

Prevalence of psychiatric morbidity among prisoners attending OPD of Central Jail Hospital, Kathmandu

Bhattarai P¹, Sharma VD², Chapagai M³, Tulachan P⁴

1. Consultant Psychiatrist, Mental Hospital, Lagankhel, Lalitpur 2 Professor, Department of Psychiatry & Mental Health, Maharajgunj Medical Campus, Kathmandu 3 Associate Professor, Department of Psychiatry & Mental Health, Maharajgunj Medical Campus, Kathmandu 4. Lecturer, Department of Psychiatry & Mental Health, Maharajgunj Medical Campus, Kathmandu

E-mail *Corresponding author : drpraveen1@hotmail.com

Abstract

Introduction: Prisoners are one of the most vulnerable groups for having high prevalence of mental illness. There is a dearth of major studies conducted amongst prisoners in Nepal. The basic objective of this study is to study prevalence and nature of psychiatric morbidity in prisoners attending general OPD of Central jail Hospital, Kathmandu.

Material And Method: This was a descriptive, cross-sectional study carried out in prisoners attending OPD of central jail for a period of six months. Initial screening was done with self- reporting questionnaire (SRQ) and those having distress on SRQ were interviewed and diagnosis was made based on ICD-10 DCR and data analysis was done using SPSS version 16.

Results: A total of 121 prisoners out of 300 prisoners attending OPD of central jail hospital during a period of six months had been diagnosed to suffer from psychiatric morbidity. Majority of cases were within age group 26-30 years (20.7%) with male preponderance (76.9%), married (69.4%), educated up to higher secondary level (38%), doing occupation as labor work (24%), Hindus (62.8%) with janajatis (32.2%), having low socioeconomic status (51.2%), belonging to joint family (50.4%) and were from rural areas (45.4%). Murder was the most common offence committed (33.9%) followed by drug trafficking (28.1%). Most common primary diagnosis belong to Neurotic, stress related and somatoform disorder (57%) followed by mood disorder (32.2%). Most common psychiatric morbidity among prisoners was generalized anxiety disorder (36.4%) followed by Moderate depressive episode (23.1%) and somatoform disorder (9.1%). The overall prevalence of psychiatric morbidity in prisoners attending OPD of central jail hospital was found to be 40.33%.

Conclusion: A substantial burden of psychiatric morbidity exists in prison population of Nepal. Prompt recognition and treatment of mental illness in prison lead to decrease in functional disability and better quality of life.

Keywords: Prevalence, Prisoners, Psychiatric Morbidity

INTRODUCTION

Common mental health problems are prevalent in prison. Systematic information on the prevalence and types of mental disorders in prisoners is scarce although available data suggest that psychiatric disorders are fairly common in this population.¹

In many different countries, severe mental disorders have been reported to occur 5–10 times more frequently among people in prison than in the general population.^{2,3}

There is a high prevalence of poor mental health among young people in prison; 95% suffer at least one mental health problem and 80% suffer two or more.⁴

A report has indicated that 87% of Asian countries have had increasing numbers of prisoners over the past decade.⁵ Despite this, little is known about non-Western prisoners. A systematic review in 2002 only found three papers from non-Western societies, with combined sample of 326 prisoners.²

A recent meta-analysis of sixty-two prison mental health surveys found that inmates were substantially more likely to have a psychotic illness, major depression, and a personality disorder than the general population.² There are few Australian studies measuring the prevalence of mental illness among prisoners and all found a high prevalence of mental disorder in correctional community studies.^{1,6}

There has been a significant increase in prison population in Nepal over last decade. Till date, no significant research studies have been carried out to determine the burden of psychiatric illness among these populations. This study has been prompted to determine socio-demographic profile and common psychiatric illnesses among prisoners, so that mental health services in prison could be given priority and routinely carried out in future. Early recognition and treatment of mental illness lead to decrease in functional disability and promoting better quality of life among prisoners.

