Psychiatric morbidity in a cross-sectional sample of male remanded prisoners

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Abstract

Objectives: To estimate the psychiatric service requirements for the remand population.

Method: We interviewed 232 (42.6%) men, a representative sample of men on remand, using the SADS-L, SODQ and a structured demographic interview.

Results: We found high rates of psychiatric morbidity in our sample. The six month prevalence of psychosis was 7.6%, almost twice the rate in a recent international meta-analysis. Major depressive disorder was present in 10.1% (six month prevalence). Substance misuse problems were also common but there was no significant difference between rates of substance misuse in psychotic and non-psychotic prisoners. A total of 31.2% had a lifetime history of any mental illness (excluding substance misuse, adjustment disorder and personality disorder).

Conclusions: The high levels of psychiatric morbidity detected in our sample indicate a substantial unmet need for mental health services and addiction treatment services for the mentally ill in Irish prisons.

Key words: Psychiatric morbidity; Male remanded prisoners; Mental health services; Addiction treatment.

Background

This is the first epidemiologically representative study of psychiatric morbidity in male remand prisoners in Ireland.

It is now well established that remanded prisoners suffer from high levels of psychiatric morbidity.[1,2] A recent meta analysis by Fazel and Danesh revealed high six month prevalence rates of both psychosis (4%) and major depression (9%) in remanded males across many jurisdictions.[3]

Meeting the health needs of prisoners requires reliable epidemiological data. We set out to perform the first national cross-sectional survey of a representative sample of remanded male prisoners within the Irish prison system.

We aimed to estimate the prevalence of mental illness using research diagnostic methods and establish the projected treatment and rehabilitation needs of this population, which could then be extrapolated to the entire remanded Irish prisons' population.

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Method

Ethics

Ethical approval for the study was obtained from the Research Ethics Committees of the Irish Prisons Service and the National Forensic Mental Health Service. Voluntary written consent was obtained from all those approached to participate in the study. Prisoners who declined to take part in the study were not considered further. We obtained limited, anonymised information regarding those who declined.

Sample and study design

A total of 11,860 persons were committed to Irish prisons in 2002. Of those committals, 6,824 were on remand.[4] Remanded males are housed at eight places of detention within the state. Cloverhill prison in Dublin is the only dedicated remand centre in the state and it has a capacity of approximately 400 prisoners.

We interviewed one third of prisoners on remand at Cloverhill prison in Dublin, using a stratified random sampling method to ensure that no wing within the prison was underrepresented. Information leaflets were distributed prior to the interviews to prisoners who were initially approached by prison officers. Lists of inmates for each wing of the prison were provided by the Irish Prisons Service Information Technology Department, sorted according to age and time in custody. As the turnover of prisoners is so rapid within the remand system, prisoners were screened on a wing-by-wing basis and an updated list was obtained each time screening began on a new wing.

We approached every third inmate on the list and obtained informed consent for the study. Those who declined to be interviewed were not pressed and the next person on the list was approached as a substitute, to minimise any possibility of sampling bias. We aimed to interview all prisoners on remand at the seven other prisons in the jurisdiction housing remanded males. All interviews took place between August 2002 and March 2003.

A total of 181 remand prisoners were approached at Cloverhill prison and 127 (70.2%) agreed to be interviewed. A total of 105 (72.9%) of the 144 males on remand in the other centres agreed to be interviewed. We generated weighted means in order to determine the overall prevalence of mental illness for the remand population as a whole. We also reviewed the inmate medical records to ensure that all available data relating to a history of mental illness was gathered.

At the time of interview, the mean length of time in custody was 4.1 months and 22% of our sample had been on remand for six months or more. This was representative of the entire

