

7-2-2012

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Citation of this paper:

Hefferman, Edward B., "Prevalence of mental illness among Aboriginal and Torres Strait Islander people in Queensland prisons" (2012). *Aboriginal Policy Research Consortium International (APRCi)*. Paper 347.
<http://ir.lib.uwo.ca/aprci/347>

Prevalence of mental illness among Aboriginal and Torres Strait Islander people in Queensland prisons

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MJA 2012; 197: 37–41

doi: 10.5694/mja11.11352

Aboriginal and Torres Strait Islander people are 14 times more likely to be incarcerated than non-Indigenous Australians and represent 26% of the custodial population,¹ despite being less than 3% of the Australian population.² There are complex links between incarceration, social adversity and poor mental health for Indigenous people.^{3–5} While it is recognised that the prevalence of mental disorder among the general prison population is much higher than in the community,^{6,7} knowledge about the prevalence of mental illness among Indigenous people in custody is limited.⁸ This is particularly disconcerting given that the report of the Royal Commission into Aboriginal Deaths in Custody,⁹ released two decades ago, highlighted the need to better understand the mental health of Indigenous Australians in custody.

A recent report on the general health of Aboriginal inmates⁵ suggested that the prevalence of mental disorder among Indigenous inmates was high. Similarly, the high rates of death by drug overdose and suicide,^{10,11} and of hospital admissions for severe mental illness in this group¹² in the immediate postrelease period, support this premise. Although previous studies have pointed to a high prevalence of mental illness among Indigenous prisoners,⁸ many have suffered from ill defined sampling frames that jeopardise generalisability, a lack of systematic screening within these sampling frames, exclusive reliance on screening instruments to identify possible mental illness and, most importantly, a lack of cultural sensitivity in the conceptualisation of mental illness and study design and implementation.

Abstract

Objective: To estimate the prevalence of mental disorder in a representative sample of Aboriginal and Torres Strait Islander people in Queensland prisons.

Design, setting and participants: Cross-sectional assessment of mental health using the Composite International Diagnostic Interview (CIDI) and clinical interviews, conducted by Indigenous mental health clinicians who undertook specific training for this purpose, with support from forensic psychiatrists when indicated. We assessed adults who self-identified as Indigenous and were incarcerated in six of the nine major correctional centres across Queensland (housing 75% of all Indigenous men and 90% of all Indigenous women in Queensland prisons) between May and June 2008.

Main outcome measures: Diagnoses of anxiety, depressive and substance misuse disorders using the CIDI; diagnosis of psychotic illness determined through psychiatrist interviews supplemented by a diagnostic panel.

Results: We interviewed 25% of all Indigenous men (347/1381; mean age, 31.5 years) and 62% of all Indigenous women (72/116; mean age, 29.2 years) incarcerated at the time of our study. The recruitment fraction was 71% for men and 81% for women. Among the 396 individuals who completed both the interview and the CIDI, the 12-month prevalence of mental disorder was 73% among men and 86% among women. This comprised anxiety disorders (men, 20%; women, 51%); depressive disorders (men, 11%; women, 29%); psychotic disorders (men, 8%; women, 23%) and substance misuse disorders (men, 66%; women, 69%).

Conclusions: The prevalence of mental disorder among Indigenous adults in Queensland custody is very high compared with community estimates. There remains an urgent need to develop and resource culturally capable mental health services for Indigenous Australians in custody.

The aim of our study was to estimate the prevalence of mental disorders (depressive, anxiety, psychotic and substance misuse disorders) among a large and representative sample of Indigenous prisoners. It employed systematic sampling and gold-standard assessment methods and, for the first time, introduced culturally sensitive methods of diagnosing psychotic illness in Indigenous prisoners.

Methods

Design and participants

Participants were sampled from six of the nine high-security correctional centres across Queensland that included both sentenced and

remanded prisoners and contained about 75% of the Indigenous men and 90% of the Indigenous women in Queensland prisons at the time. Surveys were conducted over an 8-week period in May and June 2008, and the time spent at each centre varied from 1 to 2 weeks. Before visiting the centres, Indigenous inmates were provided with information about the survey in verbal and written form, to ensure that participants understood the purpose and voluntary nature of participation.

Potential participants were identified from the nominal roll on the first day that the researchers visited that correctional centre. Of those who self-identified as Indigenous (Aboriginal, Torres Strait Islander or both Aboriginal and Torres Strait Islander), all

women and every third man on the nominal roll were approached to participate in the study. Participants received A\$10 for their time. Excluded from the sample were individuals who did not consent to participate and those judged to be unable to provide informed consent or considered too physically or mentally unwell to participate.