MATERIAL AND METHOD

This was a descriptive cross-sectional study conducted in one of the largest prisons in Nepal, located in Kathmandu (Central Jail, Bhadrakali). This prison housed 1900 inmates, with 1700 male and 200 female in mid-2011. Prisoners attending general OPD of central jail hospital, conducted every Friday for duration of 6 months were included in the study on the basis of inclusion and exclusion criteria. The aim of study was to find out the prevalence and nature of psychiatric morbidity in prisoners attending general OPD of Central Jail Hospital. Prisoners between the age group 15-65 years, giving informed consent to participate in study and meeting criteria for diagnosis of mental illness were included in the study. Prisoners with personality disorders and substance use disorder, not giving informed consent and suffering from medical illness likely to cause psychiatric manifestation were excluded from the study. Consent was taken from prisoners and jail authority and the purpose of the study was explained to the subjects. All participants were informed that study was confidential and anonymous, conducted by doctor from outside the prison and participation was voluntary. Prisoners were interviewed alone by interviewer and each interview took

about 45-60 minutes on an average. Subjects were given Semi structured Performa and Self-Reporting Questionnaire and diagnosis of psychiatric morbidity was made according to ICD-10 DCR⁷ and was confirmed by two consultant psychiatrist who assessed the patient separately. A semi structured Performa was specially designed which included socio-demographic profile and prison- specific details like type of offence committed, legal status, length of time spent in prison and onset of symptoms after imprisonment. Then subjects were administered Self-Reporting Questionnaire (SRQ), a 25 item inventory originally designed to screen for mental disorders in developing countries by Harding et al.⁸

The SRQ-25 has been translated into Nepali version and validated among primary health care attendants in Nepal by Wright et al.⁹

They have suggested a score of 10/11 as an optional cut off point with sensitivity of 91% and specificity of 74% for screening people with probable psychiatric illness. Prisoners who were found to have distress on SRQ, were then interviewed and diagnosis of psychiatric morbidity was made using Tenth Revision of International Classification of Diseases-Diagnostic Criteria for Research (ICD-10 DCR) which has been developed by the Division of Mental Health of the World Health Organization (WHO, 1992). A total of 300 prisoners attended OPD during a six month study period, of which 200 were male and 100 were females and 140 prisoners (105 males and 35 females) were found to have distress on SRQ and those were subsequently interviewed and eventually only 121 cases (93 male, 28 female) met ICD-10 DCR diagnostic criteria for psychiatric morbidity and only those were taken into consideration for data analysis. Data were analyzed with the use of computer program of Statistical package for the social sciences (SPSS) version 16.0. Results were presented as frequencies and percentages where required.

RESULT

Out of 300 prisoners that attended general OPD in central jail hospital, 121 prisoners have been found to have psychiatric morbidity. The majority of cases were within the age group 26-30 years (n= 25, 20.7 %). Total numbers of male were 93 (76.9%) and female were 28 (23.1%) and there is

predominance of male by large margin. Data shows majority of cases were married (n=84, 69.4%), educated up to higher secondary level (n=46, 38 %). Majority of cases had occupation as labor work (n=29, 24%) and were Hindus (62.8%), from lower SES (n=62, 51.2 %) and from joint family (n=61, 50.4%). Majority (89.3%, n=108) of cases were from Nepal, from rural areas 45.5% (n= 55), were Janajati (n=39, 32.2%). (Table 1)

Murder was the most common offence committed accounting for 33.9% of cases (n=41), followed by drug trafficking (28.1%). Majority of cases were sentenced (n=86, 71.1%) and were staying in prison between 12-24 months (26.4%, n=32). Out of 121 cases, majority of cases (n=44, 36.4%) had developed the symptoms of specific

psychiatric disorder within 6 months. (Table 2)

Neurotic, stress-related and somatoform disorder constitute the majority of cases (n=69, 57%, overall prevalence-23%), followed by Mood disorder (n=39, 32.2%, overall prevalence-13%); Overall prevalence of psychosis (including Organic) was found to be 3.67% in OPD setting. (Table 3)

Generalized anxiety disorder constitute 36.4% of cases (prevalence-14.67%) followed by Moderate depressive episode (23.1%, prevalence-9.33%), Paranoid schizophrenia (5.8%, prevalence-2.33%) and persistent somatoform pain disorder (5%). (Table 4)

Overall prevalence of psychiatric morbidity in prisoners attending general OPD of central jail hospital was found to be 40.33%

