mentally ill homicide offenders in their study had long histories of prior lifetime mental illness. It would be interesting for future research to investigate if the length of a lifetime of suffering with a MMD was associated to the rate of homicide.

The significant prevalence of psychotic disorders exhibited among those who had committed homicidal crimes while conducting linear analyses in past research had completely disappeared under non-linear conditions in the present study. However, this type of analysis revealed that there is another profile which is characterized by a diagnosis of a psychotic disorder within each time period. Both 'psychologically unstable' profiles from 1988 and 2008 to 2012 were characterized by psychotic and antisocial personality disorders along with a history of juvenile delinquency. Interestingly, there is a shift overtime within this profile as well. Over the years, the rate of psychotic disorder diminished (from 15% to 5%) and major mood disorder became a very significant profile variable (60.3%). Along with the shift towards major mood disorder being the major disorder for this profile, the amount of violent and non-violent criminal acts increased as well. Individuals within this profile in the past were found to be violent and had committed a moderate amount of non-violent offences, but have now been found to have committed the highest amount of both violent and non-violent offences, when compared to all the other profiles. Surprisingly however, only in a few cases did the violence go as far as homicide. In fact, among the profile in 1988, 34% had committed a homicide-related crime, whereas in the more current 'psychologically unstable and violent' profile only 16.4% committed a homicide-related crime. This

observation indicates that while these individuals are becoming more criminalized there is a diminishment of homicidal offences among this profile type. It is possible that while conducting linear analyses individuals in this profile have dominated results due to elevated rates of psychosis in the past, even though, only a small percentage of individuals in that profile had committed a homicide-related crime. These results argue for the existence of two distinct groups of mentally disordered inmates. In 1988, one was dominated by psychotic disorders ('psychologically unstable and moderately violent' profile) and the other was dominated by mood disorders ('mood disordered homicidal inmates' profile). In the more recent sample, there is evidence of two mentally disordered profiles as well. However, both are heavily dominated by major mood disorder while the 'psychologically unstable' profile is also characterized with some psychotic disorder.

In terms of the profiles which include the most violent inmates, it is not surprising that both profile two ('psychologically unstable and highly violent' profile) and four ('highly violent and antisocial' profile) from 2008 to 2012 had the most violent and non-violent convictions, given that inmates in those two profiles adhere to both conduct disorder and adult antisocial personality disorder. Mueser and colleagues (2006) found that those with both child onset and adult characteristics of the personality disorder were found to have the most criminal justice involvement, especially with respect to violence charges and convictions, when compared to others who either only had conduct disorder, antisocial personality disorder or nothing at all. Although similar in some respect, these

two groups differ greatly. One is highly unstable in term of psychological wellbeing. Characterized by a lifetime of MMD and a long history of violence and crime, individuals in this profile most probably behaved in this way due to a lifetime of mental instability and lack of control due to their dual diagnoses of a mental and antisocial disorder. Inmates in the 'highly violent and antisocial' profile, on the other hand, are characterized by aspects that closely resemble those of a psychopath. Psychopaths are usually described by their violent tendencies, history of offences, and impulsive reactions to frustrating situations (Hare, 1981; Hare & McPherson, 1984; Serin, 1991). Even though no psychopathy assessments were conducted, given the significantly high percentages within this cluster on profile variables, one can postulate that a new distinct profile has emerged since 1988. This profile is characterized by conduct, antisocial, and substance disorders, as well as cruelty towards others and impulsivity. Inmates in this profile are less uneducated than inmates from other profiles, yet, were in serious relationships and have never experience disorders associated with emotion, such as depression. When assessing this profile globally, one may come to the conclusion that this is closer to a profile of psychopathic inmates. This hypothesis is not unlikely, given that the prevalence of psychopathy among offenders is usually between 15% and 25% (Hare, 1991) and this profile represents 21% of the total sample. Although, highly violent and cruel, inmates in this profile also rarely went as far as homicide. Williamson, Hare and Wong (1987), claim that psychopaths are more likely to commit serious violent assaults and other crimes, and that it is more likely that a non-psychopath would

commit homicide. This seems to be the case for both our 1988 and 2008 to 2012 'homicide' profiles who do not exhibit any psychopathic traits.

What is most interesting after developing profiles of inmates with the aim of analyzing subgroups of homicidal offenders in two important time points is being able to obtain a visual representation of the distribution of homicidal inmate over the different profiles. Even though there was only one profile among each time period for which homicide was significant, there was a distinct spread within each time frame. In 1988, homicide was most apparent in the 'mood disordered homicidal profile' as well as the 'psychologically unstable and violent' profile. In fact, never committing or attempting to commit a homicide was significantly part of the other two profiles ('non-violent delinquent', and the 'well-adjusted and non-violent' criminal profiles). Whereas in 2008 to 2012, homicide seems to be spread throughout the profiles, however, the 'well-adjusted and non-violent' profile (5%) and the 'psychologically unstable' (6.4%) both scored under the sample mean (10%). Diminishing homicide rates in Canada and increased use of the NCRMD defence are possible causes of the low prevalence rates within profiles.

One can argue that other factors, such as the use of different diagnostic instruments for the interviews conducted during different time periods and the decline in homicide rates in Canada, may be responsible for the changes exhibited among this population over time. However, the rate of psychotic disorders has been found to remain stable over

time (Helgeland & Torgersen, 2005; Jarbin & Knorring, 2003; Masson, Harrison, Croudace, Glazebrook, & Medley, 1997) and both diagnostic instruments have been found to be reliable and valid as they were used correctly (Eaton, Dryman, Sorenson, & McCutcheon, 1989; Escobar, Randolph, Asamen, & Karno, 1986; Fennig, Craig, Tanenberg-Karant, & Bromet, 1994; Helzer et al., 1985; Lobbestael, Leurgans, & Arntz, 2010; Williams et al., 1992; Zanarini et al., 2000; Zanarini & Frankenburg, 2001). It is more probable that the current results reflect the influence the amendments to the Criminal Code of Canada (1992) and everything that followed (i.e. Winko, 1999) had on the pathways to treatment and incarceration of this group of individuals. The increase in cases directed towards the Quebec Review Board for Mental Disorder has been clearly documented (Crocker et al., 2015; Latimer & Lawrence, 2006). Furthermore, Latimer and Lawrence (2006) also found that homicide-related offences (11.6%) were the second most common index offence that brought them to the Review Board during their two year study period. Cochrane and colleagues (Cochrane, Grisso, & Frederick, 2001) found that psychotic disorders are the leading diagnostic category usually obtaining a mental health plea and Crocker et al. (2013) found that approximately two-thirds of their sample of individuals found NCRMD for seriously violent offences were primarily diagnosed as having a psychotic disorder. These factors are in line with the results obtained and therefore, the results produced in the current study support the hypothesis that the amendments to the Criminal Code of Canada created an atmosphere for significant changes to the population of incarnated homicide offenders. Although the results of this study are valid for correctional populations in Quebec, they are not

generalizable to other countries. Laws governing mentally disordered accused in other countries are based on different judicial backgrounds. Therefore, samples of inmates gathered from other federal correctional institutions may not have the same inmate profiles as reported in this study. Even countries with similar values and practices may also have dissimilar methods of law application. For example, the Swedish penal code is based on Roman law and therefore, does not include the legal concept of 'unfit to stand trial' or any kind of insanity defence. Offenders are all subject to the same rulings. However, those who are suspected to be suffering from mental disorder are subject to medical examination by the National Board of Forensic Medicine (www.rmv.se) for treatment.

In the United States, an offender has the option of pleading insanity in federal court, except in the states of Idaho, Kansas, Montana, and Utah (Findlaw, 2018; Larson, 2018) However, offenders in states that do not allow for an insanity defense may still be able to demonstrate that a defendant was not capable of forming intent to commit a crime as a result of mental illness (Larson, 2018). States that do allow the insanity defence do not all use the same legal standards for ruling (The M'Naghten Rule; The Irresistible; Impulse Test; The Model Penal Code Test; The Durham Rule).

In many ways countries like Sweden and the United States of America share many of the same value as Canada, however their legal systems are built from a differential history and time frames.