Procedure and measures

Data were collected by face-to-face interviews in confidential settings within the custodial centres. The questionnaire was administered by trained interviewers, contained both quantitative and qualitative domains, and included questions covering demographic, social, custodial, mental health, health care and cultural characteristics.

Interviewers also administered the Composite International Diagnostic Interview (CIDI), version 2.1, using a laptop computer to assess participants for depression and anxiety disorders during the previous 12 months. A modified version of the substance misuse disorder module was administered, with questions about substance use directed at the 12 months before incarceration to cater for the incarcerated population.

The CIDI is a comprehensive, well validated, fully standardised interview that can be used to assess mental health disorders according to the criteria in the *International statistical classification of diseases and related health problems*, 10th revision.¹³ Individuals can meet diagnostic criteria for more than one mental disorder; we anticipated that co-occurring disorders were likely. Although the CIDI has not been validated for an Australian Indigenous population, it was chosen because (i) the Indigenous mental health experts consulted in the design of our research judged that it was appropriate to diagnose depression, anxiety and substance misuse disorders in this population, and (ii) it has been widely used with Indigenous populations in other large prisoner studies¹⁴ and in major national mental health epidemiological surveys.¹⁵

To prevent culturally congruent experiences being misinterpreted as psychotic experiences,¹⁶ the full CIDI interview was not used to identify

1 Demographic characteristics of participants among Indigenous people in Queensland prisons, May–June 2008 (n = 419)

Characteristic	No. of men (n = 347)	No. of women (n = 72)	Total no.
Indigenous status			
Aboriginal	276 (79.5%)	58 (80.6%)	334 (79.7%)
Torres Strait Islander	33 (9.5%)	4 (5.6%)	37 (8.8%)
Aboriginal and Torres Strait Islander	38 (11.0%)	10 (13.9%)	48 (11.5%)
Currently in a relationship	174 (50.1%)	29 (40.3%)	203 (48.4%)
Education ≤ Year 10	276 (79.5%)	60 (83.3%)	336 (80.2%)
Primary income from social welfare	197 (56.8%)	62 (86.1%)	259 (61.8%)
Custodial status			
Remanded	109 (31.4%)	32 (44.4%)	141 (33.7%)
Sentenced	231 (66.6%)	36 (50.0%)	267 (63.7%)
Unknown	7 (2.0%)	4 (5.6%)	11 (2.6%)
Previous incarceration			
First time	61 (17.6%)	19 (26.4%)	80 (19.1%)
2–3 times	113 (32.6%)	22 (30.6%)	135 (32.2%)
4–5 times	70 (20.2%)	11 (15.3%)	81 (19.3%)
≥ 6 times	94 (27.2%)	18 (25.0%)	112 (26.7%)
Not known	9 (2.6%)	2 (2.8%)	11 (2.6%)

psychotic disorders; instead, we adopted a three-step process. First, the sample was screened with the CIDI psychosis screener, included in the questionnaire, to identify potential cases. Second, those who screened positive underwent face-to-face interviews with a forensic psychiatrist, who used the interview and all available clinical data to determine the presence or absence of a diagnosis. Third, this information, recorded in a standardised format, was reviewed by a diagnostic panel comprised of two psychiatrists and a cultural adviser (an Indigenous mental health clinician) to reach a consensus diagnosis.

The members of the research team were predominantly Indigenous Australians and all were qualified mental health care professionals. They were trained in the use of the research tools, and ethical and emergency care procedures. They were provided with onsite cultural and health care supervision and had access to a psychiatrist and correctional centre health staff if required. The study involved Indigenous people in the design, implementation, data collection and interpretation of results. The research was supported, monitored and informed by a comprehensive consultation process with both Aboriginal and Torres Strait Islander community members.

Ethics approval

The study design and protocol were approved by the Queensland Health West Moreton Health Service District Human Research Ethics Committee and were consistent with guidelines for ethical conduct in Aboriginal and Torres Strait Islander health research.¹⁷

Data analysis

Quantitative data were analysed using Stata, version 12.0 (StataCorp, College Station, Tex, USA); descriptive statistics were reported, and the relative risk of diagnosis by sex was determined.

Results

On 30 June 2008, there were 5544 adults in Queensland prisons,¹⁸ of whom 1381 men and 116 women identified as Indigenous. In the six centres surveyed, there were 1036 Indigenous men and 88 Indigenous women.

