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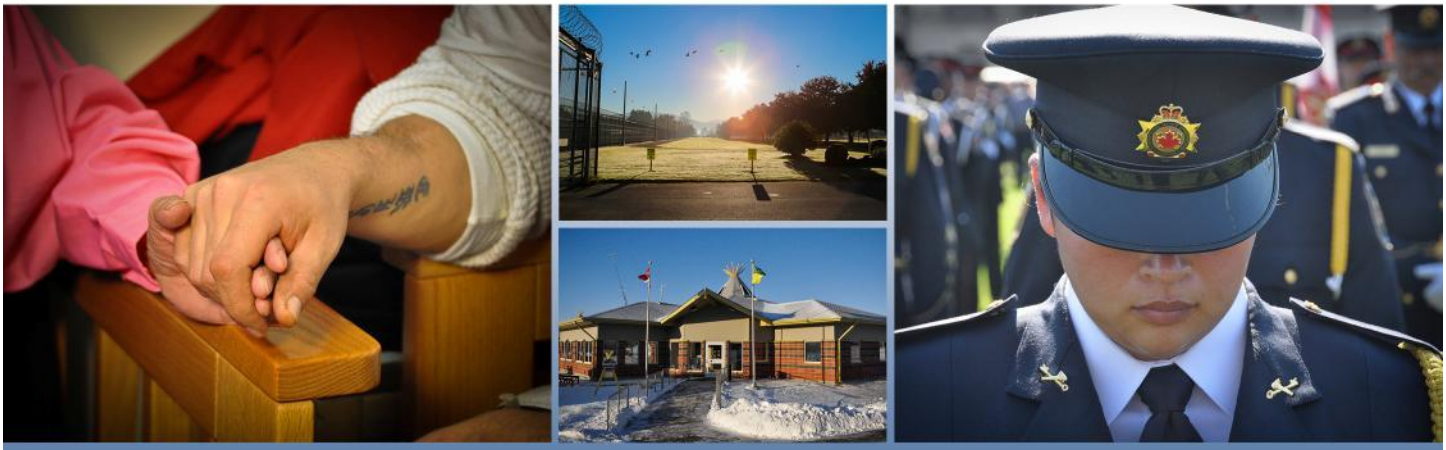

RESEARCH REPORT

National Prevalence of Mental Disorders among Federally Sentenced Women Offenders: In Custody Sample

2018 Nº R-406

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National Prevalence of Mental Disorders Among Federally Sentenced Women Offenders: In Custody Sample

Gregory P. Brown

Jane Barker

Kindra McMillan

Rachel Norman

Institute for Applied Social Research (IASR)
School of Criminology and Criminal Justice
Nipissing University

&

Dena Derkzen

Lynn A. Stewart

Correctional Service of Canada

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Executive Summary

Key words: Federally sentenced women offenders; lifetime and current prevalence of mental disorders; co-occurring disorders; Indigenous women

International studies estimate that as many as 80% of inmates in jails and prisons have a mental disorder, four times the rate found in the general population. Half are likely to have a co-occurring mental disorder with a substance abuse, or antisocial or borderline personality disorder. The literature suggests that the rate of mental disorder is two to four times greater among women inmates, who are typically more likely than men to have a major mental illness, borderline personality disorder, and posttraumatic stress disorder.

The current study determined the prevalence rates of mental disorders among women offenders currently in custody in CSC facilities. Using the Structured Clinical Interview for DSM Axis I and Axis II Disorders (SCID-I and SCID-II) the following disorders were assessed: 1) mood; 2) psychotic; 3) substance use; 4) anxiety; 5) eating; 6) pathological gambling; 7) Antisocial Personality Disorder (APD); and 8) Borderline Personality Disorder (BPD). Rates were obtained for both lifetime and current prevalence (i.e., the past month). Women in custody were approached to participate in the diagnostic interview from February 2016 to October 2016. In total, 154 women in six institutions from across the five regions provided consent and were included in the study.

Results indicated that almost 80% of federally sentenced women in custody meet the criteria for a current mental disorder, including high rates of alcohol and substance use, and APD and BPD. One-third has a current posttraumatic stress disorder. Nearly two-thirds of the women have had a major mental illness (major depression, bi-polar disorder or psychosis) in their lifetime and 17% have a current major mental illness. More than two-thirds have a co-occurring mental disorder with alcohol or substance misuse in combination with APD or BPD. One-third have a GAF score ≤ 50, indicating a serious level of impairment in daily functioning that could interfere with their capacity to actively engage in and benefit from mental health, rehabilitation and recidivism reduction programs and services. Indigenous women have the highest rates of mental disorder, including higher rates of alcohol and substance use disorders, APD and BPD, posttraumatic stress disorder, and higher rates of co-occurring disorders than non-Indigenous women.

The results from the study parallel the findings from international and other Canadian studies. In combination with their relatively small numbers dispersed across the country in six different institutions and five different regions, these high rates of disorder constitute a significant challenge in providing mental health treatment programs to these vulnerable women.

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Introduction

International studies estimate that between 20% - 80% of inmates in jails and prisons have a mental disorder, depending on the definition of mental disorder used, the instrument used to assess symptoms, and whether substance misuse or personality disorder are included in the definition of mental disorder (Andreoli et al., 2014; Brink, 2005; Butler, Indig, Allnutt & Mamoon, 2011; Keene & Rodriguez, 2005; Maccio et al., 2015; Proctor & Hoffmann, 2012; Senior et al., 2013), as much as four times the rate found in the general population (Fazel & Danesh, 2002; Prins, 2014; Sarteschi, 2013; Sirdifield, Gojkovicm, Brooker, & Ferriter, 2009; Steel et al., 2014). High rates of psychosis (3% - 4%), major depression (10% - 30%) and anxiety disorders (20% - 40%) are consistently reported in jail and prison mental health studies (Fazel & Seewald, 2012; Maccio et al., 2015; Prins, 2014; Senior et al., 2013; Vicens et al., 2011); rates of substance use disorders (70% - 80%) and personality disorders (50% - 80%) are as much as eight times greater than found in the general population (Fazel, Hayes, Bartellas, Clerici, & Trestman, 2016; Proctor & Hoffmann, 2012; Sirdifield et al., 2009; Slade & Forrester, 2013). Estimates of co-occurring disorders among prison inmates, most frequently a mental disorder in combination with substance use or personality disorder, range from 20% to more than 50% (Butler et al., 2011; Fazel & Danesh, 2012; Proctor & Hoffman, 2012). The prevalence of mental disorder is two to four times greater among women than men inmates (Al-Rousan, Rubenstein, Sieleni, Deol, & Wallace, 2017; Baillargeon et al., 2009; Binswanger et al., 2010; Fazel et al., 2016; Prins 2014; Senior et al., 2013; Steadman, Osher, Robbins, Case, & Samuels, 2009). Compared to their male counterparts, female inmates are more likely to have been diagnosed with psychosis (4% - 12%), major depression (23% - 56%), bipolar disorder (2.5% - 20%), anxiety disorder (13% - 55%), borderline personality disorder (20% - 54%) and trauma-related disorders (11% - 40%). Men inmates demonstrate a greater frequency of antisocial personality disorder, impulse control disorders, and alcohol abuse (Andreoli et al., 2014; Baillargeon et al., 2009; Binswanger et al., 2010; Butler et al., 2011; Butler, Allnutt, Cain, Owens, & Muller, 2005; Coolidge, Marle, Van Horn, & Segal, 2011; Drapalski, Youman, Stuewig, & Tangney, 2009; Prins, 2014; Trestman, Ford, Zhang, & Wiesbrock, 2007; Tye & Mullen, 2006; Williams et al., 2010).