## Strengths and limitations

The current study is the first since the 1992 Canadian Criminal Code amendments to analyze rates of MMD in a group of individuals incarcerated for homicide or attempted homicide. This study is also the first to have identified profiles of incarcerated offenders pre- and post-amendments, with the specific purpose of investigating change in characteristics of the homicidal inmate population. Methodologically, this study represents a large, reliable and representative study of homicidal individuals in correctional services in the Province of Quebec for the periods for which data was collected. Excellent inter-rater reliability was observed. However, this study was not without limitations. Due to the time periods in which data were collected, differential study design methods where implemented. Ideally the same diagnostic evaluations should have been used on both samples of inmates for better comparisons of profile variables. Though, at the time of data collection for the 1988 sample the DIS (Robins, Helzer, Croughan, & Ratcliff, 1981) was used while the more recent sample was administered the SCID-I (First, Spitzer, Gibbon, & Williams, 2002) and the SCID-II (Lobbestael et al., 2010). Also, even though both samples are from the same type of population, they were still not identical in the sense that, in 1988, inmates who were already serving their sentence were approached to participate. Whereas, for the sample collected between 2008 and 2012, only newly admitted offenders were interviewed. The latter sample may have had a lower homicide rate for this reason. However, the fact that the one sample included inmates already serving their sentence while the other included newly admitted inmates should not have had an effect on inmates' psychosocial profiles

because the variables chosen for inclusion in the analysis are not often malleable and do not fluctuate much over time. For example, psychotic disorders diagnoses are found to be quite stable over time (Helgeland & Torgersen, 2005; Jarbin & Knorring, 2003; Masson et al., 1997). Another limitation is that diagnostic interviews were conducted after significant delays from the time the crime was committed. Especially for those included in the 1988 sample. Ideally, an interview would have been conducted at the time, or shortly after the crime was committed. On balance however, psychotic disorders diagnoses are found to be quite stable over time (Helgeland & Torgersen, 2005; Jarbin & Knorring, 2003; Masson et al., 1997). Lastly, homicide-related crime was based on official record with the RCMP, and not a combination of official files and self-reports. Official files within the federal policing system may be missing information. The weakness in the official files is most prevalent when the crime was committed by an individual with a mental health problem. As well, in Canada every year about three-quarters of all homicides are solved, leaving about 25% unsolved (Boyce & Cotter, 2013). Therefore, there is a subgroup of individuals who have not been caught and should be part of this group for analyses. However, this may not be as relevant for this particular study given that those with MMD are usually arrested more often than individuals without mental health problems (Brennan et al., 2000).

# General conclusion

In conclusion, while studying complex issues requiring the analyses of interacting profile variables, a non-linear statistical analysis has the ability to produce much more refined results. As a result of conducting multiple correspondence analyses, the current study argues for the existence of two distinct profiles of mentally disordered inmates. The one profile which includes inmates who are antisocial, impulsive, highly violent and who have committed the most amount of non-violent crimes, but who are not homicidal, and in fact, prevalence of homicide seems to be decreasing within this profile since 1988; and the other profile which includes inmates who are characterized as homicidal, yet, more stable in terms of personality.

Another interesting finding is that inmates from 2008 to 2012 who committed homicide-related crimes seem to be spread throughout at least three criminal profiles. In 1988, they have been primarily found in two distinct profiles: the 'psychologically unstable but moderately violent' and the 'mood disordered homicidal inmates' profile. Partially in line with the hypotheses proposed, the 'homicide' profile from the recently collected sample was significantly more criminalized, violently and non-violently than those who were included in the 'homicide' profile from 1988. Although, the homicidal inmates who were recently interviewed are characteristically more criminalized and violent than the homicidal inmate in the past, they are not the most criminalized and violent when compared to other inmate profiles during the same time period. Results

show that in fact the 'psychologically unstable and violent' and the 'highly violent and antisocial' profiles both present as having committed the most violent and non-violent criminal acts, which we can assume is perpetuated by the antisocial aspects of the personality. Those in the more current sample who were included in the 'mood disordered homicidal inmates' profile did not possess antisocial and conduct disorder characteristics as opposed to what was proposed in the hypothesis. In fact, not having conduct disorder, antisocial personality, cruelty towards others, a substance diagnoses, or impulsivity is characteristic of this group. Therefore, the fact of having a more pure form of a major mood disorder without the dual diagnosis of an antisocial personality makes for a profile history with fewer violent and non-violent offences; however, the risk of committing a homicide is more likely.

The present study is novel as it takes into consideration legislative reform in the past few decades. Given changes made to laws governing accused with mental illness, research conducted prior to these changes cannot be replicated without amending the study design in order to compensate for accused that have been redirected to the Review Boards for Mental Disorder. Although MMD is still a factor in a profile highly characterized by violence and criminality, a conclusion cannot be reached within the scope of the present study that those with MMD are at higher risk for committing homicide, especially, with regards to psychotic disorders. Presently major mood disorders are still part of a profile characterized by homicidal crime. The reform to the Criminal Code law has favoured those most debilitated by MMD. However, it is again

possible to identify a profile which groups other MMD inmates for which the NCRMD defence is more difficult to obtain. While still relevant for their time, studies conducted in the past linking homicide and MMD (Côté & Hodgins, 2003; Hodgins, 2001) in correctional settings can no longer be used as they once were, linking psychotic disorders and criminality and/or violence, due to the fact that there are no longer high prevalence rates for psychotic disorders among homicide offenders in the correctional setting and in fact these disorders have completely disappeared among homicidal inmates. Given that laws and regulations have changed in the past couple of decades, which may have affected the types of observations made in past research, future studies should include samples of patients committed to forensic psychiatric institutions to be able to keep this line of research current.

Establishing current rates of MMD for inmates accused of committing a homicide-related crime and understanding offender profiles can aid in making informed decisions regarding the allocation of resources and improve standard of care when addressing the needs of the offender.

General references

Andrews, D. A., & Bonta, J. (1993). *The psychology of criminal conduct*. Cincinnati, OH: Anderson Publishing.

Ayuso-Mateos, J. L. (2000). *Global burden of schizophrenia in the year 2000: Version 1 estimates*. World Health Organization, Geneva, Switzerland. Available from http://www.who.int/healthinfo/statistics/bod_schizophrenia.pdf

Baillargeon, J., Binswanger, I. A., Penn, J. V., Williams, B. A., & Murray, O. J. (2009). Psychiatric disorders and repeat incarcerations: The revolving door. *American Journal of Psychiatry, 166,* 103-109.

Balachandra, K., Swaminath, S., & Litman, L. C. (2004). Impact of Winko on absolute discharges. *Journal of the American Academy of Psychiatry and the Law, 32,* 173-177.

Beaudette, J. N., Power, J., & Stewart, L. A. (2015). *National prevalence of mental disorders among incoming federally-sentenced men offenders* (Research Report, R-357). Ottawa, ON: Correctional Service Canada.

Beaudette, J. N., & Stewart, L. A. (2016). National prevalence of male disorders among incoming Canadian male offenders. *Canadian Journal of Psychiatry, 61*, 624-632.

Bennett, D., Ogloff, J., Mullen, P., & Thomas, S. (2012). A study of psychotic disorders among female homicide offenders. *Psychology, Crime & Law, 18,* 231-243.

Bland, R. C., Newmand, S. C., Dyck, R. J., & Orn, H. (1990). Prevalence of psychiatric disorders and suicide attempts in a prison population. *Canadian Journal of Psychiatry*, *35*, 407-413.

Bland, R. C., Newman, S. C., Thompson, A. H., & Dyck, R J. (1998). Psychiatric disorders in the population and in prisoners. *International Journal of Law and Psychiatry, 21*, 273-279.

Bonta, J., Andrews, D. A., & Motiuk, L. L. (1993, October). *Dynamic risk assessment and effective treatment.* Paper presented at the annual meeting of the American Society of Criminology, Phoenix.

Boyce, J., & Cotter, A. (2013). Homicide in Canada, 2012. *Juristat*. Canadian Centre for Justice Statistics, Statistics Canada catalogue No. 85-002-X

Brennan, P. A., Mednick, S. A., & Hodgins, S. (2000). Major mental disorder and criminal violence in a Danish birth cohort. *Archives of General Psychiatry, 57*, 494-500.

Brink, J. H., Doherty, D., & Boer, A. (2001). Mental disorder in federal offenders: A Canadian prevalence study. *International Journal of Law and Psychiatry, 24*, 339-356.

Canadian Institute for Health Information. (2008). *Improving the health of Canadians: Mental health, delinquency and criminal activity.* Ottawa, ON: Canadian Institute for Health Information.

Cochrane, R. E., Grisso, T., & Frederick, R. I. (2001). The relationship between criminal charges, diagnoses, and psycholegal opinions among federal pretrial defendants. *Behavioral Science & the Law, 19,* 565-582.

Cooke, D. J. (1994). *Psychological disturbance in the Scottish prison system: Prevalence, precipitants and policy.* Scottish Prison Service Occasional Papers.

Correctional Service of Canada. (1990). Mental health of federal inmates. *Forum, 2,* 271-281.

Côté, G., Crocker, A., Daigle, M., Toupin, J., Gobbi, G., & Turecki, G. (paper in preparation). *Mental health problems in correctional settings.*

Côté, G., & Hodgins, S. (1992). The prevalence of major mental disorders among homicide offenders. *International Journal of Law and Psychiatry, 15*, 89-99.

Côté, G., & Hodgins, S. (2003). Les troubles mentaux et le comportement criminel. In M. Le Blanc, M. Ouimet, & D. Szabo (Eds), *Traité de criminologie empirique, 3rd ed.* (pp. 503-548). Montréal, QC : Presses de l'Université de Montréal.

