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Screening of psychiatric morbidity in a male only prison

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Abstract

Introduction: Psychiatric morbidities such as anxiety and depression are disproportionately higher among prisoners than in general population. Around one in seven prisoners are diagnosed with psychosis or depression. The chronicity of psychiatric morbidities may lead to suicidality among prisoners. Thus, the aim of this study was to screen psychiatric morbidity in a male only prison.

Method: This was cross-sectional analytical study done at Nakkhu Jail in Nepal. A total of 490 prisoners selected by total enumerative sampling were interviewed face-to-face. Modified Mini Screen was used to find out psychiatric morbidities. Data analysis was done using frequency, percentage, mean and standard deviation. Association and correlation between information related to prisoners and environmental variables and psychiatric morbidity were analyzed using Chi-square and Spearman's rank correlation coefficient test respectively.

Result: The psychiatric morbidity was found positive among 10.41% of prisoners. Suicidality was present among 3.47% of prisoners and 3.06% had post-traumatic stress disorder. There was significant association between length of stay in prison ($p=0.026$), satisfaction on living facilities ($p=0.017$), regular health check-up ($p<0.001$), doctor appointment during health problems ($p<0.001$) and psychiatric morbidity.

Conclusion: About one tenth of prisoners were found positive for psychiatric morbidity. There was significant association between length of stay, satisfaction on living facilities, regular health check-up, doctor appointment during health problems and psychiatric morbidity. Improving living services, early recognition of psychiatric morbidity through periodic health services and treatment in prison may lead to low prevalence of psychiatric morbidity.

Keywords: prisoners, mood disorder, psychotic disorder, post-traumatic stress disorder, suicidality

Introduction

Psychiatric morbidity generally refers to the incidence of both physical and psychological deterioration as a result of psychological condition.¹ Psychiatric morbidity usually builds up gradually and does not have a sudden, short-span onset.² Psychiatric morbidity occur at high rates in all countries of the world.³ An estimated 450 million people worldwide suffer from mental or behavioural disorders.³ However, the rate of psychiatric morbidity among prisoners is higher than general population.⁴ Around one in seven prisoner is diagnosed with psychosis or depression.⁵

The reasons for the higher psychiatric morbidity among prisoners may include poor diet, unhygienic living conditions, isolation, violence among prisoners, overcrowding, and unavailability of health services in the for the prisoners, especially mental health services.³ Prison overcrowding have been growing challenge in Nepal.⁶ There were 21,835 prisoners in 74 prisons in Nepal as of March, 2019.⁶ The high prevalence of psychiatric morbidity may result in suicide.⁷ It is estimated worldwide that suicide rates within prisons are four to five times more than those of the general population.⁷ Screening is considered as one of key component of suicide prevention by World Health Organization.⁷ Assessment of psychiatric morbidity is important for early diagnosis, treatment and prevention of further complications.

This study aimed to screen the psychiatric morbidity in a male only prison, to determine association between prisoners' related information and psychiatric morbidity, to examine association between prison's environment related information and psychiatric morbidity and to find out correlation between prisoners related and environment related factors and psychiatric morbidity.

Method

This cross-sectional analytical study was conducted at District Jail of Lalitpur, Nakkhu, Nepal from September 2019 to November 2019. There were 1288 prisoners including 106 foreign prisoners during the study period. Total enumerative sampling was used for the selection of samples and the total sample size was 490. Prisoners who were willing to participate and those who gave consent for referral services were included in the study. The prisoners who were imprisoned due to substance abuse, who were already diagnosed for psychiatric illness and were on medication and foreign prisoners were excluded from the study.

Permission was taken from the research committee of School of Nursing and Midwifery (Lalitpur Nursing Campus). Administrative approval was received from Director General of Department of Prison Management and Head of Nakkhu Jail. Ethical approval was obtained from Institutional Review Committee (IRC) of Patan Academy of Health Sciences (PNM 1906281258).