Canadian studies mirror the international findings, with reported estimates of the prevalence of mental disorder among provincial and federal inmates in the range of 20% - 80% (Beaudette & Stewart, 2016; Brown, Hirdes, & Fries, 2015; Lafortune, 2010; Rezansoff, Moniruzzaman, Gress, & Somers, 2013; Stewart, Wilton, & Cousineau, 2012), two to four times the rate found in the Canadian population (Pearson, Janz, & Ali, 2013; Public Health Agency of Canada, 2015). High rates of psychosis (3% - 9%), depression (10% - 69%), bi-polar disorder (1.5% - 25%), anxiety (17% - 40%), trauma-related disorders (4% -13%), antisocial personality disorder (44% - 83%) and substance misuse disorders (25% - 85%) are consistently reported in the Canadian research (Beaudette & Stewart, 2016; Brink, Doherty, & Boer, 2001; Brown et al., 2013; CIHI, 2008; Corrado, Cohen, Hart, & Roesch, 2000; Derkzen, Booth, McConnell, & Taylor, 2012; Lafortune, 2010; Motiuk & Porporino, 1991; Rezansoff et al., 2013; Stewart et al., 2012). In offender populations, recent estimates of the prevalence of co-occurring mental disorder with a substance abuse disorder exceed 50%, and rates of mental disorder co-occurring with an antisocial personality disorder are around 36% (Beaudette & Stewart, 2016). The prevalence of mental disorder is greater among women compared to men inmates, with women inmates in Canadian jails and prisons showing higher rates of psychosis (5% - 9%), depression (26% - 69%), anxiety (20% - 48%), personality disorder (28% - 83%) and trauma-related disorders (31% - 52%) (Blanchette & Motiuk, 1996; Brown et al., 2013; Derkzen et al., 2012; Lafortune, 2010). There is mixed evidence of a difference in the prevalence of mental disorder between Indigenous and non-Indigenous inmates, though higher rates of substance misuse disorder among Indigenous inmates are consistently reported (Beaudette, Power, & Stewart, 2015; Derkzen et al., 2012).

Men account for more than 90% of the incarcerated population, both in Canada and internationally (Walmsley, 2015); therefore, it is perhaps not surprising that research on the prevalence of mental disorder among offenders has, until recently, focused largely on male inmates and the need to provide mental health assessment and treatment services to this large segment of the inmate population (Drapalski et al., 2009; Fazel et al., 2016; MacDonald, 2013). However, rapid growth in the number of women being incarcerated internationally (estimated as increasing by more than 50% since 2000 (Walmsley, 2015) and in Canada by more than 50% since 2005 (Sapers, 2014), the greater prevalence of mental disorder among women inmates, and growing evidence of the importance of considering gender differences in the management and

treatment of mental disorder (Bartlett et al., 2015; Dalley, 2014; MacDonald, 2013; Schnittker & Bacak, 2016) point to the need for reliable estimates of the prevalence of mental disorder among women in custody in order to identify and develop management and treatment strategies that address the mental health problems of this small, and unique inmate population. To support CSC's mental health strategy (CSC, 2012) and its key principle that "*mental health services respond to the diverse backgrounds and needs of offenders, with particular emphasis on women and Aboriginal offenders*", it is important that accurate estimates of the prevalence of mental disorder among federally sentenced women, including Indigenous women, be determined to support the development and implementation of gender, and culturally appropriate mental health assessment and treatment services.

The current study employs the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I-RV/P; First, Spitzer, Gibbon, & Williams, 2007), and the Structured Clinical Interview for DSM-IV Axis II Personality Disorders (SCID-II; First, Gibbon, Spitzer, Williams, & Benjamin, 1997), generally regarded as the 'gold standard' of clinical research instruments, to interview a national sample of federally sentenced women offenders for the presence of symptoms and diagnoses of mental disorders and personality disorders. The current study complements the previous Correctional Service of Canada commissioned study *National Prevalence of Mental Disorders among Incoming Federally Sentenced Men Offenders* (Beaudette et al., 2015), but differs in methodology in that the women in the current study were not assessed at the intake unit, but rather, after they had been placed in custody.

Method

Participants

All women incarcerated in the six federal women's institutions across the five federal regions during the study period February 2016 – October 2016 were eligible to participate in the study. A breakdown of the total eligible inmate population, volunteer sample, and number of inmates who could not be contacted or declined to participate is shown in Table 1. Of the women actually contacted to participate in the study, only a small proportion (32/690; 4.6%) declined, or withdrew after beginning the clinical interview.

Table 1

Participants and non-Participants by Institution: National Sample (N =154)

Institution	Total Count *n*	Participants *n* (%)	Unable to Contact/No Show *n* (%)	Declined/Withdrew *n* (%)
Fraser Valley Institution	112	29.5 (33)	0	20.5 (23)
Edmonton Institution	167	19.2 (32)	9.0 (15)	0.6 (1)
Okimaw Ohci Healing Lodge	44	38.6 (17)	0	2.3 (1)
Grand Valley Institution	171	20.5 (35)	19.9 (34)	0.6 (1)
Joliette Institution	115	14.8 (17)	0	5.2 (6)
Nova Institution	81	24.7 (20)	35.8 (29)	0
Total	690	22.3 (154)	11.3 (78)	4.6 (32)

Addendum note: Data from seven women in the Regional Psychiatric Centre were added to the in-custody sample after this report was completed. These data will be included in the final report (Prevalence of mental disorder among federally sentenced women: Intake and in-custody samples) that presents the results for both the in-custody and intake samples.

Overall, 22.3% (*N* = 154/690) of federal women inmates incarcerated during the study period participated in the study. The Joliette Institution for Women in the Quebec region had the lowest participation rate (14.8%); the highest rate of participation was at the Okimaw Ohci Healing Lodge (38.6%). The demographic and offender characteristics profile for the study participants is shown in Table 2.