Criminal Code. (1892). *55-56 Victoria, Chap. 29.* Repéré à https://archive.org/details/criminalcodevic00canagoog/page/n6

Criminal Code of Canada, R.S.C., 1985, c. C-46.

Criminal Code of Canada, R.S.C., 1992, c. C-46.

Crocker, A. G., Nicholls, T. L., Seto, M. C., Côté, G., Charette, Y., & Caulet, M. (2015). The national trajectory project of individuals found not criminally responsible on account of mental disorder in Canada. Part 1: Context and methods. *Canadian Journal of Psychiatry, 60,* 98-105.

Crocker, A. G., Seto, M. C., Nicholls, T. L., Côté, G. (2013). *Description and processing of individuals found not criminally responsible on account of mental disorder accused of "serious violent offences".* Research and Statistics division, Department of Justice, Canada.

Daigle, M., & Côté, G. (2002). Dépistage systématique et prise en charge de hommes incarcérés suicidaires (Rapport d'évaluation). Montréal, Québec.

Daniel M'Naghten's Case (1843), 8 R.R. 718 (H.L.).

Department of Justice Canada. (1983). *Mental disorder project, discussion paper.* Ottawa.

Department of Justice Canada. (1991). *Mental disorder amendments to the Criminal Code, information paper.* Ottawa. Page 4.

Eaton, W. W., Dryman, A., Sorenson, A., & McCutcheon, A. (1989). DSM-III major depressive disorder in the community: A latent class analysis of data from the NIMH epidemiological catchment area program. *British Journal of Psychiatry, 155,* 48-54.

Erb, M., Hodgins, S., Freese, R., Müller-Isberner, R., & Jöckel, D. (2001). Homicide by persons with schizophrenia before and after deinstitutionalization. *Criminal Behaviour and Mental Health, 11,* 6-26.

Eronen, M., Tiihonen, J., & Hakola, P. (1996). Schizophrenia and homicidal behavior. *Schizophrenia Bulletin, 22,* 83-89.

Escobar, J. I., Randolph, E. T., Asamen, J., & Karno, M. (1986). The NIMH-DIS in the assessment of DSM-III schizophrenia disorder. *Schizophrenia Bulletin, 12,* 187-193.

Fazel, S., & Danesh, J. (2002). Serious mental disorder in 23 000 prisoners: A systematic review of 62 surveys. *The Lancet, 359,* 545-550.

Fazel, S., & Seewald, K. (2012). Severe mental illness in 33 588 prisoners worldwide: Systematic review and meta-regression analysis. *British Journal of Psychiatry, 200,* 364-373.

Fennig, S, Craig, T. J., Tanenberg-Karant, M., & Bromet, E. J. (1994). Comparison of facility and research diagnoses in first-admission psychotic patients. *American Journal of Psychiatry, 151*(10), 1423-1429.

FindLaw. (2018). *Insanity defense.* Retrieved 17 October 2018 from https://criminal.findlaw.com/criminal-procedure/insanity-defense.html

First, M. B., Spitzer, R. L., Gibbon, M., & Williams, J. B. W. (2002). Structured Clinical Interview for DSM-IV-TR for Axis I Disorders-Patient Edition. Biometric Research Department, New York State Psychiatric Institute, New York. (French translation by Lise Bordeleau and Danielle Gangé, membres de l'équipe de l'Unité de recherche en Neuroscience. Le Centre Hospitalier Universitaire de Québec.).

Glancy, G., & Bradford, J. (1999). Canadian landmark cases: Regina v. Swain. *Journal of the American Academy of Psychiatry and the Law, 27,* 301-307.

Gottlieb, P., Gabrielsen, G., & Kramp, P. (1987). Psychotic homicides in Copenhagen from 1959 to 1983. *Acta Psychiatrica Scandinavica, 76,* 285-292.

Gunn, J., Maden, A., & Swinton, M. (1991). Treatment needs of prisoners with psychiatric disorders. *British Medical Journal, 303,* 338-341

Gunn, J., Maden, A., & Swinton, M. (1992). *The number of psychiatric cases among sentenced prisoners*. London: Home Office.

Hare, R. D. (1981). Psychopathy and violence. In J. R. Hayes, T. K. Roberts, & K. S. Solway (Eds), *Violence and the psychopathy checklist.* Vancouver, CB: Department of Psychology, University of British Columbia.

Hare, R. D. (1991). *The Hare psychopathy checklist revised.* Toronto, ON: Multi-Health Systems.

Hare, R. D., & McPherson, L. M. (1984). Violent and aggressive behaviour by criminal psychopaths. *International Journal of law and Psychiatry, 7,* 35-50.

Health Canada. (2002). *A report on mental illness in Canada.* Ottawa, ON: Health Canada. Catalogue no. 0-662-32817-5.

Helgeland, M. I., & Torgersen, S. (2005). Stability and prediction of schizophrenia from adolescence to adulthood. *European Child & Adolescent Psychiatry, 14,* 83-94.

Helzer, J. E., Robins, L. N., McEvoy, L. T., Spitznagel, E. I., Stoltzman, R. K., Farmer, A., & Brockington. I. F. (1985). A comparison of clinical and diagnostic interview schedule diagnosis: Physician reexamination of lay-interviewed cases in the general population. *Archives of General Psychiatry, 42,* 657-666.

Hodgins, S. (1992). Mental disorder, intellectual deficiency and crime: Evidence from a birth cohort. *Archives of General Psychiatry, 49,* 476-483.

Hodgins, S. (2001). The major mental disorders and crime: Stop debating and start treating and preventing. *International Journal of Law and Psychiatry, 24*, 427-446.

Hodgins, S., & Côté, G. (1990). Prevalence of mental disorders among penitentiary inmates in Quebec. *Canada's Mental Health, 3,* 1-4.

Hodgins, S., & Côté, G. (1995). Major mental disorder among penitentiary inmates. In L. Stewart, L. Stermac & C. Webster (Eds), *Clinical criminology: Toward effective treatment. Proceedings of the second conference on clinical criminology* (p. 6-20). Toronto, ON: Correctional Services of Canada.

Hodgins, S., Mednick, S. A., Brennan, P. A., Schulsinger, F., & Engberg, M. (1996). Mental disorder and crime: Evidence from a Danish birth cohort. *Archives of General Psychiatry, 53*, 489-496.

Jarbin, H., & Knorring, A. L. V. (2003). Diagnostic stability in adolescent onset psychotic disorders. *European Child & Adolescent Psychiatry, 12,* 15-22.

Larson, Aaron (April 7, 2018). *"What is the Insanity Defense". ExpertLaw.* Retrieved 17 October 2018 from https://www.expertlaw.com/library/criminal-law/what-insanity-defense

Latimer, J., & Lawrence, A. (2006). *The review board systems in Canada: An overview of results from the mentally disordered accused data collection study.* Ottawa, ON: Department of Justice Canada, No. Rr06-1e.

Law Reform Commission of Canada. (1976). *Mental disorder in the Criminal Process.* Ottawa, ON: Supply and Service Canada.

Lindqvist, P. (1986). Criminal homicide in Northern Sweden 1970-In 1981: Alcohol intoxication, alcohol abuse and mental disease. *International Journal of Law and Psychiatry, 8,* 19-37.

Lobbestael, J., Leurgans, M., & Arntz, A. (2010). Inter-rater reliability of the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID I) and Axis II Disorders (SCID II). *Clinical Psychology & Psychotherapy, 18,* 75-79.

Masson, P., Harrison, G., Croudace, T., Glazebrook, C, Medley, I. (1997). The predictive validity of a diagnosis of schizophrenia. A report from the International Study of Schizophrenia (ISoS) coordinated by the World Health Organization and the Department of Psychiatry, University of Nottingham. *British Journal of Psychiatry, 170*, 321-327.

Mental Health Commission of Canada (2012). *Changing lives: The mental health strategy for Canada.* Calgary, AB: Author.

Miladinovic, Z., & Mulligan, L. (2015). Homicide in Canada, 2014. *Juristat.* Canadian Centre for Justice Statistics, Statistics Canada catalogue No. 85-002-X.

Motiuk, L. L, & Porporino, F. J. (1991). *The prevalence, nature and severity of mental health problems among federal male inmates in Canadian penitentiaries.* Research Report, R-24. Ottawa, ON: Correctional Service Canada.

Mueser, K. T., Crocker, A. G., Frisman, L. B., Drake, R. E., Cowell, N. H., & Essock, S. M. (2006). Conduct disorder and antisocial personality disorder in persons with severe psychiatric and substance use disorders. *Schizophrenia Bulletin, 32*, 626-636.

Mullen, P. E., Burgess, P., Wallace, C., Palmer, S., & Ruschena, D. (2000). Community care and criminal offending in schizophrenia. *The Lancet, 355*, 614-617.