The data collection instrument for this study was used in Nepali language with three parts: Part 1: Questions related to information related to prisoners age, length of stay in the prison, type of crime and previous imprisonment part 2: Questions related to environmental variables living facilities, availability of health services, and satisfaction regarding number of visit by family members and Part 3: Modified Mini Screen (MMS).⁸ MMS consists of three sections: Section A identifies persons in need of assessment in a domain of mood disorders and has 6 questions; Section B identifies persons in need of assessment in a domain of anxiety disorders and has 9 questions; Section C identifies persons in need of assessment in a domain of psychotic disorders and has 7 questions. Question No. 14 and 15 identifies persons in need of assessment in domain of post-traumatic stress disorder. Question No. 4 relates to Suicidality. Written consent was prepared both in English and Nepali

appropriate for the vulnerable group. Respondents were well explained that their name would be revealed to the head of the prison if they were screened as positive after the analysis. A statement indicating that the respondent has understood all the information in the consent form and is willing to participate voluntarily was obtained. Confidentiality of respondents was maintained by coding the questionnaire. Decoding was done only if the respondents was screened as positive. The prisoners who required further assessment (screen positive) were referred after the analysis of the obtained data to the consultant psychiatrist of the mental hospital within the premises of the Jail who provided regular services. Since data was collected in a paper form, the paper sheets were kept in a locker. After the data collection, data was checked out thoroughly then edited, coded, and entered into Statistical Package for the Social Science (SPSS) 16 software. The data was analyzed using descriptive statistical tests such as frequency, percentage, mean and standard deviation for screening the psychiatric morbidities. The association between variables age, length of stay in the prison, type of crime, previous imprisonment, living facilities, health services, satisfaction regarding number of visits by family members and psychiatric morbidity was analyzed using Chi-square. Data was tested for normality test using scatterplot and Shapiro-Wilk test. Since p-value of Shapiro-Wilk test was less than 0.05, correlation between variables length of stay in the prison, living facilities, health services members and psychiatric morbidity was done using non-parametric Spearman's rank correlation coefficient test. Significance was set as $p < 0.05$.

Result

The results revealed that 51(10.41%) prisoners had either score of more than five or presence of Suicidality or PTSD which is indicative of need of referral for the further

evaluation of presence of psychiatric morbidity. Likewise, 17 (3.47%) prisoners should be referred for further evaluation of suicide regardless of patient's total score. Similarly, 15 (3.06%) prisoners should be referred for further evaluation of PTSD, Table 1.

There was no association between age ($p=0.767$), type of crime ($p=0.957$) and previous imprisonment in the same prison ($p=0.567$) and psychiatric morbidity but there was association ($p=0.026$) between length of stay in prison and psychiatric morbidity, Table 2.

There was a significant association between satisfaction on living facilities ($p=0.017$), regular health check-up ($p < 0.001$) and arrangement of appointment with doctor when health problem arise ($p < 0.001$) and psychiatric morbidity. However, there was no association found between satisfaction regarding visit by family members ($p=0.202$) and psychiatric morbidity, Table 3.

The satisfaction on living facilities ($p=0.017$) and doctor appointment during health problem ($p < 0.001$) had negative relationship with psychiatric morbidity and regular health check-up had positive relationship ($p < 0.001$) with psychiatric morbidity (Table 6). The better the living facilities such as food, water supply, spacing and bathroom, the prisoners had less chance of being screened as positive for psychiatric morbidity. Similarly, if the doctors' appointment was provided when they fall ill, the prisoners had less chance of being screened as positive for psychiatric morbidity. However, if regular health check-up was provided, the prisoners had more chances of being screened as positive for psychiatric morbidity. Likewise, the length of stay in prison had negative relationship ($p=0.026$) with psychiatric morbidity. The prisoners who had less length of stay in the prison had high chances of having psychiatric morbidity.