Table 1: Demographic characteristics of the sample

	Cloverhill Prison	Other remand centres	Combined weighted mean
Mean Age (years)	29.2 (SD 8.8)	30.6 (SD 11.2)	29.6
Ethnic group			
Caucasian	104 (81.9%)	91 (86.7%)	83.1%
Non EU European caucasian	5 (3.9%)	0	2.9%
African	9 (7.1%)	2 (1.9%)	5.7%
Chinese	3 (2.4%)	0	1.8%
Irish Traveller	2 (1.6%)	12 (11.4%)	4.2%
Other	4 (3.1%)	0	2.3%
Marital status			
Single	75 (59.1%)	66 (62.9%)	60.1%
Married/cohabiting	39 (30.7%)	27 (25.7%)	29.4%
Separated/divorced	12 (9.4%)	11 (10.5%)	9.7%
Widowed	0	1 (1.0%)	0.2%
Status unknown	1 (0.8%)	0	0.6%
Occupation at time of arrest			
Unemployed	86 (67.7%)	56 (53.3%)	63.9%
Full/part time employment	35 (27.6%)	46 (43.2%)	31.9%
Disability/invalidity pay	4 (3.1%)	2 (1.9%)	2.8%
Student/retired	1 (0.8%)	1 (1.0%)	0.8%
Unknown	1 (0.8%)	0	0.6%

remand population. In a separate study, we assessed all committals to distinguish any bias inherent in the process of imprisonment of the mentally ill.

Interview schedule

We used the Schedule for Schizophrenia and Affective Disorders, Lifetime version (SADS-L) to detect current and lifetime mental disorder.[5] The SADS-L generates diagnoses according to DSM-III R criteria, interchangeable with ICD-10 Diagnostic Criteria for Research.[6,7] We have reported diagnoses as far as possible in keeping with the criteria used in the meta analysis by Fazel and Danesh.

Concerning the definitions of substance dependence and harmful use, the ICD-10 Diagnostic Criteria for Research which we have used closely resemble the DSM criteria for substance abuse by including social as well as physical harm.[8] We used the Severity of Dependence Questionnaire (SODQ) to quantify levels of drug use and dependence.[9] Self reported levels of alcohol and drug consumption were also recorded. We added to these, questions to clarify the six-month prevalence as well as the current and lifetime diagnosis.

We also obtained demographic, ethnic and personal details using a semi-structured standardised interview, which was piloted for acceptability and practicality and was based on the interview used in other similar studies in other jurisdictions.

Ethnicity was elicited by self-definition, selecting from the categories used in the most recent Irish census. We ensured consistency between the ratings of researchers by joint interviewing after training in the use of the research instruments. For all diagnostic categories the kappa statistic was 1, indicating complete agreement between all researchers.

Data analysis

Data was analysed using SPSS-11. Data from the Cloverhill sample and the other remand centres were combined and weighted averages were generated for the entire sample.

Table 2: Lifetime diagnosis of psychosis (n = 27)

Diagnosis	ICD-10 DCR Code	n
Psychotic depression	F 32.3	3
Bipolar affective disorder	F 30-31	8
Schizophrenia	F 20	7
Schizoaffective disorder	F 25	1
Delusional disorder	F 22	1
Drug-induced psychosis	F 1x.5	7
Total		**27**

Results

Demographics of the sample

The mean age of participants in the study was 29.6 years. In total, 74% of the sample had been born in Ireland and 86% were Caucasian. A total of 5.7% of those surveyed were of African ethnic origin and 4.2% identified themselves as members of the Irish Traveller community, an indigenous ethnic minority which has been part of Irish society for centuries. Irish Travellers account for only 0.58% of the Irish population.[10] At the time of interview 60.1% of those surveyed were single, while 29.4% were married or cohabiting at the time of committal. A total of 9.7% of the sample were separated or divorced and 0.2% were widowed (*see Table 1*).

Educational attainment and employment

We found the prevalence of self-reported illiteracy to be 10.9%. Of the remanded prisoners, 18.6% had been to a special school (including schools for those with behavioural problems) or had remedial classes within a mainstream

Table 3: Rates of mental illness and substance misuse in the cross-sectional remand sample