Table 2
Characteristics of Participants (N = 154) and Non-Participants (N = 546)

	Sample Participants % (*n*)[a]	Population Non-Participants % (*n*)[b]	X^2	*df*
Ethnicity				
Aboriginal	32.8 (48)	38.5 (210)	4.50	3
Black	4.0 (6)	4.8 (26)		
White	57.0 (86)	47.1 (257)		
Other	7.3 (11)	9.3 (51)		
Marital status				
Single	50.0 (77)	54.9 (300)	1.21	3
Married/common-law	31.2 (48)	27.7 (151)		
Divorced, separated, or widowed	15.6 (24)	14.3 (78)		
Other	3.3 (5)	3.1 (17)		
Criminogenic need level (at intake)				
Low	11.0 (17)	6.6 (36)	6.32*	2
Medium	37.0 (57)	30.8 (168)		
High	52.0 (80)	61.4 (335)		
Criminal history risk level (at intake)				
Low	33.1 (51)	21.6 (118)	8.19*	2
Medium	35.1 (54)	40.7 (222)		
High	31.8 (49)	36.4 (199)		
Major admitting offence				
Homicide related	24.7 (38)	24.5 (134)	11.06[1]	6
Robbery	9.7 (15)	13.0 (71)		
Drug offences	31.8 (49)	25.5 (139)		
Assault	7.1 (11)	15.0 (82)		
Sexual offences	3.3 (5)	2.9 (16)		
Property offences	14.9 (23)	10.1 (55)		
Other violent offences	†	3.7 (20)		
Other non-violent offences	5.8 (9)	5.1 (28)		
Security level (at intake)				
Minimum	41.6 (64)	23.4 (128)	19.23***	2
Medium	42.2 (65)	55.3 (302)		
Maximum	16.2 (25)	20.3 (111)		
Sentence type				
Determinate	82.5 (127)	83.3 (455)	0.09	1
Indeterminate	17.5 (27)	16.5 (90)		
Average sentence length in years (SD)	3.7 (1.9)	3.8 (2.5)	t =0.418	580

†Information suppressed due to frequencies fewer than 5 in one category.
[a] n = 3 missing for variable 'Ethnicity' among sample participants
[b] n = 2 missing for variable 'Ethnicity' among comparison sample; n = 7 missing for 'Criminogenic need' and 'Criminal history'; n = 1 missing for 'Major admitting offence' and 'Sentence type'; n = 5 missing for 'Security level'
[1] chi-square calculated for 2 X 7 table due to low cell count for participants 'Other violent offences'
* $p < .05$, ** $p < .01$, *** $p < .001$

There are a number of statistically significant differences between the participant sample and the remaining population of federal women inmates who did not participate in the study. Sample participants demonstrated statistically significantly lower criminogenic need and criminal history risk levels at intake, and are also significantly more likely to be placed in minimum security. There was no difference between participants and non-participants in demographic factors (including age: 36 and 36 respectively, $t = 0.000$, $p = 1.00$), major admitting offence or sentence type, or average sentence length ($t = 0.418$, $p = 0.676$).

Given the relatively small sample size, institutional or regional comparisons of demographic and offender characteristics are not presented.

Measures/Material

Structured Clinical Interview for DSM-IV-TR Axis I and Axis II Disorders (SCID-I and SCID-II). The SCID-I is a semi-structured clinical interview designed for diagnosing DSM-IV1 Axis I mental disorders (First et al., 2007). The Research Version of the SCID-I/NP used in the current study is longer than the Clinician Version, as it contains more detailed information about specific disorders and their subtypes, and level of severity and methods of coding that is diagnostically useful for research purposes, and can be easily adapted to suit specific research objectives (Biometrics Research, 2017a). In the current study, the SCID-I/NP was used to assess the following disorders: 1) mood, 2) psychotic, 3) substance use, 4) anxiety, 5) eating, and 6) pathological gambling. The SCID-II (First et al., 1997) is a version of the SCID used to assess DSM-IV-TR Personality Disorders. Eleven different personality disorders are assessed, along with two additional provisional disorders (Biometrics Research, 2017c; Martin, 2014). In the current study, the SCID-II was used to assess for 7) anti-social personality disorder (APD) and 8) borderline personality disorder (BPD). Both lifetime and current prevalence (i.e., in the past month) of mental disorder was assessed where sufficient information was available to the interviewers. The SCID-I and SCID-II clinical interviews were completed in hardcopy, paper form.

[1] DSM-IV-TR - Diagnostic and Statistical Manual of Mental Disorders, fourth edition, text revision, (American Psychiatric Association, 2000)

The SCID and its various versions are widely considered to be the 'gold standard' for assessing DSM-IV-TR Axis I and Axis II disorders (Corrigan, Mueser, Bond, Drake, & Solomon, 2008; Shear et al., 2000), and a large body of research supports moderate to strong psychometric properties (reliability, validity, sensitivity, specificity) of the SCID I and SCID-II (Biometrics Research, 2017b; Chmielewski, Clark, Bagby, & Watson, 2015; DeMarce, Lash, Parker, Burke, & Grambow, 2013; Fennig, Craig, Lavelle, Kovasznay, & Bromet, 1994; Germans, Van Heck, Masthoff , Trompenaars, & Hodiamont, 2010; Lobbestael, Leurgans, & Arntz, 2011; Ryder, Costa, & Bagby, 2007; Zanarini & Frankenburg, 2001). 2

The SCID-I and SCID-II have been widely used internationally in community and institutional populations, including with psychiatric patients and offender populations (Chen, Chen, & Hung, 2016; Guy, Poythress, Douglas, Skeem, & Edens, 2008; Komarovaskaya, Booker Loper, & Warren, 2007; O'Brien, Mortimer, Singleton, & Meltzer, 2003; Roberts & Coid, 2010; Steadman, Robbins, Islam, & Osher, 2007; Trestman et al., 2007; Ullrich et al., 2008; Walter, Wiesbeck, Dittmann, & Graf, 2011; Wetterborg, Långströmb, Andersson, & Enebrink, 2015; Zimmerman, Ruggero, Chelminski, & Young, 2010), and with Canadian federal inmates (Beaudette & Stewart, 2016; Power & Beaudette, 2014; Power & Usher, 2011a, 2011b).
Modified Global Assessment of Functioning – Revised (GAF). To ensure consistency and comparability of results with the previous study of the prevalence of mental disorder among federally-sentenced male inmates (Beaudette et al., 2015), the GAF measure of symptom severity and global level of functioning was used in the current study. The GAF is perhaps the most widely used measure of psychological, social and occupational functioning in clinical and research settings, and by legal, administrative, and insurance organizations in making decisions regarding level of impairment and eligibility for treatment (Gold, 2014; Støre-Valen et al., 2015). Ratings on the GAF scale range from 90 (absent or minimal symptoms) to 0 (serious symptoms and functional impairment, danger to self or others, mental illness), with a GAF score of 50 or less representing serious symptoms or impairment of functioning (Hall, 1995; WHO, 2004). The

[2] For a more in-depth review of the psychometric properties of the SCID-I and SCID-II, see Beaudette, Power, & Stewart (2015). *National prevalence of mental disorders among incoming federally-sentenced men offenders*. Ottawa, Ontario: Correctional Service of Canada.

GAF scale has been shown to have adequate reliability and validity (Rush et al., 2008; Söderberg, Tungström, & Åke Armelius, 2005; Smith et al., 2011), and can be easily administered with little training or clinical expertise.