Of the 487 men approached to participate in the study, 347 (71.3%) were interviewed, 92 declined to participate, 45 were released, transferred or not available, and three were judged too unwell to be seen due to mental illness. The mean age of male participants was 31.5 years (SD, 9.4) and of the male non-participants was 28.8 years (SD, 8.18); this difference was

statistically significant ($P=0.03$). Of the 88 women approached to participate in the study, 72 (81.2%) were interviewed, 10 declined to participate, five were either released or not available, and one was judged too unwell to be seen due to a physical illness. There was no statistically significant difference in the mean age of female participants (29.2 years; SD, 8.5) and non-participants (30.47 years; SD, 8.35) ($P>0.05$).

Of the 419 individuals who participated in the study, all completed the questionnaire and were screened for psychosis; 396 (94.5%) of these individuals also completed the CIDI automated interviews for anxiety, depressive and substance misuse disorders (331 men and 65 women). Of the 23 individuals who did not complete the CIDI, six (three men and three women) were diagnosed with a psychotic disorder.

Demographics and custodial experience

Most participants (79.7%) identified as Aboriginal, about half (51.6%) were not in a relationship and almost two-thirds (61.8%) were unemployed (Box 1). Most did not complete education beyond Year 10; of these, around a quarter of men (23.0%) and a fifth of women (19.4%) did not complete Year 8 schooling. Almost two-thirds (63.7%) were sentenced prisoners; the remainder were individuals who were remanded in custody. Nearly half (46.1%) had been incarcerated four or more times. Over half the men (52.2%) and 37.5% of the women reported having spent time in youth custody, with 23.1% of men and 9.7% of women having spent more than a year in youth custody.

Prevalence of mental health disorders

Of the 396 individuals who completed both the questionnaire and the CIDI, most men (72.8%) and women (86.1%) suffered from at least one mental health disorder in the preceding 12 months (Box 2). Two-thirds (66%) suffered from a substance misuse disorder, 25.2% from an anxiety disorder, 14.3% from a depressive disorder, and 10.1% from a psychotic disorder. Mental health disorders were more common among the

remanded sample (84.4%) than in the sentenced sample (70.4%) (relative risk [RR], 1.12; 95% CI, 1.08–1.33; $P=0.002$).

Women were significantly more likely than men to report suffering from an anxiety disorder (RR=2.5; 95% CI, 1.8–3.5), a depressive disorder (RR=2.6; 95% CI, 1.6–4.1) or a psychotic disorder (RR=3.1; 95% CI, 1.8–5.3). The most common anxiety disorder among both men and women was post-traumatic stress disorder and the most prevalent depressive disorder was major depression (Box 3).

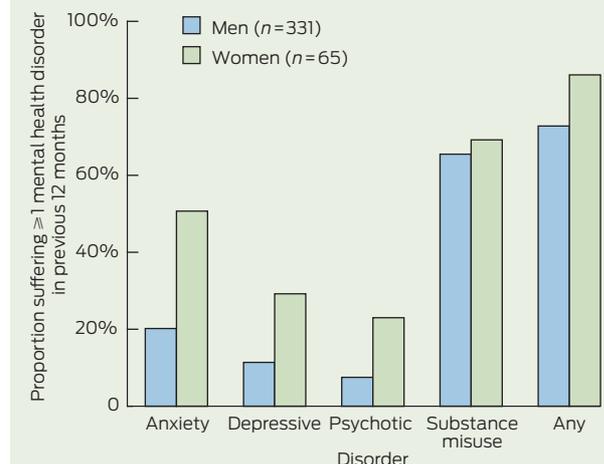
Of the 419 individuals administered the CIDI psychosis screener, 71 (16.9%) screened positive. Of these, eight men and one woman were unable to be assessed by a psychiatrist as they were either released or transferred before the assessment. Of the remaining 62 individuals, 28 men and 18 women were found to have a psychotic disorder (Box 4).

The majority of both men and women had a substance misuse disorder (Box 5), most commonly alcohol dependence (48.2%) or cannabis dependence (21.0%). Most individuals who had a substance misuse disorder had the more severe form — dependence.