Table 1. Screening of Psychiatric Morbidity using Modified Mini Screen. N=490

Variables	Frequency	Percentage
Psychiatric Morbidity		
Positive	51	10.41
Negative	439	89.59
Suicidality		
Present	17	3.47
Absent	473	96.53
PTSD		
Present	15	3.06
Absent	475	96.94

Table 2. Association between Information related to Prisoners and Psychiatric Morbidity. N=490

Information related to prisoners	Psychiatric morbidity		Chi-square Value	p-value
	Present	Absent		
Age				
<40	40	352	0.088	0.767
≥ 40	11	87		
Length of stay in prison				
< 1 year	36	238	4.970	0.026
≥ 1 year	15	201		
Type of crime committed				
Violent crime (Murder, attempt to murder, forced sexual intercourse, human trafficking)	25	209	0.036	0.849
Non-violent crime (Banking offence, theft, fraud, vehicular homicide, revenues crime, forgery)	26	230		
Previous imprisonment in the same prison				
Yes	2	34	0.981	0.567**
No	49	405		

** Fisher Exact Test

Table 3. Association between Environmental Information regarding Prison as Perceived by Prisoners and Psychiatric Morbidity. N=490

Characteristics	Psychiatric morbidity		Chi-square value	p-value
	Present	Absent		
Satisfaction on living facilities				
Yes	44	416	5.725	0.017
No	7	23		
Regular health check-up				
Done	16	49	16.22	0.000
Not done	35	390		
Doctor appointments during health problems				
Sometimes	9	13	22.98	0.000
Always	42	426		
Satisfaction on family members' number of visits				
Adequate	37	352	1.627	0.202
Inadequate	14	87		

Table 4. Relationship between information related to prisoners, environmental information and psychiatric morbidity. N=490

Variables	Satisfaction on living facilities	Regular health check-up	Doctor appointment during health problem	Length of stay in prison	Psychiatric morbidity
Satisfaction on living facilities	1				
Regular health check-up	-0.026	1			
Doctor appointment during health problem	0.027	-0.409**	1		
Length of stay in prison	-0.013	-0.044	0.034	1	
Psychiatric morbidity	-0.096*	0.106*	-0.103*	0.153**	1

**Correlation is significant at the 0.01 level (2-tailed), *Correlation is significant at the 0.05 level (2-tailed)

Discussion

In this study among 490 prisoners, 10.41% of prisoners were screened positive for psychiatric morbidity. This finding was similar to the cross-sectional study done in State of Sao Paulo, Brazil among 1192 prisoners in which the prevalence of psychotic, bipolar disorder and severe depression was 6.3%.⁹ Similarly, the prevalence was 15.4% done among 500 prisoners in Lahore, Pakistan.¹⁰ However, in the studies done in other parts of the world, the prevalence of psychiatric morbidity was much higher. The prevalence of psychiatric morbidity done among 119 prisoners in Kerala, India was 69.7%,¹¹ 57% in Jos, Nigeria¹ done among 608 prisoners, 46% in Hong Kong among 150 prisoners¹² and 45.06% in Attica, Greece among 495 prisoners.¹³ Likewise, suicidality was present among 3.47% of the prisoners of Nakkhu Jail in this study. This finding is similar to a study conducted in Sunsari, Nepal where 2.3% had suicidal ideation among 434 prisoners.¹⁴ However, the finding is contrast to study conducted in Amhara, Ethiopia among 727 prisoners where 17% had suicidal ideation.¹⁵

Similarly, the symptoms of Post-Traumatic Stress Disorder (PTSD) were present among 3.06% of the prisoners in this study. This finding is similar to that of a cross sectional study conducted in Pentonville, London among 197 prisoners in which the prevalence was 4.6%.¹⁶

The low prevalence rate of the positive screening of psychiatric morbidity in Nakkhu Jail may have been due to the availability of

good living facilities and health services. The other reason may be due to availability of services of mental hospital within the premises of the prison. Another very important reason for different prevalence of psychiatric morbidity in different prisons could be due to the heterogeneity of the tools used to screen. Since the prisoners were screened for the psychiatric morbidity as a whole but the prisoners with positivity for the anxiety disorder, depression and psychotic disorder were not separately identified, it might have affected the result as well. Age, type of crime committed and previous imprisonment in the same prison were not significantly associated with psychiatric morbidity whereas length of stay in the prison was significantly associated with psychiatric morbidity in this study. Similarly, age was not significantly associated in a study done in Sunsari, Nepal ($p=0.320$)¹⁴ and Kashan, Iran ($p=0.067$)¹⁷ But there are studies that showed significant statistical relationship between age and psychiatric morbidity. The positive association was seen among age and psychiatric morbidity in a study conducted in Nsawam, Ghana ($p=0.006$)¹⁸ and Jimma, Ethiopia ($p=0.007$).¹⁹