Perreault, S. (2013). Police-reported crime statistics in Canada. *Juristat,* Statistics Canada.

Public Health Agency of Canada. (2006). *The human face of mental health and mental illness in Canada.* Catalogue no. HP5-19/2006E, ISBN 0-662-43887-6. Ottawa, ON: Minister of Public Works and Government Services Canada.

Regina. v. Swain. (1986). 50 C.R. (3rd) 97 (Ont. C.A.).

Regina. v. Swain. (1991). 1 S.C.R. 933.

Richard-Devantoy, S., Olie, J. P., & Gourevitch, R. (2009). Risque d'homicide et troubles mentaux graves : revue critique de la littérature. *Encéphale, 35*, 521-530.

Robins, L. N., Helzer, J. E., Croughan, J., & Ratcliff, K. S. (1981). National Institute of Mental Health Diagnostic Interview Schedule: Its history, characteristics, and validity. *Archives of General Psychiatry, 38,* 381-389.

Roesch, R., Ogloff, J. R. P., Hart, S. D., Dempster, R. J., Zapf, P. A., & Whittemore, K. E. (1997). The impact of Canadian Criminal Code changes on remands and assessments of fitness to stand trial and criminal responsibility in British Columbia. *Canadian Journal of Psychiatry, 42,* 509-514.

Schneider, E. D., Glancy, G., Bradford, J., & Seibenmorgen, E. (2000). Canadian landmark case, Winko v. British Columbia: Revisiting the conundrum of the mentally disordered accused. *Journal of the American Academy of Psychiatry and the Law, 28,* 206-12.

Serin, R. C. (1991). Psychopathy and violence in Criminals. *Journal of Interpersonal Violence, 6,* 423-431.

Shaw, J., Hunt, I. M., Flynn, S., Meehan, J., Robinson, J., Bickley, H., ... Applby, L. (2006). Rates of mental disorder in people convicted of homicide: National clinical survey. *British Journal of Psychiatry, 188,* 143-147.

Simpson, A. I. F., Penney, S. R., Seto, M., Crocker, A. G., Nicholls, T. L., & Darby, P. L. (2014). *Changing characteristics of the review board population in Ontario: A Population-Based Study from 1987-2012.* Unpublished report, Ontario Mental Health Foundation, Toronto, Ontario, Canada.

Sinha, M. (2009). *An Investigation into the feasibility of collecting data on the involvement of adults and youth with mental health issues in the criminal justice system.* Crime and Justice Research Paper Series. Statistics Canada Catalogue no. 85-561-M - No. 016. Ottawa: Ontario. Online: Canada www.statcan.gc.ca/pub/85-561-m/85-561-m2009016-eng.pdf (retrieved May 27, 2015).

Statistics Canada. (2003). Canadian Community Health Survey: Mental health and well-being. *The Daily*, September 3. Ottawa, Statistics Canada, Health Division.

Stueve, A., & Link, B. G. (1998). Gender differences in the relationship between mental illness and violence: Evidence from a community-based epidemiological study in Israel. *Social Psychiatry and Psychiatric Epidemiology, 33*, S61-S67.

Swinson, N., & Shaw, J. (2007). Homicide and mental disorder: The national confidential inquiry. *Psychiatry, 6*, 452-454.

Teplin, L. A., Abram, K. M., & McClelland, G. M. (1996). Prevalence of psychiatric disorders among incarcerated women: Pretrial jail detainees. *Archives of General Psychiatry, 53*, 505-512.

Tiihonen, J., Isohanni, M., Räsänen, P., Koiranen, M., & Moring, J. (1997). Specific major mental disorder and criminality: A 26 year prospective study of the 1966 Northern Finland birth cohort. *American Journal of Psychiatry, 154,* 840-845.

Tollefson, E. A., & Starkman, B. (1993). *Mental disorder in criminal proceedings.* Canada: Carswell.

Tribunal Administratif du Québec. (2008). *Rapport annuel de gestion 2006-2007.* Québec, QC : Tribunal Administratif du Québec. Available from http://www.taq.gouv.qc.ca/fr/publications-documentation/publications/depliants-guides-et-rapports

Volavka, J., Laska, E., Baker, S., Meisner, M., Czobor, P., & Krivelevich, I. (1997). History of violent behaviour and schizophrenia in different cultures. *British Journal of Psychiatry, 171*, 9-14.

Vracotas, N., & Côté, G. (2017). *Prevalence of major mental disorder among men incarcerated for homicide-related crimes.* Unpublished document, Université du Québec à Trois-Rivières.

Wallace, C., Mullen, P., Burgess, P., Palmer, S., Ruschena, D., & Browne, C. (1998). Serious criminal offending and mental disorder. *British Journal of Psychiatry, 172,* 477-484.

Wessely, S., Castle, D., Douglas, A., & Taylor, P. (1994). The criminal carter's of incident cases of schizophrenia. *Psychological Medicine, 24*, 483-502.

Williams, J. B., Gibbon, M., First, M. B., Spitzer, R. L., Davies, M., Borus, J., ... Wittchen, H-U. (1992). The Structured Clinical Interview for DSM-III-R (SCID) II: Multisite Test-retest reliability. *Archives of General Psychiatry, 49,* 630-636.

Williamson, S., Hare, R. D., & Wong, S. (1987). Violence: Criminal psychopaths and their victims. *Canadian Journal of Behavioural Science, 19*, 454-462.

Winko v. British Columbia (Forensic Psychiatric Institute), 1999, 2 SCR 625.

World Health Organization. (WHO, 2001a). *A public health approach to mental health.* Available from http://www.who.int/whr/2001/chapter1/en/index.html

World Health Organization. (WHO, 2001b). *Burden of mental and behavioural disorders.* Retrieved June 25, 2015 from http://www.who.int/whr/2001/chapter2/en/index.html

World Health Organization. (WHO, 2013). *Mental Health Action Plan 2013-2020.* ISBN 978 92 4 150602 1.

World Health Organization. (WHO, 2015). *Violence info. Homicide: WHO global health estimates.* Retrieved September 7, 2018 from, http://apps.who.int/violence-info/homicide/"The Insanity Defense Among the States".

Zanarini, M. C., & Frankenburg, F. R. (2001). Attainment and maintenance of reliability of Axis I and Axis II disorders over the course of a longitudinal study. *Comprehensive Psychiatry, 42*, 369-374.

Zanarini, M. C., Skodol, A. E., Bender, D., Dolan, R. T., Stanislaw, C. A., Schaefer, E., & Morey, L. C. (2000). The collaborative longitudinal personality disorder study: Reliability of Axis I and II diagnoses. *Journal of Personality Disorders, 14*, 291-299.

Appendice
Formulaire de consentement et documents relatifs au protocole d'évaluation de la recherche

Institut
Philippe-Pinel
de Montréal
Affilié à l'Université de Montréal

20 mars 2007

Gilles Côté
Centre de recherche
Institut Philippe-Pinel de Montréal

Objet: Étude *«Épidémiologie des troubles mentaux, des troubles de la personnalité et de la déficience intellectuelle en milieu carcéral»*

Monsieur,

Le Comité d'éthique de la recherche de l'IPPM a approuvé le projet en titre lors de sa réunion du 16 février 2007 (Voir résolution CÉR-07-181). Le numéro de dossier qui vous a été attribué est 070216/E/E/A/6. Ce dernier devra apparaître sur la page frontispice des formulaires de consentement.

De plus, vous trouverez ci-joint un formulaire d'engagement que vous devez signer et retourner à Mme Joëlle Chevrier.

Veuillez agréer, Monsieur Côté, l'expression de nos salutations respectueuses.

Dr Jocelyn Aubut, Président
Comité d'éthique de la recherche de l'IPPM

JA/jc

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**CERTIFICAT D'ÉTHIQUE DE LA RECHERCHE**

**RAPPORT DU COMITÉ D'ÉTHIQUE :**

Le comité d'éthique de la recherche, mandaté à cette fin par l'Université, certifie avoir étudié le protocole de recherche :

**Titre du projet :** **Épidémiologie des troubles mentaux, des troubles de la personnalité et de la déficience intellectuelle en milieu carcéral**

**Chercheur :** **Gilles Côté, Professeur**

**Département :** **Département de psychologie**

**Organisme :** **IRSC**

et a convenu que la proposition de cette recherche avec des êtres humains est conforme aux normes éthiques.

**PÉRIODE DE VALIDITÉ DU PRÉSENT CERTIFICAT :**

Date de début : **1 juin 2007** Date de fin : **31 mars 2011**

**COMPOSITION DU COMITÉ :**

Le comité d'éthique de la recherche de l'Université du Québec à Trois-Rivières est composé des catégories de personnes suivantes, nommées par le conseil d'administration :

- six professeurs actifs ou ayant été actifs en recherche, dont le président et le vice-président;
- le doyen des études de cycles supérieurs et de la recherche (membre d'office);
- un(e) étudiant(e) de deuxième ou de troisième cycle;
- un technicien de laboratoire;
- une personne ayant une formation en droit et appelée à siéger lorsque les dossiers le requièrent;
- une personne extérieure à l'Université;
- un secrétaire provenant du Décanat des études de cycles supérieurs et de la recherche ou un substitut suggéré par le doyen des études de cycles supérieurs et de la recherche.