Procedures/Analytic Approach

Research Design. The study was conducted under the terms of the Memorandum of Understanding (MOU) between the Correctional Service of Canada and the Institute for Applied Social Research (IASR) of the School of Criminology and Criminal Justice at Nipissing University. The Research Ethics Board at Nipissing University (NUREB) reviewed and approved the study according to the *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans,* including Chapter Nine – Research Involving the First Nations, Inuit and Métis Peoples of Canada (Government of Canada, 2014). Dr. Jane Barker and Kindra McMillan, the IASR Senior Research Assistant, and Rachel Norman, IASR Research Assistant were responsible for organizing the data collection, conducting the clinical interviews, and overseeing the data entry, data verification, and preliminary reporting of results. CSC organizational support for the study was provided by Interventions and Women Offenders Research and by the Aboriginal Initiatives Directorate.

A cross-sectional or 'snap shot' survey research design (Rothman, Greenland, & Lash, 2008) was used to estimate the prevalence of mental disorder among the federal women inmates. Owing to the national scope of the study and the six institutional sites involved in the research, the survey was conducted over an extended period, from February 2016 to October 2016.

Assessor Training. The IASR researchers were trained in the administration of the SCID-I and SCID-II instruments by completing five days of self-directed learning using the training package provided by Biometric Research (http://scid4.org/index.html), which included two user's manuals, two written case examples, and eight instructional DVD's. Upon completion of the training and throughout the course of the data collection, questions or concerns about the use of the instruments were recorded and discussed with the psychologist on the research team Dr. Barker, who had extensive prior experience in using mental health assessment instruments, and within the federal women's prison environment. To ensure consistency in completion of the SCID instruments, two members of the research team were present at each of the first twenty clinical interviews completed. The pairing of the researchers in teams of two at each of the institution sites further ensured that any questions about the scoring of the instruments could be

immediately addressed.

Participant Recruitment. Beginning February 2016, members of the research team began visits on a rotating basis to each of the six federal women's institutions in Canada. In advance of each visit, an information letter was sent by the Director, Research Branch CSC to the Warden of the institution, explaining the research and asking for an on-site contact to be designated to assist the IASR researchers in making the arrangements to conduct the research. Upon arriving at each institution, the IASR researchers would meet with the designated on-site contact to review the arrangements and any institutional requirements, to provide any clarification or additional information if required, and to meet with the on-site Elder if available.

A systematic sampling strategy (Bruce, Pope, & Stanistreet, 2008) was used to identify potential participants for the study. With the assistance of the on-site contact, the IASR researchers chose every third name on the institutional roster of inmates, and contacted that inmate, in person or by institutional telephone, to explain the study and to request their participation. A total of $N = 154$ women (22.3% of the total federal female inmate population) volunteered to participate and fully completed the interviews; 78 of the women contacted (11.3% of total population) could not be reached or did not return a telephone call or did not show up for an arranged interview; 32 women (4.6% of total population) declined to participate or did not complete the interview. Throughout the course of each of their on-site visits, the IASR researchers continued the systematic sampling strategy, until the time allotted for the visit came to an end. Larger institutions (Grand Valley and Edmonton) were visited twice. Data collection was completed in October 2016.

Informed Consent and Data Management. No compensation or incentive was provided in return for participating in the study. The IASR researchers provided inmates who volunteered to participate with a verbal summary of the informed consent form, and encouraged inmates to ask questions about the procedures to be employed and the terms of their participation. All participants were then asked to sign a hardcopy of the informed consent form prior to proceeding with the SCID interviews, which included a request for permission to access their offender management system (OMS) file for the purpose of the research. Debriefing procedures were outlined on the consent form. Interviews were conducted in English at the Nova, Grand Valley, Edmonton and Fraser Valley institutions and Okimaw Ohci Healing Lodge, and in French or English at the Joliette institution. As the SCID-I and SCID-II assessments were used for research

not diagnostic purposes, the results were not shared with the participants.

The SCID-I and SCID-II clinical interviews were completed in hardcopy, paper form. A unique study participant identifier number was created so that inmate names and FPS numbers were not recorded on the completed clinical interviews, but rather kept in a separate, secure file location accessible only to the IASR Senior Research Assistant. Completed interviews were returned by the IASR researchers to Nipissing University, and kept in a locked filing cabinet in a secure office. An IASR student research assistant entered the completed interview data into the IBM SPSS Statistics 24 (IBM Corporation, 2016) program for the purposes of the data analysis. A merged data file, which combined the SCID-I and SCID-II data with inmates' demographic and offender characteristics, was created by the CSC Interventions and Women Offenders Research staff for the purposes of the data analysis and reporting of results.

Statistical Techniques. Chi-square analyses and Student's t-tests of differences between means were conducted to identify statistically significant differences between the participant sample and the comparison non-participant sample, and to test differences in the distribution of GAF scale scores based on Indigenous ancestry. Estimates of the lifetime and current prevalence of mental disorder were calculated by dividing the number women inmates meeting the diagnostic criteria for a particular disorder (or group of disorders) by the total sample size (N = 154). As the sample of women federal inmates is small, no comparative data by institution or region are shown, and estimates of the prevalence of mental disorder and comparisons of differences between female and male prevalence rates should be interpreted with serious caution using the current methodology. An upcoming second study, assessing women at intake, will provide solid comparisons between incoming men and women.

Results

Prevalence of Mental Disorders among Federally Sentenced Women

The prevalence rates of mental disorders for the national sample of incarcerated federally sentenced women (*N* = 154) are presented in Table 3.

Table 3
Prevalence Rates of Mental Disorders among Federal Women Offenders: In Custody Sample (N = 154)

Disorder	Lifetime % (*n*)	Current % (*n*)
Any disorder	**92.9 (143)**	**79.2 (122)**
Mood disorders	**61.7 (95)**	**22.1 (34)**
Bi-polar disorders[a]	10.4 (16)	4.5 (7)
Major depressive disorder	46.8 (72)	9.7 (15)
Dysthymic disorder	9.7 (15)	9.1 (14)
Mood Disorders – other[b]	7.8 (12)	†
Psychotic disorders[c]	**7.1 (11)**	**4.5 (7)**
Alcohol and substance use disorders (life time only)	**76.0 (117)**	**-**
Alcohol abuse or dependence	48.7 (75)	-
Non-alcohol substance abuse or dependence	72.1 (111)	-
Anxiety disorders	**57.1 (88)**	**53.9 (83)**
Panic disorder	18.8 (29)	14.3 (22)
Phobias[d]	18.8 (29)	17.5 (27)
Obsessive-compulsive disorder	10.4 (16)	10.4 (16)
Posttraumatic stress disorder	34.4 (53)	33.1 (51)
Generalized anxiety disorder	13.6 (21)	13.0 (20)
Anxiety Disorders – other[e]	7.1 (11)	7.1 (11)
Eating disorders	**16.2 (25)**	**11.0 (16)**
Anorexia Nervosa	5.8 (9)	†
Bulimia Nervosa	6.5 (10)	5.8 (9)
Binge-eating disorder	3.9 (6)	†
Pathological gambling	**13.6 (21)**	†
Borderline personality disorder (lifetime only)	**33.1 (51)**	-
Antisocial personality disorder (lifetime only)	**49.4 (76)**	-