Table 1: Socio-demographic Profile of Cases

| Distribution by Age Group | | | Distribution by Education Level | | | Distribution by Marital Status | | |
|----------------------------|------------|------------|---------------------------------|------------|------------|--|------------|------------|
| Age (Years) | Frequency | % | Education | Frequency | % | Marital Status | Frequency | % |
| 16-20 | 11 | 9.1 | Illiterate | 22 | 18.2 | Married | 84 | 69.4 |
| 21-25 | 19 | 15.7 | Primary | 16 | 13.2 | Single | 31 | 25.6 |
| 26-30 | 25 | 20.7 | Lower Secondary | 25 | 20.7 | Separated | 5 | 4.1 |
| 31-35 | 17 | 14 | Higher Secondary | 46 | 38 | Divorced | 1 | 0.8 |
| 36-40 | 23 | 19 | Bachelor | 9 | 7.4 | Total | 121 | 100 |
| 41-45 | 9 | 7.4 | Masters | 3 | 2.5 | Distribution by Gender | | |
| 46-50 | 5 | 4.1 | Total | 121 | 100 | Sex | Frequency | % |
| 51-55 | 5 | 4.1 | Distribution by Religion | | | Male | 93 | 76.9 |
| Above 55 | 7 | 5.8 | Religion | Frequency | % | Female | 28 | 23.1 |
| Total | 121 | 100 | Hindu | 76 | 62.8 | Total | 121 | 100 |
| Distribution by Occupation | | | Buddhist | 26 | 21.5 | Distribution by Socio- Economic Status | | |
| Occupation | Frequency | % | Christian | 8 | 6.6 | SES | Frequency | % |
| Business | 26 | 21.5 | Muslim | 11 | 9.1 | Lower | 62 | 51.2 |
| Farmer | 19 | 15.7 | Total | 121 | 100 | Middle | 56 | 46.3 |
| Labor | 29 | 24 | Distribution by type of Family | | | Upper | 3 | 2.5 |
| Service | 15 | 12.4 | Type | Frequency | % | Total | 121 | 100 |
| Student | 15 | 12.4 | Nuclear | 54 | 44.6 | Distribution by Ethnic Group/ Caste | | |
| Housewife | 10 | 8.3 | Joint | 61 | 50.4 | Caste | Frequency | % |
| Unemployed | 7 | 5.8 | Extended | 1 | 0.8 | Brahmin | 19 | 15.7 |
| Total | 121 | 100 | Single | 5 | 4.1 | Kshatriya | 21 | 17.4 |
| Distribution by Settlement | | | Total | 121 | 100 | Newar | 7 | |
| Settlement | Frequency | % | | | | Janajatis | 39 | 32.2 |
| Urban | 43 | 35.5 | | | | Dalits | 16 | 13.2 |
| Semi-urban | 23 | 19 | | | | Madhesis | 11 | 9.1 |
| Rural | 55 | 45.5 | | | | Others | 8 | 6.6 |
| Total | 121 | 100 | | | | Total | 121 | 100 |

Table 2: Distribution of cases on basis of prison- specific characteristics:

| Distribution by Offence Committed | | | Distribution by Length of Time Spent in Prison(Months) | | |
|--|------------------|------------|--|------------------|------------|
| Offence Committed | Frequency | % | Time in Prison | Frequency | % |
| Murder | 41 | 33.9 | 0-12 | 30 | 24.8 |
| Attempted Murder | 6 | 5 | 12-24 | 32 | 26.4 |
| Drug Trafficking | 34 | 28.1 | 24-36 | 10 | 8.3 |
| Stealing/ Break and enter/ Burglary | 3 | 2.5 | 36-48 | 21 | 17.4 |
| Fraud/ Misappropriation | 10 | 8.3 | 48-60 | 14 | 11.6 |
| Armed robbery | 6 | 5 | Above 60 | 14 | 11.6 |
| Rape | 9 | 7.4 | Total | 121 | 100 |
| Human trafficking | 7 | 5.8 | Distribution by Onset of Symptoms after Imprisonment (Months) | | |
| Kidnapping | 5 | 4.1 | Onset | Frequency | % |
| Total | 121 | 100 | 0-6 | 44 | 36.4 |
| Distribution by Legal Status | | | 6-12 | 24 | 19.8 |
| Legal Status | Frequency | % | 12-24 | 18 | 14.9 |
| Sentenced | 86 | 71.1 | 24-36 | 16 | 13.2 |
| Remand | 35 | 28.9 | 36-48 | 10 | 8.3 |
| Total | 121 | 100 | 48-60 | 4 | 3.3 |
| | | | Above 60 | 5 | 4.1 |
| | | | Total | 121 | 100 |