	Current (%) [95 % confidence intervals]			Six month (%) [95 % confidence intervals]			Lifetime (%) [95 % confidence intervals]		
DSM-IV diagnosis	**Cloverhill**	**Other remand centres**	**Weighted means**	**Cloverhill**	**Other remand centres**	**Weighted means**	**Cloverhill**	**Other remand centres**	**Weighted means**
Psychosis	6 (4.7) [2.2 - 9.9]	4 (3.8) [1.5 - 9.4]	4.5 % [3.0 - 6.5]	11 (8.6) [4.9 - 14.8]	5 (4.8) [2.1 - 10.7]	7.6 % [5.6 - 10.1]	17 (13.4) [8.5 - 20.4]	10 (9.5) [5.3 - 16.6]	12.4 % [9.8 - 15.3]
Affective disorder*	9 (7.1) [3.8 - 12.9]	16 (15.2) [9.6 - 23.3]	9.1% [6.0 - 13.4]	15 (11.8) [7.3 - 18.6]	16 (15.2) [9.6 - 23.3]	12.6 % [8.8 - 17.4]	23 (18.1) [12.4 - 25.7]	22 (21.0) [14.3 - 29.7]	18.7 % [14.1 - 24.0]
Major depressive disorder	7 (5.5) [2.7 - 10.9]	10 (9.5) [5.3 - 16.6]	6.6% [4.8 - 9.0]	13 (10.2) [6.1 - 16.7]	10 (9.5) [5.3 - 16.6]	10.0% [7.9 - 12.9]	21 (16.5) [11.1 - 24.0]	16 (15.2) [9.6 - 23.3]	16.2% [13.3 - 19.5]
Anxiety disorder	7 (5.5) [2.7 - 10.9]	11 (10.5) [6.0 - 17.8]	6.8 % [5.0 - 9.2]	7 (5.5) [2.7 - 10.9]	11 (10.5) [6.0 - 17.8]	6.8 % [5.0 - 9.2]	9 (7.1) [3.8 - 12.9]	16 (15.2) [9.6 - 23.3]	9.2 % [7.0 - 11.9]
Substance use disorder	82 (64.6) [55.9 - 72.3]	72 (68.6) [59.2 - 76.7]	65.6 % [61.5 - 69.5]	92 (72.4) [64.1 - 79.5]	75 (71.4) [62.2 - 79.2]	69.7 % [65.7-73.4]	92 (72.4) [64.1 - 79.5]	87 (82.9) [74.5 - 88.9]	77.3% [73.9 - 80.9]
Any mental illness	22 (17.3) [11.7 - 24.8]	25 (23.8) [16.7 – 32.8]	19.0% [14.4 - 24.5]	26 (20.5) [14.4 - 28.3]	25 (23.8) [16.7 - 32.8]	21.4 % [16.7-27.3]	42 (33.1) [25.5 - 41.6]	38 (36.2) [27.6 - 45.7]	33.9 % [28.3 - 40.4]

*includes mild, moderate and severe depressive disorder and dysthymia, excludes bipolar

school. Rates of unemployment were high. At the time of arrest 63.9% were unemployed.

Forensic/institutional history

Of those screened, 17.8% had been in care or a juvenile detention centre and 34.5% had been in contact with the juvenile court system. The mean age of first contact with the juvenile courts was 13.7 years. For those who had previously been in custody (n = 123) the mean number of previous sentences served was 4.3 and the mean number of previous periods on remand was 5.4.

Contact with psychiatric services

When contact for court reports only was excluded 14.6% had had contact with child psychiatric services. A total of 29.8% had been in contact with the adult community psychiatric services (not including contact only for court reports or addiction treatment services) at some time. As many as 91% of those with major depressive disorder and 66% of those with a psychosis were known to community psychiatric services.

A total of 15.9% were attending a drug clinic prior to committal and 17.2% had attended a drug clinic at some time. All but one of those attending a drug treatment clinic at the time of committal were in Cloverhill prison.

Housing

Overall, 40.9% had been homeless at some time and only 80.1% had a place to stay when they were released. A total of 75.5% were living with their family or in their own home at the time of arrest. In the month prior to arrest 8.5% had been living in unsettled accommodation and 5.5% had been homeless and roofless in the month prior to arrest, 7.3% had been living in settled hostel accommodation and 2.6% were living in either official or unofficial halting sites or group housing for Travellers.

Any mental illness

Overall, 18.8% (95% CI 15.7-22.2%) of the prisoners screened were found to be suffering from a mental illness (excluding drug or alcohol misuse (F1x.1, F1x.2), adjustment disorder (F43.2) or personality disorder (F60-61)) at the time of screening. In total, 22.3% (95% CI 18.9-25.9%) had been mentally ill in the six months prior to screening, and 31.2% (95% CI 27.5-35.3%) were found to have a lifetime psychiatric diagnosis (excluding drug or alcohol problems, adjustment disorder and personality disorder).