Discussion

Among the Indigenous inmates sampled, most men and women were diagnosed with at least one mental

2 Twelve-month prevalence of mental health disorder among Indigenous people in Queensland prisons, May–June 2008 (n = 396)*



* For comparability purposes, excludes the 23 participants who did not complete the Composite International Diagnostic Interview.

disorder, whereas the 12-month prevalence of mental disorder among adults in the Australian community is estimated at 20%.¹⁵ Given the vast overrepresentation of Indigenous people in prison, their frequent transition between prison and the community, and the high prevalence estimates of mental disorder in this group, the consequences of inadequate health care in prison^{7,19} must inevitably affect Indigenous communities. The prevalence of depression and anxiety disorders, especially post-traumatic stress disorder, was high in this sample, and is similar to prevalence estimates of general prison populations,¹⁴ highlighting the critical

3 Twelve-month prevalence of anxiety and depressive disorder among Indigenous people in Queensland prisons, May–June 2008 (n = 396)*

Mental disorder	No. of men (n = 331)	No. of women (n = 65)	P
Anxiety			
Panic disorders	2 (0.6%)	3 (4.6%)	0.008
Agoraphobia	5 (1.5%)	4 (6.2%)	0.05
Social phobia	4 (1.2%)	8 (12.3%)	< 0.001
Generalised anxiety disorder	8 (2.4%)	3 (4.6%)	> 0.05
Specific phobias	15 (4.5%)	14 (21.5%)	< 0.001
Obsessive compulsive disorder	4 (1.2%)	0	> 0.05
Post-traumatic stress disorder	40 (12.1%)	21 (32.3%)	< 0.001
Any anxiety disorder†	67 (20.2%)	33 (50.8%)	< 0.001
Depression			
Major depressive episode	34 (10.3%)	15 (23.1%)	0.004
Dysthymic disorder	9 (2.7%)	7 (10.8%)	0.003
Total depressive disorders†	38 (11.5%)	19 (29.2%)	< 0.001

* For comparability purposes, excludes the 23 participants who did not complete the Composite International Diagnostic Interview. † Individuals could have more than one anxiety or depressive disorder.

4 Twelve-month prevalence of psychotic disorder among Indigenous people in Queensland prisons, May–June 2008 (n = 419)

Disorder	No. of men (n = 347)	No. of women (n = 72)	P	Total
Schizophrenia	15 (4.3%)	9 (12.5%)	0.007	24 (5.7%)
Substance-induced psychotic disorder	7 (2.0%)	7 (9.7%)	< 0.001	14 (3.3%)
Schizoaffective disorder	4 (1.2%)	0	> 0.05	4 (1.0%)
Psychotic disorder (not otherwise specified)	2 (0.6%)	2 (2.8%)	> 0.05	4 (1.0%)
Any psychotic disorder	28 (8.1%)	18 (25.0%)	< 0.001	46 (11.0%)

need for adequate mental health services in prison settings.⁷ The high prevalence of diagnosed psychotic disorder, particularly among women, is of concern and is consistent with other Australian studies.^{14,20} Psychotic disorder is associated with significant morbidity²¹ and increased risk of reincarceration.²² These findings highlight a critical mental health need for these individuals, both in custody and during the transition back to their communities.

This study, like others before it,⁸ identified a high rate of substance use problems among Indigenous prisoners. However, most previous studies have relied exclusively on screening instruments to do this, whereas our study has, for the first time, robustly estimated the diagnostic prevalence of harmful levels of substance misuse and dependence among Indigenous prisoners. The National Indigenous Drug and Alcohol Committee recently highlighted the lack of opportunities that exist for Indigenous people to access appropriate treatment for these problems in custody.²³ It suggested that, if available, culturally appropriate interventions are likely to be successful, and it provided clear recommendations about how to implement these services. Evaluation of such services, in a way that is both culturally sensitive and scientifically rigorous, is an essential next step.

Sampling is a challenge for any research with custodial populations, due to difficulties accessing all custodial centres and because of daily releases, transfers and receptions. However, given the centres that we sampled contained 75% of all Indigenous men and 90% of all Indigenous women in custody at that time, and the high recruitment fractions for both populations, it is likely that the risk of sampling bias was minimised. Similarly, the risk of recall bias is likely

to have been reduced by using 12-month prevalence estimates for mental disorders. It is possible that such high estimates of psychotic disorder, particularly among women, might indicate measurement bias. However, given the comprehensive and culturally sensitive method used to make the diagnosis, we believe that these findings are accurate. Further, any measurement bias would be at least partially offset by likely underdetection of psychotic disorders, due to false-negative results on the psychosis screener and the loss from the sample of some individuals who screened positive but could not

undergo diagnostic interviews due to their release.