Table 3: Distribution of cases according to Primary diagnosis

| Primary Diagnosis | Frequency | % | Prevalence |
|--|------------|------------|--------------|
| Organic, including symptomatic, mental disorders- F00-F09 | 2 | 1.7 | 0.66 |
| Psychosis (Schizophrenia, schizotypal & delusional disorder)- F20-F29 | 9 | 7.4 | 3 |
| Mood (affective) disorder- F30-F39 | 39 | 32.2 | 13 |
| Neurotic, stress-related & somatoform disorder- F40-F48 | 69 | 57 | 23 |
| Behavioural syndromes associated with physiological disturbances and physical factors- F50-F59 | 2 | 1.7 | 0.66 |
| Total | 121 | 100 | 40.33 |

Table 4: Distribution of cases according to Secondary diagnosis

| Secondary Diagnosis (ICD-10 DCR) | Frequency | % | % each category | Prevalence |
|---|------------|-------------|-----------------|--------------|
| Other specified mental disorders due to brain damage & dysfunction & to physical disease (Epileptic Psychosis)- F06.8 | 2 | 1.7 | 18.2 | 0.66 |
| Paranoid schizophrenia- F20.0 | 7 | 5.8 | 63.6 | 2.33 |
| Acute polymorphic psychotic disorder with symptoms of schizophrenia- F23.1 | 1 | 0.8 | 9.1 | 0.33 |
| Unspecified nonorganic psychosis (Psychosis NOS)- F29 | 1 | 0.8 | 9.1 | 0.33 |
| Total psychotic disorder (including Epileptic psychosis) | 11 | 9.1 | 100 | 3.67 |
| Mania with psychotic symptoms-F30.2 | 1 | 0.8 | 2.6 | 0.33 |
| BPAD, current episode manic without psychotic symptoms- F31.1 | 2 | 1.7 | 5.1 | 0.67 |
| BPAD, current episode moderate or mild depression- F31.3 | 1 | 0.8 | 5.1 | 0.33 |
| BPAD, current episode severe depression with psychotic symptoms- F31.5 | 1 | 0.8 | 2.6 | 0.33 |
| Moderate depressive episode- F32.1 | 28 | 23.1 | 71.8 | 9.33 |
| Severe depressive episode without psychotic symptoms- F32.2 | 1 | 0.8 | 2.6 | 0.33 |
| RDD, current episode moderate- F33.1 | 1 | 0.8 | 2.6 | 0.33 |
| RDD, current episode severe without psychotic symptoms- F33.2 | 1 | 0.8 | 2.6 | 0.33 |
| Dysthymia- F34.1 | 2 | 1.7 | 5.1 | 0.67 |
| Total affective (mood) disorders | 39 | 32.2 | 100 | 13.00 |
| Generalized anxiety disorder- F41.1 | 44 | 36.4 | 63.8 | 14.67 |
| Mixed anxiety and depressive disorder- F41.2 | 5 | 4.1 | 7.2 | 1.67 |
| Anxiety disorder, unspecified (Anxiety NOS)- F41.9 | 2 | 1.7 | 2.9 | 0.67 |
| Adjustment disorder with brief depressive reaction- F43.2.20 | 3 | 2.5 | 4.3 | 1.00 |
| Adjustment disorder with prolonged depressive reaction-F43.2.21 | 1 | 0.8 | 1.4 | 0.33 |
| Adjustment disorder with mixed anxiety and depressive reaction- F43.2.22 | 3 | 2.5 | 4.3 | 1.00 |
| Somatization disorder- F45.0 | 2 | 1.7 | 2.9 | 0.67 |
| Undifferentiated somatoform disorder- F45.1 | 1 | 0.8 | 1.4 | 0.33 |
| Hypochondriacal disorder- F45.2 | 1 | 0.8 | 1.4 | 0.33 |
| Somatoform autonomic dysfunction- F45.3 | 1 | 0.8 | 1.4 | 0.33 |
| Persistent somatoform pain disorder- F45.4 | 6 | 5 | 8.7 | 2.00 |
| Total neurotic, stress-related and somatoform disorders | 69 | 57 | 100 | 23.00 |
| Nonorganic insomnia- F51.0 | 2 | 1.7 | - | 0.67 |
| Grand Total | 121 | 100 | - | 40.33 |