Note. Percentages may not add to 100% as participants could meet the diagnostic criteria for more than one disorder. Percentages may vary due to missing data for some diagnoses (i.e. denominators may vary).
† Information suppressed due to frequency fewer than 5 in one category.
[a] Bi-polar disorders include bi-polar I disorder, bi-polar II disorder and other bi-polar disorder; [b] Mood disorders - other include depressive disorder not otherwise specified, mood disorder due to a general medical condition, substance-induced mood disorder; [c] Psychotic disorders include schizophrenia, schizophreniform, schizoaffective, delusional disorder, brief psychotic disorder, substance abuse or general medical condition causing psychotic symptoms, substance induced psychotic disorder, and psychotic disorder not otherwise specified; [d] Phobias include agoraphobia without history of panic, social phobia and specific phobia; [e] Anxiety disorders include anxiety disorder due to a general medical condition, substance-induced anxiety disorder and anxiety disorder not otherwise specified.

For the purposes of analysis and discussion, and as a consequence of the very small

numbers of women reported for many of the differential diagnostic categories, only major categories of mental disorder and grouped differential diagnostic categories are presented here. Prevalence rates for major categories of mental disorder are presented in bold, followed by rates for the grouped diagnostic categories. Major categories of mental disorder prevalence rates represent the percentage of inmates with at least one diagnosis within the major category. Complete results for major categories and all differential diagnostic categories are shown in Appendix A. Only lifetime prevalence of alcohol or substance use disorder is reported as it was not possible to validly assess current use among the incarcerated women.

In line with previous international and Canadian studies, federally sentenced women offenders demonstrated a higher lifetime and current prevalence of psychotic disorders (L: 7.1%; C: 4.5%), mood disorders (L: 61.7%; C: 22.1%) including major depression (L: 46.8%; C: 9.7%), anxiety disorders (L: 57.1%; C: 53.9%), posttraumatic stress disorder (L: 34.4%; C: 33.1%) and borderline personality disorder (L: 33.1%), in the order of four times greater than reported general population rates (Public Health Agency of Canada, 2015; Steel et al., 2014), and one and a half to two times greater than reported among men inmates (Lafortune, 2010; Prins, 2014; Schnittker & Bacak, 2016; Steadman et al., 2009). Estimates of the lifetime prevalence of alcohol (L: 48.7) and substance use (L: 72.1%) disorders are two to eight times greater than reported in the general population (Fazel et al., 2016; Fazel, Bains, & Doll, 2006; Pearson et al., 2013).

A breakdown of the prevalence of mental disorders among the sample of federally sentenced women by Indigenous and non-Indigenous ancestry, for major categories of mental disorder and grouped differential diagnostic categories, is shown in Appendix B. Owing to the very small/zero number of Indigenous women reported in many of the diagnostic categories, the results should be interpreted with caution. Almost without exception, the prevalence of mental disorders is greater among Indigenous women compared to their non-Indigenous counterparts. The prevalence of psychotic disorders, alcohol and substance abuse disorders and anxiety and eating disorders is greater among Indigenous women, along with pathological gambling and antisocial and borderline personality disorders. As almost the lone exception, Indigenous women evidence a lower prevalence of mood disorders overall, though current prevalence of major depressive disorder is still greater than among non-Indigenous women. In an Australian study, Butler, Allnutt, Kariminia, and Cain (2007) also reported a higher prevalence of mental disorders

generally among Indigenous Australian women compared to non-Indigenous women inmates, though more recently, using the PAI, Derkzen et al., (2012) observed almost no difference between Indigenous and non-Indigenous women inmates in Canadian federal custody, except in relation to substance abuse.

Overall, the prevalence rates of mental disorder among the national sample of federally sentenced women parallel the findings from other international and Canadian research: women inmates have higher lifetime and current rates of mental disorder compared to the general population and compared to male inmates; they are more likely to have symptoms of major depression, psychosis, anxiety disorder, posttraumatic stress disorder and borderline personality disorder, accompanied by high rates of alcohol and substance misuse.

Prevalence Rates of Mental Disorder and Major Mental Illness

For legal, diagnosis and treatment purposes (Hoge, Greifinger, Lundquist, & Mellow, 2009; Magaletta, Diamond, Faust, Daggett, & Camp, 2009; Reingle Gonzalez, & Connell, 2014; Sarteschi, 2013), recent studies of mental disorder in correctional inmate populations distinguish between major mental illness, substance abuse, and personality disorder as different disorders requiring generally distinct treatment and institutional management responses (Baillargeon et al., 2009; Brandt, 2012; Fazel & Seewald, 2012; Steadman et al, 2009).

Lifetime and current prevalence rates for any mental disorder, with and without alcohol and substance use or antisocial or borderline personality disorders included, are reported for the national sample of federally sentenced women (N =154) in Table 4, accompanied by lifetime and current estimates of the prevalence of major mental illness (major depressive disorder, bi-polar disorder or psychotic disorder) not including alcohol, substance use or personality disorders (if they are the only mental disorders).

More than ninety percent of women in the sample met the criteria for any mental disorder during their lifetime, and nearly eighty percent met the criteria for any current mental disorder.

Table 4

Prevalence Rates of Any Mental Disorder and Major Mental Illness among Federally Sentence Women Offenders: In Custody Sample (N = 154)

	% (n)
Criteria met for any disorder – lifetime	92.9 (143)
Criteria met for any disorder – current	79.2 (122)
Any disorder not including APD or BPD only	
Criteria met– lifetime	90.9 (140)
Criteria met– current	61.0 (94)
Any disorder not including alcohol/substance use disorders only	
Criteria met– lifetime	87.0 (134)
Criteria met– current[a]	78.6 (121)
Any disorder not including APD or BPD or alcohol/substance use disorder only	
Criteria met– lifetime	83.8 (129)
Criteria met– current	60.3 (93)
Rates of major mental illness[b] – lifetime	60.3 (93)
Rates of major mental illness[b] – current	16.9 (26)

Note. APD = Antisocial personality disorder; BPD = Borderline personality disorder.
Note: Reference to these calculations not including SUD or APD or BPD does not mean that women with these disorders were not included but rather that that they were not contributing to the prevalence considered if the ONLY diagnosis was for these disorders.
[a] Rates of current alcohol/substance use disorder could not be validly assessed given that women are in-custody when they participated in the study.
[b] Major mental illness corresponds to a diagnosis of any one of the following: major depressive disorder, bi-polar I disorder, bi-polar II disorder, or any psychotic disorder.

When alcohol or substance use disorders and antisocial personal disorder (APD) and borderline personal disorders (BPD) are not included as the only diagnoses, rates of lifetime (83.8%) and current (60.3%) mental disorder are still very elevated. On the other hand, lifetime (60.3%) and current (16.9%) prevalence rates for conditions generally defined as major mental illnesses representing serious impairments of functioning are substantially lower though, again, still elevated relative to community samples (Beaudette, & Stewart, 2016; Derkzen et al., 2012; Fazel & Seewald, 2012; Lynch et al., 2014; Prins, 2014; Senior et al., 2013, Stewart et al., 2012).