Psychosis

Of those interviewed, 4.5% (95% CI 3-6.5%) were found to be psychotic at the time of their assessment (ICD-10 DCR F1x.5, F20-29, F30-31, F32.3, F33.3). The six-month prevalence of psychosis was 7.6% (95% CI 5.6-10.1%). A total of 17 prisoners in Cloverhill prison (13.4%) and 10 prisoners in the other remand centres (9.5%) had been psychotic at some time, giving a weighted lifetime prevalence of any psychosis of 12.4% (95% CI 9.8-15.3%) for the entire sample (*see Tables 2 and 3*).

Affective illnesses and anxiety disorders

Our samples also had high rates of affective illness and anxiety disorders. A total of 6.6% (95% CI 4.8-9%) were suffering from a major depressive episode (ICD-10 DCR F32-33, excluding F32.3, F33.3) and 6.8% (95% CI 5-9.7%) from an anxiety disorder (ICD-10 DCR F40-42) at the time of screening.

The six-month prevalence of major depression was 10.0%(95% CI 7.9-12.9%). The lifetime prevalence for a major depressive episode was 16.2% (95% CI 13.3-19.5%). For an anxiety disorder the six-month prevalence was 6.8% (95% CI 5.0-9.2%) and the lifetime prevalence was 9.2% (95% CI 7-11.9%), (*see Table 4).*

Drugs and alcohol

Alcohol and drug misuse was diagnosed using the categories of Harmful Use and Dependence Syndrome from ICD-10 Diagnostic Criteria for Research (ICD-10 DCR

Table 4: Prevalence rates of alcohol and drug misuse. Harmful use and dependence are mutually exclusive for alcohol and for drugs

	Harmful use of alcohol % (95% CI)	Alcohol dependance % (95% CI)	Alcohol problem (harmful use or dependence % (95% CI)	Harmful use of drugs % (95% CI)	Drug dependence % (95% CI)	Drug problem (harmful use or dependence % (95% CI)	Any harmful use or dependence % (95% CI)
Point prevalence	7.1 (5.3 - 9.7)	27.6 (24 - 31.5)	34.7 (30.9 - 38.8)	9.9 (7.7 - 12.7)	43.3 (39.3 - 47.6)	53.2 (49.1 - 57.5)	65.6 (61.5 - 69.5)
Six-month prevalence	10.5 (8.2 - 13.3)	28.8 (25 - 32.6)	39.3 (35.3 - 43.5)	11.1 (10.3 - 11.9)	45.6 (41.4 - 49.8)	56.7 (52.6 - 60.9)	69.7 (65.7 - 73.4)
Lifetime prevalence	18.7 (15.7 - 22.3)	41.3 (37.3 - 45.5)	60 (55.8 - 64)	11.6 (8.7 - 13.9)	50 (45.8 - 54.2)	61.6 (57.4 - 65.6)	77.5 (73.9 - 80.9)

F1x.1, F1x.2). Rates of substance misuse were high in our sample. A total of 77.5% (95% CI 73.9-80.9%) of our sample had a lifetime history of alcohol or drug misuse, 72.1% had taken illicit drugs at some time in their lives and the mean age when they first used drugs was 16.1 years. In all, 61.6% (95% CI 57.4-65.6%) had a lifetime history of harmful use or dependence on illicit drugs. A similar proportion of the sample (60%, 95% CI 55.8-64%) identified themselves as having a lifetime history of alcohol abuse or dependence. In all, 34 (14.6%) were on methadone maintenance prior to committal.

Deliberate self-harm

A total of 27.7% of our sample had a lifetime history of deliberate self-harm. Of those interviewed, 36.2% had known someone who had committed suicide and 27.9% reported that a close friend had committed suicide.

Those with a lifetime history of substance misuse were significantly more likely to have a history of deliberate self-harm than those who had no history of substance misuse ($Chi^2 = 5.1$, $p = 0.024$). A lifetime history of mental illness was also associated with a higher prevalence of deliberate self-harm. A total of 40% of those prisoners who had a lifetime history of mental illness (excluding drug and alcohol misuse) had engaged in self-injurious behaviour at some time compared with 25.3% of those with no history of mental illness, ($Chi^2 = 5.3$, $p = 0.021$).

Comorbidity

Rates of comorbidity were very high. Only three of the 27 with a lifetime diagnosis of a psychotic illness did not have a history of either drugs or alcohol harmful use or dependency, but this did not differ significantly from the non-psychotic prisoners.