DISCUSSION:

Our study showed that majority of prisoners were of 26-30 years of age and with male preponderance (76.9%). Similar finding was found in study done by Assadi et al.¹⁰ and Fazel and Danesh² in which mean age of prisoners was 32.7 years and 29 years respectively and men comprise 81% of total population. This coincidence may be due to the young and productive group being overrepresented in the prison population. In the current study, data showed that majority of cases were married (69.4%). Similar findings were observed in Study done by Assadi et al.¹⁰ where 50.4% were married. There is also a possibility of getting married earlier in country like Nepal as compared to the western countries. In this study, majority of cases were educated up to

higher secondary level (38%) which is similar to another study done by Butler et al.¹¹ where females with post school qualification had highest level of any psychiatric disorder. The fact that most of the prisoners were janajatis (32.2%) corroborates with finding from study done by Butler et al.¹¹ where the incidence of mental health disorder is higher in those from ethnic minority groups. In central prison of Nepal, people from ethnic minority and from rural areas were found to be over represented in prison population owing to low education, unemployment, rampant migration to urban area in search of employment or for better job opportunities and this population has more propensity to be involved in varied offences.

In this study, Murder and drug trafficking were the most common offence committed. Study by Assadi et al.¹⁰ showed people convicted of drug-related offences constitute the majority (about 50%) of inmates, about 20% for non-violent crimes (such as fraud, pick pocketing and burglary) and more than 10% for violent offences (murder, kidnapping and armed robbery).

Psychiatric Morbidity

121 (M=93, F=28) prisoners, out of 300 prisoners (M=200, F=100), attending general OPD of central jail, were found to meet ICD-10 DCR criteria for psychiatric morbidity giving rise to overall prevalence rate of 40.33%. This prevalence rate is almost similar to the study done by Gunn et al.¹² where 37% of prisoners had psychiatric disorders. Other Australian and New Zealand studies of prisoners have found prevalence rates of between 25% and 50% for non-psychotic disorders such as major depression, anxiety disorders and post-traumatic stress disorder.^{1,11,13,14,15} A study by Birmingham et al.¹⁶ on male prisoners showed that 25% had one or more current mental disorder after excluding substance abuse. However, Gubrin et al.¹⁷ and Brooke et al.¹⁸ found out in their study that 62% had current psychiatric disorder and 71% had life time psychiatric disorder. These studies showed a high prevalence compared to our study due to the fact that our study did not include personality disorders and substance abuse disorders, which are the two major domains of morbidity in prisoners.

Neurotic, stress-related and somatoform disorder-

Generalized anxiety disorder (GAD) is the most common morbidity in our study comprising 36.4% of cases (n=44, overall prevalence=14.67%). Our findings matched with study done by Butler et al.¹¹ which showed that most common group of mental disorders were anxiety disorders with over one third (36%) of those screened experiencing an anxiety disorder in the previous twelve months, with GAD in 15% of reception and 13% of sentenced prisoners. Brooke et al.¹⁸ found out that 26% had neurotic disorder, which approximates our finding in which prevalence of neurotic, stress-

related and somatoform disorder was found to be 23%. Study by Andersen¹⁹ and Wright et al.²⁰ showed 16% and 15.2% had neurotic disorders, which also approximates our finding. However, study by Assadi et al.¹⁰, Birmingham et al.¹⁶, Davidson et al.²¹ showed that 7.7% (GAD-5.7%), 6% and 10.8% respectively had anxiety disorder. These findings are lower than that found in our study. It may be due to different screening tools used in these studies. In addition, our study has been conducted in out-patient department of prison, where only patients with significant distress will attend and seek for medical help.

Mood (affective) disorder-

Moderate depressive episode is the most common morbidity among this group comprising 23.1% of cases (n=28, overall prevalence=9.33%) and is the most common diagnosis after GAD in our study. This finding has similarity to Fazel and Danesh² where 10% of men and 12% of women had suffered from major depression. Similarly, study by Herrman et al.¹, Andersen¹⁹ and Davidson et al.²¹ found that 12%, 10% and 14.1% had major depression, which coincides with our finding. However, study by Fotiadou et al.²² and Tye and Mullen¹⁵ found higher prevalence rates of major depression in prisoners (27.5% and 44%). This dissimilarity in prevalence rates between different studies may be attributed to various screening and diagnostic tools in different studies. Moreover, our study only took into account those prisoners who attended general OPD once in a week for a duration of 6 months that may lead to sampling biasness. Assadi et al.¹⁰ revealed that 29.1% of sample met diagnostic criteria for major depressive disorder and 1.5% for dysthymic disorder. This finding is higher than that found in our study, which is around 10%. This may be due to the hesitancy in attending OPD of central jail due to sadness, fatigability and loss of interest related to this subgroup of disease.