**SIGNATURES :**

L'Université du Québec à Trois-Rivières confirme, par la présente, que le comité d'éthique de la recherche a déclaré la recherche ci-dessus mentionnée entièrement conforme aux normes éthiques.

GILLES BRONCHTI
**Président du comité**

FABIOLA GAGNON
**Secrétaire du comité**

**Date d'émission :** 20 avril 2007

**N° du certificat :** CER-07-122-07.04

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Le 11 septembre 2007

Monsieur Gilles Côté, Ph.D.
Centre de recherche
Institut Philippe-Pinel de Montréal
10905 boul. Henri-Bourassa Est
Montréal (Québec)
H1C 1H1

**SUJET: Mise à jour de votre autorisation de recherche**

Monsieur,

Nous avons le plaisir de vous annoncer que vous êtes autorisé dès maintenant à débuter votre projet de recherche intitulé **« Épidémiologie des troubles mentaux, des troubles de la personnalité et de la déficience intellectuelle en milieu carcéral»**.

Par copie de la présente, la coordonnatrice locale de la recherche au Centre régional de réception (CRR) sera informée de la situation. Madame Héléne Naud, psychologue senior au CRR, sera la personne ressource que vous devrez contacter dans le cadre de la planification de vos rencontres. Celle-ci peut être rejointe au numéro suivant : (450) 478-5977 au poste 7605.

Nous réitérons le fait que nous comptons sur votre collaboration en matière de confidentialité et sur tous les aspects de l'engagement qui suit :

a) respecter les dispositions des lois et des politiques concernant les renseignements protégés et la vie privée des délinquants et des employés;
b) reconnaître que l'autorisation de mener cette recherche est conditionnelle au respect des règles et règlements et au projet tel qu'approuvé. Toute dérogation entraînera une suspension ou un retrait de l'autorisation reçue;
c) obtenir, au préalable, l'autorisation écrite des délinquants et des employés pour leur participation à la recherche et/ou pour consultation de leurs dossiers conformément à la loi sur la protection des renseignements personnels. La formule de consentement devra comprendre les aspects suivants:
    - explications, justifications et risques possibles de l'étude;
    - indication que la participation est absolument volontaire et peut prendre fin en tout temps;
    - indication que la participation n'a aucune répercussion sur les conditions ou la durée de la peine;
    - indication qu'aucune récompense ne sera consentie aux participants;
d) s'abstenir de toute communication ultérieure des renseignements, aussi longtemps que leur forme risquerait vraisemblablement de permettre l'identification des individus concernés;
e) ne pas remettre aux délinquants les outils utilisés dans le cadre de la cueillette de données;
f) ne publier aucune des données recueillies, à l'exception du rapport présenté pour publication, sans le consentement du Service et/ou du Ministère;
g) indiquer que les opinions et conclusions présentées ne constituent pas nécessairement celles du Service ou du Ministère.

.../2

**Nous nous attendons à recevoir une copie de votre rapport pour approbation avant toute publication ou présentation afin de s'assurer que les conditions d'approbation du projet ou de l'entente ainsi que les lois pertinentes ont été respectées.**

Nous avons obtenu l'engagement écrit ainsi que la cote de fiabilité de l'équipe de chercheurs qui participera à cette recherche, soit :

M. Gilles Côté
M. Marc Daigle
M. Jean Toupin
M. Gustavo Turecki
Mme Gabriella Gobbi
Mme Anne Crocker
Mme Jeanne Vachon
Mme Nadia Chawky
Mme Vanessa Keegan

Par ailleurs, nous aimerions que vous nous avisiez de la date probable où votre étude sera complétée. Toute correspondance doit être adressée à l'Administration régionale, a/s Comité régional de recherche, 3 Place Laval, 2e étage, Laval (Québec) H7N 1A2. Pour toute information ou demande concernant un projet de recherche, veuillez contacter M. Jean-Marc Hamon au (450) 967-3421 ou à l'adresse de courriel 301-recherche@csc-scc.gc.ca. Lors de vos communications avec le SCC, veuillez mentionner le numéro de la recherche **RQ-125**.

Finalement, nous vous invitons à nous faire parvenir un court résumé d'article concernant votre projet de recherche pour publication dans la revue sur la recherche « Forum » produite par le Service Correctionnel du Canada (SCC) et pour publication sur le site « Intranet » et INTERNET du SCC. Nous apprécierions que ce résumé nous soit transmis sous format électronique, rédigé à partir du logiciel Word-Windows. Il est à noter que l'article reçu sera sujet à des modifications de style et de longueur. Dans le cas où aucun résumé d'article ne nous parviendrait, nous vous avisons que le Service Correctionnel du Canada se réserve le droit de produire un extrait de votre recherche.

Veuillez agréer, Monsieur Côté, l'expression de nos sentiments distingués.

Lise Bouthillier
Présidente du comité régional de recherche (Québec)
et Directrice, District Est/Ouest du Québec

c.c. : AR PPA, Administration régionale
Directrice, Centre régional de réception
Psychologue senior, Centre régional de réception
Coordonnateur régional de la recherche

**FORMULAIRE DE CONSENTEMENT**

**Titre du projet :** ***Épidémiologie des troubles mentaux, des troubles de la personnalité et de la déficience intellectuelle en milieu carcéral***

Nous vous invitons à participer à un projet de recherche conduit par une équipe de chercheurs de l'Institut Philippe-Pinel de Montréal et du centre de recherche de l'hôpital Douglas, chercheurs provenant des universités de Sherbrooke, du Québec à Trois-Rivières, de Montréal et de McGill. Le responsable du projet est Gilles Côté (Téléphone : 514 648-8461, poste 764). Cette recherche est également approuvée par le comité d'éthique de la recherche de l'Université du Québec à Trois-Rivières (certificat numéro CER-07-122-07.04 le 20 avril 2007). Veuillez prendre le temps s'il vous plaît d'envisager notre proposition et de poser toutes les questions que vous pourriez avoir, maintenant ou n'importe quand durant l'étude. Si vous décidez d'y participer, vous devrez signer un formulaire de consentement; nous vous donnerons une copie de ce formulaire.

Le projet porte sur les troubles mentaux, les troubles de la personnalité et la déficience intellectuelle en milieu carcéral; les troubles mentaux identifiés seront par la suite mis en lien avec les services mis en place pour répondre aux besoins reliés à la condition de santé. Cette dernière partie de l'étude fera l'objet d'un projet de recherche à venir. A cette occasion, vous n'aurez pas à être rencontré, l'information étant recueillie dans vos dossiers. Ainsi, il s'agit pour le moment 1) d'évaluer le pourcentage de personnes qui ont des problèmes de santé mentale; 2) de décrire les caractéristiques psychosociales de ces personnes; 3) d'identifier des indices génétiques et neurobiologiques associés à l'impulsivité. Ceci exige aussi que nous comparions ces observations avec les données des personnes qui ne présentent pas de troubles mentaux ou de déficience intellectuelle.

Vous avez été sélectionné(e) sur la base du hasard. Nous comptons rencontrer 755 hommes nouvellement condamnés à une sentence de pénitencier.

L'autorisation de consulter vos divers dossiers au cours des cinq prochaines années vise à nous permettre de vérifier, dans les faits, quels services vous aurez reçus au cours de ces années. Ces données seront aussi mises en relation avec votre fonctionnement général (adaptation au milieu carcéral; si c'est le cas, réinsertion sociale).

Nous croyons que ce projet ne présente aucun risque pour vous, le seul désagrément pouvant être le temps consacré à compléter l'entrevue et le fait de la prise de sang. Les bénéfices personnels directs sont limités, si ce n'est le fait que vous pouvez apprécier de parler avec quelqu'un qui est intéressé à connaître ce que vous vivez. Par contre, nous espérons que votre participation pourra contribuer à mettre en place des services améliorés susceptibles d'aider des personnes qui connaissent, comme vous, des difficultés personnelles.

Votre participation est absolument volontaire; vous pouvez y mettre fin en tout temps lors de l'entrevue ou, par la suite, par un simple avis écrit envoyé à l'adresse indiquée sur la formule de consentement et ce, à l'attention du responsable du projet. Votre refus de participer à ce projet n'aura aucune répercussion sur la nature et la durée des services que

vous recevez ou pourrez recevoir. Les informations recueillies ne seront partagées d'aucune façon avec les membres du personnel d'un service de santé ou d'un service judiciaire **sauf** si un membre de l'équipe du projet considère que ces informations laissent supposer que votre santé ou votre sécurité ou celles d'autrui puissent être menacées.