The breakdown of prevalence rates of mental disorder and major mental illness among Indigenous and non-Indigenous federally sentenced women is shown in Table 5. All (100%) Indigenous women met the criteria for a diagnosis of a mental disorder at some point in their

lifetime, and almost all (95.8%) have a current diagnosis of a mental disorder. Compared to the non-Indigenous women, Indigenous women demonstrated higher lifetime and current prevalence rates for any mental disorder, with and without alcohol and substance use disorders and personality disorders included. However, the lifetime prevalence of major mental illness is higher among non-Indigenous women, and rates of current major mental illness do not significantly differ (18.8% compared to 16.0%; see Table 5)

Table 5
Prevalence Rates of Any Mental Disorder and Major Mental Illness in Indigenous and non-Indigenous Federal Women Offenders: In-Custody Sample N = 154

	Indigenous *N* = 48 % (*n*)	Non-Indigenous *N* = 106 % (*n*)
Criteria met for any disorder – lifetime	100 (48)	89.6 (95)
Criteria met for any disorder – current	95.8 (46)	71.7 (76)
Any disorder not including APD or BPD only		
Criteria met– lifetime	93.8 (45)	89.6 (95)
Criteria met– current	66.7 (32)	58.5 (62)
Any disorder not including alcohol/substance use disorders only		
Criteria met– lifetime	95.8 (46)	83.0 (88)
Criteria met– current[a]	93.8 (45)	71.7 (76)
Any disorder not including APD or BPD or alcohol/substance use disorder only		
Criteria met– lifetime	85.4 (41)	83.0 (88)
Criteria met– current	64.6 (31)	58.5 (62)
Rates of major mental illness[b] – lifetime	54.2 (26)	63.2 (67)
Rates of major mental illness[b] – current	18.8 (9)	16.0 (17)

Note. APD = Antisocial personality disorder; BPD = Borderline personality disorder. [a] Rates of current alcohol/substance use disorder could not be validly assessed given that women are in-custody when they participated in the study. [b] Major mental illness corresponds to a diagnosis of any one of the following: major depressive disorder, bi-polar I disorder, bi-polar II disorder, or any psychotic disorder.

Prevalence of Co-occurring Disorders

International and Canadian studies report that as many as half of correctional inmates have a mental disorder co-occurring with a substance use or a personality disorder (Beaudette & Stewart, 2016; Fazel & Danesh, 2012; Proctor & Hoffman, 2012), with women demonstrating higher rates of co-occurring disorders compared to men (Al-Rousan et al., 2017; Butler et al., 2011; Houser & Welsh, 2014). Co-occurring disorders complicate treatment and institutional management responses to mental disorder and recovery, often leading to poorer outcomes for inmates, including increased recidivism (Fazel et al., 2016; Wilton & Stewart, 2012). The prevalence of lifetime mental disorder co-occurring with alcohol and substance use and personality disorders, by Indigenous and non-Indigenous ancestry and for the total sample (*N* = 154) is shown in Table 6.[3]

Table 6
Co-occurring Disorders among Federal Women Offenders: In-Custody Sample (N = 154)

	Indigenous *n* = 48 % (*n*)	Non-Indigenous *n* = 106 % (*n*)	Total Sample *N* =154 % (*n*)
Lifetime prevalence rates	*n* = 48	*n*= 95	*n* = 143
Any mental disorder and alcohol/substance use[a]	89.6 (43)	77.9 (74)	81.8 (117)
Any mental disorder and APD or BPD	87.5 (42)	51.6 (49)	63.6 (91)

Note. APD = Antisocial Personality Disorder; BPD = Borderline Personality Disorder
[a] Rates of current substance use were limited given that women are in-custody when they participated in the study; therefore, substance abuse and alcohol use disorders diagnoses rely on lifetime estimates only. Rates of current alcohol/substance use disorder could not be validly assessed given that women are in-custody when they participated in the study.

Overall, the estimates of lifetime prevalence rates for co-occurring disorders are in line with other international and Canadian research. Co-occurring mental disorders with alcohol and substance use disorders, almost always in combination with APD and BDP, are characteristic of more than eighty percent of federal women inmates with mental health problems. Research

[3] As APD and BPD were assessed for lifetime occurrence only, and as it was only possibly to validly assess alcohol and substance use disorders for lifetime occurrence. This does not mean that women with substance abuse disorders were not included but rather that that they were not considered if the ONLY diagnosis was for these disorders. The same is true of APD calculations

examining men found that those with co-occurring disorders had an increased likelihood of institutional infractions and less positive outcomes on release (Lynch et al., 2014; Priester et al., 2016; Wilton & Stewart, 2012). The confluence of mental disorder with either alcohol/substance use disorders and APD or BPD represents a significant challenge to delivering effective mental health treatment to inmates (Mir et al., 2015; Priester et al., 2016). Lifetime prevalence rates for co-occurring disorders are higher among Indigenous women in the sample where mental disorder is co-occurring with alcohol and substance use disorders in combination with APD and BDP.

Mental Disorder and Global Assessment of Functioning (GAF)

The modified version of the global assessment of functioning (GAF) scale scores provide a measure of the current level of psychological, social, and occupational impairment. Grouped GAF scale scores for the national sample of federally sentenced women, by DSM-IV Axis I and Axis II – APD and BPD personality disorder dimensions are shown in Table 7. A GAF score of 50 or less is considered to represent serious symptoms of mental disorder and/or impairment of functioning (Hall, 1995; WHO, 2004). Complete GAF scale score results for the national sample are shown in Appendix C.

Nearly two-thirds (61.3%) of women with a current Axis I diagnosis were scored as having none to moderate impairment stemming from their mental disorder, indicating a reasonably good level of functioning in their daily life. Similarly, among women with a diagnosis of APD or BPD only, the majority (94.4% and 66.7% respectively) demonstrate a good level of functioning. On the other hand, among women with both an Axis I and either APD or BPD, nearly half (49.2%) demonstrated serious impairment in daily functioning (GAF $\leq$ 50). It should be noted that the numbers in Table 7 only account for individuals who met the criteria for a current Axis I disorder (without alcohol or substance use included if they were the only diagnosis) or APD or BPD (if they were the only diagnosis).

Table 7

GAF Scale Scores by Mental Disorder for Current Personality Disorder Diagnoses: In-Custody Sample (N = 154)

GAF Score	Axis I[a] Disorders *n* = 93 % (*n*)	APD only *n* = 18 % (*n*)	BPD only[a] *n* = 3 % (*n*)	Axis I & APD or BPD *n* = 63 % (*n*)
51-90 - moderate to absent	61.3 (57)	94.4 (17)	66.7 (2)	50.8 (32)
1-50 – some serious to immediate danger to self	38.7 (36)	5.6 (1)	33.3 (1)	49.2 (31)

Note. GAF = Global Assessment of Functioning. [a] Excluding alcohol and substance use disorders if they are the only disorders in Axis I.