The small age difference between participating and non-participating men (about 2.5 years) is unlikely to have substantially biased our prevalence estimates, given the size of the male sample and that the mean age of this sample (31.5 years) was similar to that of the total Indigenous male population in Queensland prisons at the time of the survey (30.6 years). A key strength of our research was the extensive consultation conducted with both Aboriginal and Torres Strait Islander communities and the involvement of Indigenous people in all aspects of the research process. Inevitably, cultural bias is a risk in this field of research. We aimed to ensure that any cultural bias or response bias was minimised through the use of a culturally informed research method and trained, culturally competent interviewers.

The information obtained from our research is crucial to the planning and implementation of adequate mental

5 Twelve-month prevalence of substance misuse disorder among Indigenous people in Queensland prisons, May–June 2008 (n = 396)*

ICD-10 diagnosis	No. of men (n = 331)	No. of women (n = 65)	P	Total
Alcohol	170 (51.4%)	39 (60.0%)	> 0.05	209 (52.8%)
Dependence	155 (46.8%)	36 (55.4%)	> 0.05	191 (48.2%)
Harmful misuse	15 (4.5%)	3 (4.6%)	> 0.05	18 (4.5%)
Amphetamine	36 (10.9%)	4 (6.2%)	> 0.05	40 (10.1%)
Dependence	34 (10.3%)	4 (6.2%)	> 0.05	38 (9.6%)
Harmful misuse	2 (0.6%)	0	> 0.05	2 (0.5%)
Cannabis	70 (21.1%)	17 (26.2%)	> 0.05	87 (22.0%)
Dependence	66 (19.9%)	17 (26.2%)	> 0.05	83 (21.0%)
Harmful misuse	4 (1.2%)	0	> 0.05	4 (1.0%)
Opioids	32 (9.7%)	7 (10.8%)	> 0.05	39 (9.8%)
Dependence	32 (9.7%)	7 (10.8%)	> 0.05	39 (9.8%)
Harmful misuse	0	0	> 0.05	0
Sedatives	6 (1.8%)	4 (6.2%)	> 0.05	10 (2.5%)
Dependence	0	1 (1.5%)	> 0.05	1 (0.3%)
Harmful misuse	6 (1.8%)	3 (4.6%)	> 0.05	9 (2.3%)
Others†	28 (8.5%)	11 (16.9%)	> 0.05	39 (9.8%)
Dependence	24 (7.3%)	11 (16.9%)	> 0.05	35 (8.8%)
Harmful misuse	4 (1.2%)	0	> 0.05	4 (1.0%)
Any substance	217 (65.6%)	45 (69.2%)	> 0.05	262 (66.2%)
Dependence	208 (62.8%)	43 (66.2%)	> 0.05	251 (63.4%)
Harmful misuse	23 (6.9%)	3 (4.6%)	> 0.05	26 (6.6%)

ICD-10 = *International statistical classification of diseases and related health problems*, 10th revision.
 * For comparability purposes, excludes the 23 participants who did not complete the Composite International Diagnostic Interview. † Includes hallucinogens, volatile solvents and psychoactive substances, and other stimulants. ◆

health services for Indigenous people in contact with and leaving the criminal justice system. For mental health services to be effective, they must be culturally capable, and accessible both in custody and in the community, with a focus on enabling continuity of care between the two. Such services can only be achieved through appropriate resourcing and stewardship. Their development is not only supported from a public health perspective, but also from human rights and ethical perspectives.^{24,25}

While the marked over-representation of Indigenous people in Australian prisons remains a significant concern, prisons provide an opportunity for health care for a population who underaccess health care in the community.²⁶ Although reducing the Indigenous incarceration rate remains a priority, improving the mental health of Indigenous Australians, including those who come into contact with the criminal justice system, is also important. Access to appropriate treatment may help prevent the “revolving door” of incarceration.

Our study, the first of its kind in Australia, provides an opportunity for service planning and policymaking to be based on reliable estimates of the nature, type and extent of mental disorder among Indigenous people in custody. In embracing the challenge of closing the Indigenous health gap, it is critical that the mental health problems of Indigenous people in custody be addressed.

Acknowledgements: We acknowledge the significant contributions of Aboriginal and Torres Strait Islander communities in Queensland and the Queensland Health Indigenous mental health workforce. We thank Queensland Corrective Services for supporting our research. This research was funded by the Mental Health Alcohol and Other Drugs Directorate, Queensland Health. Stuart Kinner is supported by National Health and Medical Research Council Career Development Fellowship No. 1004765.

Competing interests: No relevant disclosures.

Received 21 Oct 2011, accepted 5 Mar 2012.

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