Les informations seront comptabilisées pour fins de recherche seulement, de sorte qu'on ne pourra vous identifier personnellement lors de la publication des résultats de l'étude.

Vous pouvez exiger des éclaircissements à la personne qui vous demande de participer, si certains points ne vous paraissent pas bien précisés.

De plus, si vous avez des commentaires, des plaintes ou des insatisfactions en ce qui concerne le déroulement de l'étude, vous pouvez contacter le commissaire local aux plaintes et à la qualité des services de l'Institut Philippe-Pinel de Montréal, au 514 648-8461, poste 174.

Une copie du document que vous vous apprêtez à signer vous sera remise.

Ces informations vous étant données, le consentement prend la forme suivante :

**FORMULE DE CONSENTEMENT DU PARTICIPANT**

Par la présente, je _____ confirme mon consentement à participer au projet de recherche conduit par une équipe de chercheurs de l'Institut Philippe-Pinel de Montréal et du centre de recherche de l'hôpital Douglas, chercheurs provenant des universités de Sherbrooke, du Québec à Trois-Rivières, de Montréal et de McGill. Le responsable du projet est Gilles Côté (Téléphone : 514 648-8461, poste 764) (Adresse : Directeur, Centre de recherche, Institut Philippe-Pinel de Montréal, 10 905, boul. Henri-Bourassa Est, Montréal, Québec, H1C 1H1). Le projet porte sur l'épidémiologie des troubles mentaux, des troubles de la personnalité et de la déficience intellectuelle en milieu carcéral; les troubles mentaux identifiés seront par la suite mis en lien avec les services mis en place pour répondre aux besoins reliés à la condition de santé. Ma participation consiste :

- à autoriser une ou deux entrevue(s) portant sur mes expériences de vie (durée totale d'environ 3 heures);
- à fournir l'autorisation de consulter mes divers dossiers (dossiers hospitaliers, dossiers judiciaires, dossiers institutionnels).
- à autoriser un prélèvement de sang (pas plus de 4 cuillerées à soupe, par comparaison aux 33 cuillerées à soupe normalement prélevées quand on donne du sang)

Ma participation est absolument volontaire et je peux y mettre fin en tout temps. Les informations recueillies ne seront partagées d'aucune façon avec les membres du personnel d'un service de santé ou d'un service judiciaire **sauf** si un membre de l'équipe du projet considère que ces informations laissent supposer que votre santé ou votre sécurité ou celles d'autrui puissent être menacées. Les données seront comptabilisées pour fin de recherche seulement.

Je donne également l'autorisation à l'équipe de recherche de consulter mes dossiers pendant une période de cinq ans (dossiers hospitaliers, dossiers institutionnels, dossiers judiciaires, dossier de l'assurance maladie, selon le cas), afin de connaître les services que j'aurai reçus, de même que mon adaptation au milieu de détention.

J'ai été assuré(e) que mon refus de participer à ce projet n'aura aucune répercussion sur la nature et la durée des services que je reçois ou que je pourrai recevoir.

Je déclare avoir lu la lettre d'information qui accompagne ce formulaire et compris en quoi consiste l'étude. On a répondu aux questions que j'ai posées, si tel est le cas.

Signature du participant : _____ Date : _____

Signature du chercheur : _____ Date : _____

**Signée à :** _____

Institut
Philippe-Pinel
de Montréal
Université de Montréal

Le 14 septembre 2012

Monsieur Gilles Côté
Chercheur principal
Institut Philippe-Pinel de Montréal
10905, boulevard Henri-Bourassa Est
Montréal (Québec) H1C 1H1

**Objet : Réactivation du projet *Étude d'épidémiologie des problèmes de santé mentale en milieu carcéral* (n° 12-011)**

Cher monsieur Côté,

La présente fait suite à votre demande portant sur la réactivation du projet en titre, lequel a été mené en 1988 et mettait en cause une autre chercheuse, madame Sheilagh Hodgins. En substance, vous souhaitez pouvoir conserver les données des participants, qui avaient été recueillies dans ce projet, en vue de leur éventuelle utilisation dans le cadre de votre projet *Épidémiologie des troubles mentaux, des troubles de la personnalité et de la déficience intellectuelle en milieu carcéral* (n° 070216/E/E/A/6).

Aux fins de l'examen de votre demande, le comité plénier a examiné, à sa réunion du 13 septembre 2012, les documents suivants :

- le *Formulaire de demande d'évaluation d'un nouveau projet de recherche*, signé le 4 juillet 2012 ;
- un courriel de madame Sheilagh Hodgins qui vous autorise à utiliser les données de l'étude (29 juin 2012) ;
- la lettre de madame Sheilagh Hodgins, du 5 avril 1988, à madame Lucie McClung du Service correctionnel du Canada (SCC), au regard des aspects budgétaires ;
- le rapport de recherche tenant lieu de devis, intitulé « La prévalence, la nature et la gravité des problèmes de santé mentale chez les détenus de sexe masculin sous responsabilité fédérale dans les pénitenciers du Canada » (1992 n° R.24, septembre 1991) ;
- les versions française et anglaise (a) de la lettre d'invitation à participer (30 mai 1988), (b) de la formule de consentement (non datée, 1 p.) et (c) du consentement à la communication de données confidentielles (SCC-RQ-744, non daté, 1 p.) ;
- le rapport final (septembre 1988).

Outre ces documents, le comité a aussi pris en considération les opinions d'éthique des 24 mars et 16 juin 2011, portant sur cette question, ainsi que ses décisions rendues dans des dossiers similaires vous mettant en cause (projet n° 12-004 et 12-007).

Lors de son examen, le comité a noté que les identificateurs des données faisant l'objet de la présente demande avaient été supprimés. Il a aussi estimé souhaitable d'élargir la portée de sa décision, de manière à permettre d'autres utilisations de ces données, si besoin était, par vous ou d'éventuelles chercheurs, y compris vos étudiants.

10905, boul. Henri-Bourassa Est
Montréal (Québec) H1C 1H1
Téléphone : (514) 648-8461
Télécopieur : (514) 494-4406
www.pinel.qc.ca

Après examen, j'ai le plaisir de vous informer que le comité a fait droit à votre demande aux conditions ci-après mentionnées :

1. vous agirez à titre de gardien des données des participants qui ont été mises en banque dans le cadre de ce projet ;
2. vous conserverez ces données jusqu'au **1er octobre 2016** ; passé ce délai, elles devront être détruites, et ce, dans le respect des règles de la confidentialité, à moins d'une décision contraire du comité ;
3. vous ferez parvenir au comité le formulaire de l'annexe 1 dûment signé d'ici le 28 septembre 2012 ;
4. vous pourrez faire d'autres analyses de ces données, dans le cadre de ce projet, sans qu'il vous soit nécessaire d'obtenir l'approbation préalable du comité, étant entendu que votre devoir de reddition de comptes annuelle sera respecté ;
5. ces données pourront être utilisées aux fins de la réalisation d'autres projets qui auront été préalablement approuvés par le comité, que ces projets soient menés par vous ou par un tiers chercheur – y compris vos étudiants –, et ce, que les objectifs de ces projets entrent ou non dans ceux du projet initial ;
6. vous rendrez compte, une fois l'an, de la conservation adéquate des données. À cet égard, les modalités diffèrent, selon le cas. Ainsi, vous êtes dispensé de remplir le formulaire de reddition de comptes usuel au regard de l'utilisation des données à des fins de comparaison avec celles du projet n° 070216/E/E/A/6 ; le comité vous demande cependant de lui envoyer un courriel, une semaine avant l'arrivée à échéance de l'approbation, lui indiquant qu'aucun incident ne s'est produit au cours de l'année avec ces données. Il est entendu que si vous décidiez de faire d'autres analyses dans le cadre de ce projet, vous devrez alors remplir le formulaire usuel, une fois l'an. Dans tous les cas, votre devoir d'informer le comité, dans les meilleurs délais, de tout problème relatif à la conservation ou à l'utilisation des données qui arriverait au cours d'une année, demeure.

Je tiens à vous informer que la présente décision a été rendue alors que le quorum était atteint. Elle vaut pour une année, soit jusqu'au **13 septembre 2013**, et peut être suspendue ou révoquée en cas de non-respect des conditions susmentionnées.

En terminant, je vous demanderais de bien vouloir mentionner, dans toute correspondance avec le comité, le numéro attribué à votre projet par notre institution, soit le **12-011**.

Je vous prie d'agréer, cher monsieur Côté, mes salutations distinguées.