Psychosis (schizophrenia, schizotypal and delusional disorder)-

Schizophrenia, schizotypal and delusional disorder comprise 7.4% (n=9) of psychiatric morbidity in our study. i.e. Prevalence=3%. In addition organic psychosis (Epileptic psychosis)

were present in 1.7% of cases (n=2, prevalence=0.67%) giving rise to total of 9.1% cases (n=11) of psychosis. (Overall prevalence of psychosis=3.67%).(Table 4)

Paranoid schizophrenia is the most common diagnosis comprising 63.6% of all psychotic cases. Paranoid schizophrenia comprise 5.8% of cases (n=7, overall prevalence=2.33%). The prevalence of schizophrenia and related psychosis in our study is similar to the study done by Assadi et al.¹⁰ where 2.0% had schizophrenia, 0.3% delusional disorder and 0.8% psychotic disorder not otherwise specified. Herrman et al¹ also found that 6 prisoners (3%) received current diagnoses of psychotic disorders. Fazel and Danesh² showed that 3.7% of men and 4% of women had psychotic illnesses that match with our findings. Other studies also showed that 4% and 5% had schizophrenia and other psychotic disorders.^{16,18} Study conducted by Wright et al.²⁰ in the Irish prison population showed 5.4% of the committal and 5.4% of the cross-sectional sample had a psychotic illness within the previous six months. Fazel and Grann²³ found that 20% of homicide offenders in Sweden had a psychotic illness with 8.9% schizophrenia, 6.5% other psychosis, 1.4% drug-induced psychosis and 1% organic psychosis. Parson et al²⁴ found prevalence of 9.9% for schizophrenia and other psychotic disorders. This is a much higher percentage than that reported in the Fazel and Danesh review² as well as in our study. Current and life time prevalence rate of schizophrenia as studied by Fotiadou et al²² was found to be 3.75%. Nielsen and Misrachi²⁵ reported 42 cases out of 788 prisoners (5.3%) to have psychotic illness and 13 other individuals were considered possible cases of psychotic illness giving an overall likely prevalence of 6.9%. Studies¹⁴ in remanded prisoners have found prevalence of psychotic illness, such as schizophrenia, ranging from 5.1% to 9.6 %. Study by Andersen¹⁹ showed 7% for psychotic disorders and 4% for schizophrenia. Also, 24% of sample was diagnosed with psychosis in a study by Tye and Mullen.¹⁵

LIMITATION OF THE STUDY:

The participants were recruited from a single prison (central jail, Bhadrakali, Kathmandu).

Only those prisoners attending general OPD voluntarily for check-up once in a week were included in the study rather than all sample of prison population. This may lead to dissimilarities in results when compared to international research studies where whole sample of prison population were included in study. The study did not include personality disorder (Axis II) and substance use disorders, which are among the most common psychiatry morbidity in prisoners and hence underestimated the extent of morbidity.

CONCLUSION:

Prisoners are amongst the most vulnerable groups affected by mental illness. Common mental health problems are prevalent in prison. Considering the existing burden of psychiatric morbidity in general OPD of prison, further longitudinal, long term research studies in this population is warranted in our country to determine actual burden of mental illness in prisoners.

REFERENCES:

1. Herrman H, McGorry P, Mills J, Singh B. Hidden severe psychiatric morbidity in sentenced prisoners: An Australian Study. *American Journal of Psychiatry*. 1991; 148(2): 236-9.
2. Fazel S & Danesh J. Serious mental disorder in 23000 prisoners: a systematic review of 62 surveys. *Lancet*. 2002; 359: 545-50.
3. Jablensky A, McGrath JJ, Herrman H, Castle DJ, Gureje O, Morgan V, Korten A. *People Living With Psychotic Illness: An Australian Study. National Survey of Mental Health and Wellbeing 1999*, Canberra, Commonwealth of Australia.
4. Lader D, Singleton N, and Meltzer H. *Psychiatric morbidity among young offenders in England and Wales. International Review of Psychiatry*. 2000; 15: 144-47.
5. Walmsley R. *World Prison Population List (4th edn)*, London: Home Office Research Development and Statistics Directorate 2003. <http://www.homeoffice.gov.uk/rds/pdfs2/r188.pdf>
6. Hurley W, Dunne MP. *Psychological distress and psychiatric morbidity in women prisoners. Australian & New Zealand Journal of Psychiatry*. 1996; 25:461-70.
7. World Health Organization (WHO). *The ICD-10 classification of Mental and Behavioral Disorders: Diagnostic criteria for research 1992*, Geneva.
8. Harding TW, De Arango V, Baltazar J, et al. *Mental disorders in primary health care: a study of their frequency and diagnosis in four developing countries. Psychosocial Medicine*. 1980; 10:231-41.

9. Wright C, Nepal MK, Jones B. *Mental Health Patients in Primary Health Care Services in Nepal*. 1989; 3(3): 224-30.
10. Assadi SM, Noroozian M, Pakravannejad M, Yahyazadeh O, Aghayan S, Shariat SV. *Psychiatric morbidity among sentenced prisoners: prevalence study in Iran*. *British Journal of Psychiatry*. 2006; 188(2): 159- 64.
11. Butler T, Allnutt S, Cain D et al. *Mental disorder in the New South Wales prisoner population*. *Aust N Z J Psychiatry*. 2005; 39: 407-13.
12. Gunn J, Maden A & Swinton M. *Treatment Needs of Prisoners with Psychiatric Disorders*. *British Medical Journal*. 1991; 303: 338-41.
13. Brinded PM, Simpson AI, Laidlaw TM, et al. *Prevalence of psychiatric disorders in New Zealand prisons: a national study*. *Aust NZ J Psychiatry*. 2001; 35:166-73.
14. Butler T, Andrews G, Allnutt S, et al. *Mental disorders in Australian prisoners: a comparison with a community sample*. *Aust N Z J Psychiatry*. 2006; 40: 272-6.
15. Tye CS and Mullen PE. *Mental disorders in female prisoners*. *Australian and New Zealand Journal of Psychiatry*. 2006; 40: 266-71.
16. Birmingham L, Mason D & Grubin D. *Prevalence of mental disorder in remand prisoners: Consecutive case study*. *British Medical Journal*. 1996; 313(7017): 1521-4.
17. Gubrin D, Birmingham L & Mason D. *The Durham Remand Study*. University of Newcastle and Newcastle City Health Trust. London: HM Prison Service/ Northern and Yorkshire Regional Health Authority 1997.
18. Brooke D, Taylor C, Gunn J & Maden A. *Point prevalence of mental disorder in unconvicted male prisoners in England and Wales*. *British Medical Journal*. 1996; 313(7017): 1524-7.
19. Anderson HS. *Mental health in prison populations. A review – with special emphasis on a study of Danish prisoners on remand* [Review]. *Acta Psychiatrica Scandinavica, Supplementum*. 2004; 424: 5-59
20. Wright, Brenda, Duffy, Harry G, et al. *Psychiatric morbidity among women prisoners newly committed*. *Irish Journal of Psychological Medicine*. 2006; 23 (2): 47-53.
21. Davidson M, Humphreys MS, Johnstone EC & Owens DGC. *Prevalence of psychiatric morbidity among remand prisoners in Scotland*. *British Journal of Psychiatry*. 1995; 167(4): 545-8.
22. Fotiadou M, Livaditis M, Manou I, Kaniotou E, Xenitidis K. *Prevalence of mental disorders and deliberate self-harm in Greek male prisoners*. *International Journal of Law and Psychiatry*. 2006; 29: 68-73.
23. Fazel S, Grann M. *Psychiatric morbidity among homicide offenders: a Swedish population study*. *American Journal of Psychiatry*. 2004; 161: 2129-31.
24. Parsons S, Walker L & Grubin D. *Prevalence of mental disorder in female remand prisons*. *Journal of Forensic Psychiatry*. 2001; 12: 194-202.
25. Nielssen O and Misrachi S. *Prevalence of psychoses on reception to male prisons in New South Wales* [Review]. *Australian and New Zealand Journal of Psychiatry*. 2005; 39: 453-59.