Only 10 (4.4%) individuals had neither a mental illness (broadly defined) nor a substance abuse problem within the last six months, though the overlap between the two categories was no more than would be expected by chance.

Discussion

Weaknesses in the present study

We found that the rate of refusal to take part was high in this study. While it is possible that those with a psychiatric history might avoid a psychiatric interview leading to an under-estimate, we believe it is unlikely that we have over-estimated the prevalence of mental disorders in the prison population.

An anonymised case note survey, summarised by the treating general practitioners, indicated that those who refused to be interviewed had a similar prevalence of psychosis to the interviewed sample so it would appear that the relatively high refusal rate did not introduce a bias into the sample.

Methodological issues

The SADS-L used in conjunction with the ICD-10 Diagnostic Criteria for Research allowed us to make the diagnoses of mental illness in the presence of a six-month or lifetime history of alcohol or substance harmful use or dependence. This research tool tends to give a more conservative assessment of mental illness prevalence than some other research tools.

We were reliant on the self-report of prisoners to establish the prevalence of substance misuse following committal. However, continued use of cannabis and other drugs is common in prison and reliable information about this would be hard to obtain. The sampling appears to have been unbiased because those who refused to be interviewed had similar prevalences of major mental disorders recorded in their medical notes as those interviewed.

Concerning the possibility of malingering, the great majority of those identified as having a major depressive disorder or psychosis were already known to community psychiatric services. The frequency with which those with severe mental illnesses were known to community psychiatric services suggests that these were not symptoms specific to the prison context and were not malingering.

Mental illnesses

We found high rates of psychosis in our sample. A total of 4.5% (95% CI 3-6.5%) of those interviewed were found to be psychotic at the time of screening, 7.6% (95% CI 5.6-10.1%) of the sample having had an episode of psychosis in the six months prior to interview. This is higher than the six-month prevalence of 4% reported in the Fazel and Danesh meta analysis. Six-month prevalences of affective illness in our study were comparable to those found by Fazel and Danesh.

Drugs and alcohol problems and comorbidity

The prevalence of drugs and alcohol misuse was high and comorbidity of mental illness and substance abuse was common. To test for specific correlations between particular drugs and psychosis would not be possible since most used multiple drugs.

However, we did not find that psychotic prisoners were more likely to have a history of substance abuse than non-psychotic prisoners. This lack of significant difference from

other prisoners is at odds with the commonly perceived difference between prisoner patients and those with severe mental illnesses in community services and draws attention to the difficulties concerning diagnosis and natural history in those with psychotic illnesses who use intoxicants. The high level of substance abuse comorbidity highlights the need for structured treatment programmes for substance misuse within the prison system.

It is desirable that all severely mentally ill prisoners would be transferred out of the criminal justice system. Ideally, those charged with relatively minor offences should be diverted at the point of arrest to local psychiatric services, or failing that, diversion could take place on first appearance in the District Court. This should be possible under existing civil mental health legislation.

Those mentally ill people charged with more serious offences, particularly violent offences, are likely to be at great risk of self-harm and further deterioration in the prison environment. They should be diverted to the forensic mental health service for treatment with a view to eventual return to local psychiatric services at the end of their sentence.

The six-month prevalence of psychosis can be used as a guide to the lower limit of numbers who should more appropriately be treated in hospital in any one year. This has considerable resource implications for the forensic psychiatric services in Ireland.

There is at present no formal Court Diversion Scheme in operation in Ireland and under existing arrangements, those before the courts requiring psychiatric admission can only be admitted to the Central Mental Hospital. Service innovations in community and secure hospital care as well as reform of Criminal Justice Mental Health Legislation will be required to provide appropriate mental health care for the severely mentally ill in prison.

Key findings

We found that the prevalence of psychoses in this group was significantly greater than in an international comparison group. In a related sample we found that the prevalence of psychoses in the sentenced population was lower than in this remand population and in keeping with international averages.[11] This suggests that the mentally ill are accumulating in the remand population but not to the same extent in the sentenced population.

The most likely explanation is that psychotic men are being arrested for minor offences which do not attract custodial sentences. Instead they are being remanded in custody when they should have been brought to their local psychiatric services by the arresting Garda officer, or following an assessment in the Garda Station, or following the intervention of a psychiatric liaison and diversion service in the district court.

Declaration of interest: None

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