Sonya Audy, présidente
Comité d'éthique de la recherche

p. j.

c. c. Madame Sheilagh Hodgins, chercheuse

**Annexe 1**

**Protocole d'entente aux fins du respect de la vie privée des participants et de la protection de la confidentialité**

Je soussigné m'engage à respecter les règles suivantes, aux fins du respect de la vie privée des participants et de la protection de la confidentialité des données recueillies dans le cadre du projet *Étude d'épidémiologie des problèmes de santé mentale en milieu carcéral* (n° 12-011) :

1. les données du projet sont anonymisées ; elles sont conservées à l'Institut Philippe-Pinel de Montréal, sous ma garde, et protégées par un mot de passe ;
2. les données pourront être utilisées aux fins d'autres projets de recherche pourvu que ces projets aient été approuvés, au préalable, par le comité d'éthique de la recherche de l'Institut ; si ces données devaient être utilisées par un tiers chercheur, celui-ci devra fournir une copie de la lettre rendant compte de cette approbation, avant de pouvoir y accéder ;
3. les règles de gestion de la base de données, aux fins du transfert de données à un tiers chercheur sont celles qui ont été fixées par le comité d'éthique de la recherche, le 9 novembre 2011, à savoir :
   3.1. les données qui seront transférées devraient être stockées sur une clé USB préférablement à tout autre mode de transfert ; l'accès au contenu de cette clé devra nécessiter un mot de passe,
   3.2. lorsque le transfert par voie électronique ne peut être évité, l'accès aux données doit nécessiter un mot de passe,
   3.3. dans tous les cas, le tiers chercheur doit signer, au préalable, une entente d'utilisation et de protection des données ;
4. les données mises en banque ne pourront plus être utilisées après le **1er octobre 2016**, date à laquelle elles seront détruites dans le respect des règles de la confidentialité, à moins d'une décision contraire du comité d'éthique de la recherche de l'Institut.

Signature de Gilles Côté, chercheur principal  Date

Institut Philippe-Pinel de Montréal

Montréal, le 12 août 2016

Monsieur Gilles Côté
Institut Philippe-Pinel de Montréal
10905, boulevard Henri-Bourassa Est
Montréal, Québec
H1C 1H1

Objet: CER IPPM 12-011 - Approbation de la demande de renouvellement annuel.

**Étude épidémiologique des problèmes de santé mentale en milieu carcéral.**

Monsieur,

Vous avez soumis au Comité d'éthique de la recherche de l'Institut Philippe-Pinel de Montréal, par courriel, le 5 mai 2016, une demande de renouvellement pour votre projet cité en rubrique.

J'ai le plaisir de vous informer que votre demande de renouvellement a été approuvée par le Comité d'éthique de la recherche de l'Institut Philippe-Pinel de Montréal.

Ainsi, vous pouvez poursuivre votre étude pour un an, et ce, à compter du 14 septembre 2016. Un mois avant la date d'échéance vous devrez faire une demande de renouvellement auprès du Comité d'éthique de la recherche de l'Institut Philippe-Pinel de Montréal, en utilisant le document du Comité prévu à cet effet.

Nous vous rappelons que dans le cadre de son suivi continu, le Comité vous demande de vous conformer aux exigences suivantes en utilisant les formulaires du Comité prévus à cet effet :

1. De soumettre toute demande de modification au projet de recherche ou à tout document approuvé par le Comité pour la réalisation de votre projet.
2. De soumettre, dès que cela est porté à votre connaissance, tout nouveau renseignement ou toute modification à l'équilibre clinique susceptible d'affecter l'intégrité ou l'éthicité du projet de recherche, d'accroître les risques et les inconvénients pour les participants, de nuire au bon déroulement du projet ou d'avoir une incidence sur le désir d'un participant de continuer à participer au projet.
3. De soumettre, dès que cela est porté à votre connaissance et en lien avec la réalisation de ce projet, tout accident survenu dans votre site.
4. De soumettre, dès que cela est porté à votre connaissance, l'interruption prématurée du projet de recherche, qu'elle soit temporaire ou permanente.
5. De soumettre, dès que cela est porté à votre connaissance, tout problème constaté à la suite d'une activité de surveillance ou de vérification menée par un tiers et susceptible de remettre en question l'intégrité ou l'éthicité du projet de recherche.
6. De soumettre, dès que cela est porté à votre connaissance, toute suspension ou annulation de l'approbation octroyée par un organisme de subvention ou de réglementation.
7. De soumettre, dès que cela est porté à votre connaissance, toute procédure en cours de traitement d'une plainte ou d'une allégation de manquement à l'intégrité ou à l'éthicité ainsi que des résultats de la procédure.
8. De soumettre, dès que cela est porté à votre connaissance, toute déviation au projet de recherche susceptible de remettre en cause l'éthicité du projet.
9. De soumettre une demande de renouvellement annuel de l'approbation du projet de recherche.
10. De soumettre le rapport de la fin du projet de recherche.

Vous pouvez obtenir les formulaires du Comité téléchargeables à partir du site web à l'adresse suivante : http://www.pinel.qc.ca - onglet comité d'éthique de la recherche - formulaires.

Institut Philippe-Pinel de Montréal
Comité d'éthique de la recherche
10905, boulevard Henri-Bourassa Est
Montréal (Québec) H1C 1H1
Téléphone: (514) 648.8461, poste 574
Courriel : secretariat.cer.ippmtl@ssss.gouv.qc.ca
Site du Comité : http://www.pinel.qc.ca

De plus, nous vous rappelons que vous devez conserver pour une période d'au moins un an suivant la fin du projet, un répertoire distinct comprenant les noms, prénoms, coordonnées, date du début et de fin de la participation de chaque sujet de recherche.

Finalement, je vous rappelle que la présente décision vaut pour une année et peut être suspendue ou révoquée en cas de non-respect de ces exigences.

Le Comité d'éthique de la recherche de l'Institut Philippe-Pinel de Montréal est institué par le ministre de la Santé et des Services sociaux pour les fins de l'application de l'article 21 du Code civil du Québec et suit les règles émises par l'Énoncé de politique des trois conseils et les Bonnes pratiques cliniques de la CIH.

Avec l'expression de nos sentiments les meilleurs.

Johane de Champlain
Présidente
Comité d'éthique de la recherche de l'Institut Philippe-Pinel de Montréal.
JdeC/

Institut Philippe-Pinel de Montréal
Comité d'éthique de la recherche
10905, boulevard Henri-Bourassa Est
Montréal (Québec) H1C 1H1
Téléphone: (514) 648 8461, poste 574
Courriel : secretariat.cer.ippm@ssss.gouv.qc.ca
Site du Comité : http://www.pinel.qc.ca/

Le 18 janvier 2017

Monsieur Gilles Côté
Professeur
Département de psychologie

Monsieur,

Les membres du comité d'éthique de la recherche vous remercient de leur avoir acheminé une demande de renouvellement pour votre protocole de recherche intitulé : **Épidémiologie des troubles mentaux, des troubles de la personnalité et de la déficience intellectuelle en milieu carcéral** (CER-07-122-07.04) en date du 18 janvier 2017.

Lors de sa 232e réunion qui aura lieu le 24 février 2017, le comité entérinera l'acceptation de la prolongation de votre certificat jusqu'au 23 février 2018. Cette décision porte le numéro CER-17-232-08-03.09.

Veuillez agréer, Monsieur, mes salutations distinguées.

LA SECRÉTAIRE DU COMITÉ D'ÉTHIQUE DE LA RECHERCHE

FANNY LONGPRÉ
Agente de recherche
Décanat de la recherche et de la création

FL/mct

p. j. Certificat d'éthique

Centre de recherche
Institut
Philippe-Pinel
de Montréal
Université de Montréal

ATTESTATION D'AUTORISATION À UTILISER DES DONNÉES

Par la présente, je, Gilles Côté, Ph.D., chercheur titulaire au Centre de recherche de l'Institute Philippe-Pinel de Montréal, atteste autoriser Nadia Vracotas, étudiante au doctorat en psychologie (3150) à l'Université du Québec à Trois-Rivières, à utiliser les données des projets «Épidémiologie des troubles de santé mental, des troubles de la personnalité et de la déficience intellectuelle en milieu carcéral fédéral» (numéro d'approbation du Comité d'éthique de la recherche : 070216/E/E/A/6) et «projet de 1988 – Étude épidémiologique des problèmes de sante mental en milieu carcéral» (numéro 12-011) pour réaliser sa thèse doctorale.

Gilles Côte, Ph. D.

28 juin 2017

Date

10905, boul. Henri-Bourassa Est
Montréal (Québec) H1C 1H1
Téléphone : (514) 661-3764
Télécopieur : (514) 661-3701
www.pinel.qc.ca

Institut Philippe-Pinel de Montréal

Montréal, le 7 septembre 2017

Monsieur Gilles Côté
Institut Philippe-Pinel de Montréal
10905, boulevard Henri-Bourassa Est
Montréal, Québec
H1C 1H1

Objet: CER IPPM 12-011 - Approbation de la demande de renouvellement annuel.

**Étude épidémiologique des problèmes de santé mentale en milieu carcéral.**

Monsieur,

Vous avez soumis au Comité d'éthique de la recherche de l'Institut Philippe-Pinel de Montréal, par courriel, le 17 août 2017, une demande de renouvellement pour votre projet cité en rubrique.