The GAF scale scores for a current major mental illness (major depression, bi-polar disorder I, bi-polar disorder II or psychotic disorder) are reported for the national sample of federally sentenced women (*N* =154) in Table 8. Among women with a current major mental illness, 69.2% (18/26) demonstrate a serious level of impairment in daily functioning; this group represents 11.7% (18/154) of the total national sample of federally sentenced women. More than one-third (35/93 = 37.6%) of women with either a major mental illness or APD or BPD evidence a serious level of impairment in daily functioning; this accounts for 22.7% % (35/154) of the national sample.

Table 8

GAF Scale Scores ≤ 50, by Categories of Mental Disorder: In-Custody Sample (N = 154)

	N = 154 GAF scores ≤50 % (*n*)
Major mental illness[a] (*n* = 26)	11.7 (18/154)
Either major mental illness or BPD or APD (*n* = 93)	22.7 (35/154)
Either major mental illness or BPD (*n* = 61)	20.8 (32/154)
Any Axis 1 disorder (excluding alcohol and substance abuse if they are the only disorders) (*n* = 93)	23.4 (36/154)

[a] Major mental illness corresponds to a diagnosis of any one of the following: major depressive disorder, bi-polar I disorder, bi-polar II disorder, or any psychotic disorder.

Overall, for all of the women offenders participating in the study with any current mental

disorder, 32.8% (40/122) demonstrated at least some serious symptoms or impairment in functioning.

Grouped GAF scale cut-off scores, by Indigenous ancestry, are shown in Table 9. Though the percentage of Indigenous women offenders with a GAF score ≤ 50 is greater than for non-Indigenous inmates, there is no statistically significant difference (X^2 (1, n = 154) = 1.964, p = 0.161) between level of impairment as measured by the GAF scale and Indigenous status.

Table 9

GAF Scale Scores by Indigenous Ancestry: In-Custody Sample (N = 154)

Level of Impairment (GAF score)	Indigenous *n* = 48 % (*n*)	Non-Indigenous *n* = 106 % (*n*)	Total Sample *N*=154 % (*n*)
51-90 - moderate to absent	66.7 (32)	77.4 (82)	74.0 (114)
1-50 – some serious to immediate danger to self	33.3 (16)	22.6 (24)	26.0 (40)

Note: Lower scores indicate greater impairment

Discussion

Studies estimating the prevalence of mental disorder among prison inmates can provide important information both about the number of inmates with mental health problems currently in the prison population, and the severity and complexity of the mental health problems supporting organizational responses to treatment and management (Baillargeon et al., 2009; Prins, 2014; Reingle Gonzalez, & Connell, 2014; Sarteschi, 2013). A body of international research suggests that the prevalence of mental disorders among prisoners is as much as four times the rate in the general population. High rates of psychosis, major depression, and anxiety disorders are combined with substance use or personality disorders in as many as half of inmates who have a mental health problem. Studies typically show that women inmates have a prevalence rate of mental disorders two to four times greater than men.

A growing body of Canadian research has found estimates of mental disorder among inmates that are similar to international findings. Compared to the general Canadian population, the prevalence of mental disorders among inmates is two to four times higher, with more than half of inmates meeting diagnostic criteria for a co-occurring substance use disorder, and more than one-third for a co-occurring personality disorder (Pearson et al., 2013; Public Health Agency of Canada, 2015). All (100%) of Indigenous women inmates who participated in the current national study demonstrated the criteria for a lifetime diagnosis of a mental disorder, and almost all (95.8%) have a current diagnosis of a mental disorder. Indigenous women evidenced higher rates of mental disorders, alcohol and substance use and antisocial and borderline personality disorders compared to non-Indigenous women.

Among the federally sentenced women, co-occurring mental disorders and alcohol/substance disorders (L:81.8%) %) or personality disorders (L: 63.6%) were at least four times greater than the prevalence rate observed in an Ontario population study (Rush & Koegl, 2008). The high prevalence of co-occurring mental disorders among federal women inmates may pose significant challenges to the design and implementation of effective treatments and programs that address both the mental health and criminogenic components of complex co-occurring disorders. Furthermore, the prevalence of co-occurring disorders, alcohol and substance misuse in combination with a personality disorder, is higher among Indigenous compared to non-Indigenous women inmates. The relatively small number of federally sentenced

women (690/14, 203 = 4.9% of the federal offender population; Public Safety Canada, 2016) spread out across the country in six facilities over five regions, their high current rates of mental disorders and co-occurring disorders, make it challenging to deliver the effective mental health treatment services and correctional interventions the women require.

The results of the modified version of the Global Assessment of Functioning (GAFm) scale show that, overall, among women offenders with any current mental disorder, 32.8% (40/122) demonstrated at least some serious symptoms or impairment in functioning. More than two-thirds (18/26 = 69.2%; or, 11.7% of the total national sample) of women with a major mental illness demonstrate a serious level of impairment in daily functioning (GAF $\leq$ 50) that could have an impact on their capacity to actively engage in and benefit from mental health, rehabilitation, and recidivism reduction programs and services. There were no statistically significant differences in GAF scale scores between Indigenous and non-Indigenous federally sentenced women. Federally sentenced women in this study demonstrated higher mean GAF scores overall ($\overline{x}$ = 63.81) compared to psychiatric hospital patients (Mean = 31.88 admission: Mean = 47.72 at discharge; Vatnaland, Vatnaland, Friis, & Opjordsmoen, 2007) and community mental health patients (Mean = 61.24; Tungström, Söderberg, & Armelius, 2005).

Limitations of the Study

Compared to federally sentenced women (*N* = 546) who did not participate in the study during the study period (see Table 2) the women who participated in the study (*N* = 154) demonstrated statistically significantly lower intake criminogenic need and risk levels and were also significantly more likely to be placed in minimum security at intake. This could possibly attenuate estimates of the prevalence of mental disorder, given that higher risk women may be more likely have symptoms of a mental disorder. At the same time, the most severely mentally ill women receiving treatment in specialized mental health units, and women in administrative segregation or those deemed too great a risk to participate, were not eligible to participate in this component of the study[4], possibly contributing to an underestimation of the extent of mental

[4] Data collection at the Regional Psychiatric Centre, the facility that houses women requiring intensive psychiatric treatment is scheduled for December 2017.

disorder in this population.

The national scope of the study dictated that conducting the SCID interviews with the study participants had to take place over an extended period of time (February 2016 – October 2016), possibly introducing 'historical' biases (changes in organizational practices, sentencing criteria, high profile media) into the recruitment and assessment of participants.

Owing to the relatively small sample size (N = 154), it was not possible to examine regional or institutional differences in the prevalence of mental disorder among federally sentenced women. The national study of the prevalence of mental disorder among federal male inmates suggested that there were significant differences in the regional prevalence of mental disorders, substance and alcohol disorders and personality disorders, along with differences in GAF scale scores.