There was no significant association between type of crime and psychiatric morbidity in studies done in Sunsari, Nepal ($p=0.882$),¹⁴ Nsawam, Ghana ($p=0.679$).¹⁸ But the studies done in Kerala, India ($p<0.001$)¹¹ and Pakistan ($p=0.001$)²⁰ showed that the type of crime had significant association with psychiatric morbidity. Previous imprisonment was significantly associated with psychiatric morbidity in a study done in Sunsari, Nepal

($p=0.033$)¹⁴, Kerala, India ($p<0.001$)¹¹ and Jimma, Ethiopia ($p<0.001$).¹⁹

Length of stay in prison was significantly associated with psychiatric morbidity in studies done in Rio De Janeiro, Brazil ($p<0.001$)²¹ and Bahir Dar, Ethiopia where inmates who were sentenced to more than 5 and 1-5 years of imprisonment experienced depression 3.0 and 2.3 times more than those who were sentenced to less than one year of imprisonment.²² However, there was no association between length of stay in the prison and psychiatric morbidity in a study done in Jimma, Ethiopia ($p=0.210$)¹⁹ and Sao Paulo, Brazil ($p=0.063$).⁹ The living facilities provided in the prison and better adjustment to the prison environment may be the reasons for having no association between the information related to prisoner and psychiatric morbidity. Similarly, no separation of living space for prisoners according to type of crime or difference in behaviour by the authorities according to the type of crime in the prison might be the reason for no association between type of crime and psychiatric morbidity.

Likewise, there was a significant association between living facilities ($p=0.017$) and psychiatric morbidity. A similar finding was found in a study done in Benin, Nigeria ($p<0.001$).²³ However, a study done in Sunsari, Nepal showed no association ($p=0.287$).¹⁴ Similarly, regular health checkup ($p<0.001$) and arrangement of doctor appointments when health problem arise ($p<0.001$) had significant association with psychiatric morbidity. Likewise, prison health care services were found to be significantly associated with psychiatric morbidity in a cross-sectional study conducted in Sunsari, Nepal ($p=0.028$)¹⁴ and Benin, Nigeria ($p<0.001$).²³

In this study, there was no association ($p=0.202$) between the visits made by family members and psychiatric morbidity. Similarly, there was no relationship ($p=0.287$) between number of prisoners per cell and psychiatric morbidity in previous study done in Sunsari,

Nepal.¹⁴ However, there was significant association between prison visit and depression in a study done in Sao Paulo, Brazil ($p=0.005$)⁹ and Rio De Janeiro, Brazil ($p<0.20$).²¹

The findings of this research provided the data about the psychiatric morbidity among the prisoners. The findings regarding the screening of suicide among the prisoners could be useful for the administration of the prison to determine the risk of developing complication of psychiatric morbidity among prisoners and intervene immediately. The prisoners who were identified positive on screening of psychiatric morbidity got an opportunity to get referral services for the further diagnosis and treatment from the consultant psychiatrist. The identification of the personal and environmental factors that affected the psychiatric morbidity such as living facilities, regular health check-up and arrangement of doctor appointment when they fall ill helped administration improve these factors. There are some limitations to the study. The respondents were recruited from a single prison and there were only male prisoners in the prison for which the result could not be generalized for estimating the prevalence of psychiatric morbidity in other prisons of Nepal. The study was conducted in prison near to the capital city where the better living and health facilities were available which could have affected the screening of psychiatric morbidity.

Conclusion

This study revealed a low prevalence of psychiatric morbidity among prisoners in a male only prison on screening as compared to the studies done in other parts of the world. The length of stay in the prison, living facilities provided in the prison such as spacing, food, water, bathroom, regular health check-up and arrangement of doctor appointment when they fall ill had significant association with the psychiatric morbidity. The factors that had no association with psychiatric morbidity included the age of the prisoners, type of crime committed by the prisoners, previous

imprisonment and satisfaction on family members' number of visits.

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Conflict of Interest

None

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