J'ai le plaisir de vous informer que votre demande de renouvellement a été approuvée par le Comité d'éthique de la recherche de l'Institut Philippe-Pinel de Montréal.

Ainsi, vous pouvez poursuivre votre étude pour un an, et ce, à compter du **14 septembre 2017 jusqu'au 14 septembre 2018**.

Un mois avant la date d'échéance vous devrez faire une demande de renouvellement auprès du Comité d'éthique de la recherche de l'Institut Philippe-Pinel de Montréal, en utilisant le document du Comité prévu à cet effet.

Nous vous rappelons que dans le cadre de son suivi continu, le Comité vous demande de vous conformer aux exigences suivantes en utilisant les formulaires du Comité prévus à cet effet :

1. De soumettre toute demande de modification au projet de recherche ou à tout document approuvé par le Comité pour la réalisation de votre projet.
2. De soumettre, dès que cela est porté à votre connaissance, tout nouveau renseignement ou toute modification à l'équilibre clinique susceptible d'affecter l'intégrité ou l'éthicité du projet de recherche, d'accroître les risques et les inconvénients pour les participants, de nuire au bon déroulement du projet ou d'avoir une incidence sur le désir d'un participant de continuer à participer au projet.
3. De soumettre, dès que cela est porté à votre connaissance et en lien avec la réalisation de ce projet, tout accident survenu dans votre site.
4. De soumettre, dès que cela est porté à votre connaissance, l'interruption prématurée du projet de recherche, qu'elle soit temporaire ou permanente.
5. De soumettre, dès que cela est porté à votre connaissance, tout problème constaté à la suite d'une activité de surveillance ou de vérification menée par un tiers et susceptible de remettre en question l'intégrité ou l'éthicité du projet de recherche
6. De soumettre, dès que cela est porté à votre connaissance, toute suspension ou annulation de l'approbation octroyée par un organisme de subvention ou de réglementation.
7. De soumettre, dès que cela est porté à votre connaissance, toute procédure en cours de traitement d'une plainte ou d'une allégation de manquement à l'intégrité ou à l'éthicité ainsi que des résultats de la procédure.
8. De soumettre, dès que cela est porté à votre connaissance, toute déviation au projet de recherche susceptible de remettre en cause l'éthicité du projet.
9. De soumettre une demande de renouvellement annuel de l'approbation du projet de recherche.
10. De soumettre le rapport de la fin du projet de recherche.

Vous pouvez obtenir les formulaires du Comité téléchargeables à partir du site web à l'adresse suivante :

http://www.pinel.qc.ca - onglet comité d'éthique de la recherche - formulaires.

De plus, nous vous rappelons que vous devez conserver pour une période d'au moins un an suivant la fin du projet, un répertoire distinct comprenant les noms, prénoms, coordonnées, date du début et de fin de la participation de chaque sujet de recherche.

Finalement, je vous rappelle que la présente décision vaut pour une année et peut être suspendue ou révoquée en cas de non-respect de ces exigences.

Le Comité d'éthique de la recherche de l'Institut Philippe-Pinel de Montréal est institué par le ministre de la Santé et des Services sociaux pour les fins de l'application de l'article 21 du Code civil du Québec et suit les règles émises par l'Énoncé de politique des trois conseils et les Bonnes pratiques cliniques de la CIH.

Avec l'expression de nos sentiments les meilleurs.

Johane de Champlain
Présidente
Comité d'éthique de la recherche de l'Institut Philippe-Pinel de Montréal,
JdeC/

Le 25 septembre 2017

Madame Nadia Vracotas
Étudiante
Département de psychologie

Madame,

Le comité d'éthique a reçu votre demande de certification pour le projet **Major mental disorder and homicide among incarcerated men** en date du 8 septembre 2017.

Lors de sa 238e réunion tenue le 22 septembre 2017, le Comité d'éthique, après analyse, a émis un avis favorable à l'attribution du certificat demandé.

Le certificat, dont une copie vous sera acheminée par courrier interne, porte le numéro CER-17-238-07.11 et sa période de validité s'étend du 25 septembre 2017 au 25 septembre 2018. Le certificat rappelle les obligations auxquelles s'engage un responsable de projet dans le contexte du suivi de la certification, je vous invite à en prendre connaissance.

Je vous souhaite la meilleure des chances dans vos travaux et vous prie d'agréer, Madame, mes salutations distinguées.

LA SECRÉTAIRE DU COMITÉ D'ÉTHIQUE DE LA RECHERCHE

SOPHIE PARENT
Agente de recherche
Décanat de la recherche et de la création

SP/kl

p. j. Certificat d'éthique

c. c. M. Gilles Côté, professeur au Département de psychologie

Institut Philippe-Pinel de Montréal

Montréal, le 21 novembre 2017

Monsieur Gilles Côté, Ph. D.
Madame Nadia Vracotas.
Institut Philippe-Pinel de Montréal
10905, boul. Henri-Bourassa Est
Montréal (Québec) H1C 1H1

**Objet : Autorisation de réaliser la recherche suivante :**

**Major Mental Disorder and Homicide among incarcerated men in Québec.**

**CER IPPM 17-18 – 06.**

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Monsieur Côté,

Il nous fait plaisir de vous autoriser à réaliser la recherche identifiée en titre, sous les auspices de l'Institut Philippe-Pinel de Montréal.

Cette autorisation vous permet de réaliser la recherche identifiée en titre à l'Institut Philippe-Pinel de Montréal.

Cette autorisation vous est accordée sur la foi des documents que vous avez déposés auprès de notre établissement, à savoir :

1. Formulaire de demande d'évaluation d'un projet de recherche.
2. Résumé du projet de recherche, daté du 14 novembre 2017.
3. Nadia Vracotas Ethics Proposal, daté du 14 novembre 2017.
4. Nadia Vracotas CV 2017.
5. Signed attestation.

Cette autorisation de réaliser la recherche suppose également que vous vous engagiez :

1. À respecter les dispositions du Cadre de référence des établissements publics du RSSS pour l'autorisation d'une recherche menée dans plus d'un établissement (le Cadre de référence) se rapportant à votre recherche.
2. À respecter le cadre réglementaire de notre établissement sur les activités de recherche.
3. À vous conformer aux demandes du CER évaluateur.
4. À utiliser la version des documents se rapportant à la recherche approuvés par le CER évaluateur.
5. À respecter les moyens relatifs au suivi continu qui ont été fixés par le CER évaluateur.
6. À rendre compte au CER évaluateur et à la signataire de la présente autorisation du déroulement du projet, des actes de votre équipe de recherche ainsi que du respect des règles de l'éthique de la recherche.
7. À conserver les dossiers de recherche pendant la période fixée par le CER évaluateur, après la fin du projet, afin de permettre leur éventuelle vérification.
8. À respecter les modalités arrêtées au regard du mécanisme d'identification des participants à la recherche dans notre établissement, à savoir : la tenue à jour et la conservation de la liste à jour des participants recrutés dans notre établissement. Cette exigence s'applique si des participants sont recrutés dans le cadre du présent projet.
9. À respecter les normes administratives en vigueur dans l'établissement.

La présente autorisation de réaliser la recherche sous les auspices de notre établissement, sera renouvelée sans autre procédure à la date indiquée par le CER évaluateur dans sa décision de renouveler l'approbation éthique de cette recherche.

La présente autorisation peut être suspendue ou révoquée par notre établissement en cas de non-respect des conditions établies. Le CER évaluateur en sera alors informé. Si le CER évaluateur vous informe pendant le déroulement de cette recherche d'une décision négative portant sur l'acceptabilité scientifique ou éthique de cette recherche, vous devrez considérer que la présente autorisation de réaliser la recherche dans notre établissement est, de ce fait, révoquée à la date que porte l'avis du CER évaluateur.

Vous consentez également à ce que notre établissement communique aux autorités compétentes des renseignements personnels qui sont nominatifs au sens de la loi en présence d'un cas avéré de manquement à la conduite responsable en recherche de votre part lors de la réalisation de cette recherche.

Nous vous invitons à entrer en communication avec madame Johane de Champlain, présidente du Comité d'éthique de la recherche, secretariat.cer.ippm@ssss.gouv.qc.ca, pendant le déroulement de cette recherche dans notre établissement, si besoin est.

En terminant, nous vous demandons de toujours mentionner dans votre correspondance au sujet de cette recherche le numéro attribué à votre demande par notre établissement ainsi que le numéro attribué au projet de recherche par le CER évaluateur.

Avec l'expression de nos sentiments les meilleurs.

Docteure Renée Fugère
Présidente directrice générale.
Institut Philippe-Pinel de Montréal.
Personne mandatée par l'établissement pour autoriser la réalisation des projets de recherche.
RF/

c. c. : Madame Johane de Champlain, présidente CER IPPM.