Nevertheless, use of the SCID-I and SCID-II instruments, considered to be the 'gold standard' for the assessment of mental disorders, coupled with the strong consistency of the results of the current study with previous international and Canadian research, provide evidence that the current results are reliable and valid estimates of the prevalence of mental disorders among federally sentenced women.

Conclusions

The prevalence of mental disorders is much greater among women inmates in CSC than in the general population, and greater than reported in previous international and Canadian studies of men inmates. Indigenous women appear to have higher rates of many mental disorders, and higher lifetime rates of co-occurring disorders with alcohol and substance use and antisocial and borderline personality disorders. This, in combination with their relatively small numbers dispersed across the country in six different institutions across five regions, present significant challenges to the provision of effective mental health and correctional treatment programs for incarcerated women.

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Appendix A

Table A1

Prevalence Rates of Mental Disorders among Federal Women Offenders: In Custody Sample (N = 154)

Disorder	Lifetime % (*n*)	Current % (*n*)
Mood disorders	**61.7 (95)**	**22.1 (34)**
Bi-polar I disorder	9.1 (14)	†
Bi-polar II disorder	†	†
Other bi-polar disorders	†	†
Major depressive disorder	46.8 (72)	9.7 (15)
Dysthymic disorder	9.7 (15)	9.1 (14)
Depressive disorder not otherwise specified	3.9 (6)	†
Mood disorder due to a general medical condition	0	0
Substance-induced mood disorder	3.9 (6)	0
Psychotic disorders[a]	**7.1 (11)**	**4.5 (7)**
Alcohol and substance use disorders	**76.0 (117)**	**-**
Alcohol abuse or dependence	48.7 (75)	-
Non-alcohol substance abuse or dependence	72.1 (111)	-
Anxiety disorders	**57.1 (88)**	**53.9 (83)**
Panic disorder	18.8 (29)	14.3 (22)
Agoraphobia without history of panic	3.3 (5)	3.3 (5)
Social phobia	10.5 (16)	9.2 (14)
Specific phobia	5.2 (8)	5.2 (8)
Obsessive-compulsive disorder	10.4 (16)	10.4 (16)
Posttraumatic stress disorder	34.4 (53)	33.1 (51)
Generalized anxiety disorder	13.6 (21)	13.0 (20)
Anxiety disorder due to a general medical condition	†	†
Substance-induced anxiety disorder	0	0
Anxiety disorder not otherwise specified	5.9 (9)	5.9 (9)
Eating disorders	**16.2 (25)**	**11.0 (16)**
Anorexia Nervosa	5.8 (9)	†
Bulimia Nervosa	6.5 (10)	5.8 (9)
Binge-eating disorder	3.9 (6)	†
Pathological gambling	**13.6 (21)**	†
Borderline personality disorder (lifetime only)	**33.1 (51)**	**-**
Antisocial personality disorder (lifetime only)	**49.4 (76)**	**-**

Note. "(0)" indicates no participant received a rating for that category. Percentages may not add to 100% as participants could meet the diagnostic criteria for more than one disorder. Percentages may vary due to missing data for some diagnoses (i.e. denominators may vary).

[a] = Psychotic disorders included: schizophrenia, schizophreniform, schizoaffective, delusional disorder, brief psychotic disorder, substance abuse or general medical condition causing psychotic symptoms, substance induced psychotic disorder, and psychotic disorder not otherwise specified.

Appendix B

Table B1

Prevalence Rates of Mental Disorder among Indigenous and non-Indigenous Federal Women Offenders: In-Custody Sample N = 154

	Indigenous (*N* = 48)		**Non-Indigenous (*N* = 106)**	
Disorder	Lifetime	Current	Lifetime	Current
Mood disorders	56.3 (27)	20.8 (10)	64.2 (68)	22.6 (24)
Bi-polar disorders	†	†	13.2 (14)	5.7 (6)
Major depressive disorder	45.8 (22)	12.5 (6)	47.2 (50)	8.5 (9)
Dysthymic disorder	†	†	10.4 (11)	9.4 (10)
Mood Disorders – other	†	†	8.5 (9)	†
Psychotic disorders[c]	10.4 (5)	†	5.7 (6)	†
Alcohol and substance use disorders (lifetime only)	89.6 (43)	-	69.8 (74)	-
Alcohol abuse or dependence	72.9 (35)	-	37.7 (40)	-
Non-alcohol substance abuse or dependence	85.4 (41)	-	66.0 (70)	-
Anxiety disorders	62.5 (30)	60.4 (29)	54.7 (58)	50.9 (54)
Panic disorder	25.0 (12)	22.9 (11)	16.0 (17)	10.4 (11)
Phobias	25.0 (12)	25.0 (12)	16.0 (17)	14.2 (15)
Obsessive-compulsive disorder	10.4 (5)	10.4 (5)	10.4 (11)	10.4 (11)
Posttraumatic stress disorder	41.7 (20)	39.6 (19)	31.1 (33)	30.2 (32)
Generalized anxiety disorder	12.5 (6)	10.4 (5)	14.2 (15)	14.2 (15)
Anxiety Disorders – other	†	†	6.6 (7)	6.6 (7)
Eating disorders	22.9 (11)	18.8 (9)	13.2 (14)	6.6 (7)
Anorexia Nervosa	†	†	5.7 (6)	†
Bulimia Nervosa	14.6 (7)	12.5 (6)	†	†
Binge-eating disorder	†	†	4.7 (5)	†
Pathological gambling	14.6 (7)	0	13.2 (14)	†
Borderline personality disorder (lifetime only)	47.9 (23)	-	26.4 (28)	-
Antisocial personality disorder (lifetime only)	85.4 (41)	-	33.0 (35)	-

†Information suppressed due to frequencies fewer than 5 in one category.

Appendix C

Table C1

GAF Scale Scores by Mental Disorder for Current DSM – IV Axis I and Axis II – BPD and APD Personality Disorder Diagnoses: Federal Women Offenders In-Custody Sample (N = 154)

GAF Score	Axis I[a] Disorders *n* = 93 % (*n*)	APD only *n* = 18 % (*n*)	BPD only *n* = 3 % (*n*)	Axis I[a] & APD or BPD *n* = 63 % (*n*)
81-90 absent	9.7 (9)	38.9 (7)	0	†
71-80 some mild	22.6 (21)	33.3 (6)	†	17.5 (11)
61-70 some persistent	17.2 (16)	†	†	15.9 (10)
51-60 moderate	11.8 (11)	†	0	14.3 (9)
41-50 some serious	14.0 (13)	†	†	14.3 (9)
31-40 major	16.1 (15)	0	0	22.2 (14)
21-30 inability to function	†	0	0	†
11-20 suffering from neglect	5.4 (5)	0	0	7.9 (5)
1-10 immediate danger	†	0	0	†

Note. GAF = Global Assessment of Functioning. [a] Excluding alcohol and substance use disorders if they are the only Axis I disorders. Of all of the women interviewed with any current mental disorder, 32.8% (30/122) demonstrated at least some serious symptoms or impairment in functioning.
†Information suppressed due to frequencies fewer than 5 in one category.