

Original Research Article

# A cross sectional study of personality dimension and psychiatric morbidity in the male inmates of prison


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## Abstract

**Background:** Psychiatric illnesses are highly prevalent among inmates of prison than community. Personality dimensions of prisoners with mental illness score high on psychoticism, neuroticism and extraversion when compared to normal population.

**Aim and objectives:** To study the prevalence of psychiatric disorders among inmates of prison, to study personality dimensions of inmates of prison, to evaluate association between personality dimensions and psychiatric morbidity, to examine socio-demographic data of study sample.

**Materials and methods:** 100 male inmates of prison (both UT and CT) were selected by random sampling and interviewed to obtain socio-demographic data, psychiatric morbidity assessed by MINI V 5 and EPQRS for personality.

**Results:** 72 % of inmates of prison were found to have psychiatric morbidity (41% Alcohol abuse, 13% Major depressive episode, 9% Mood disorder with psychotic features, 3% each for psychotic disorder, cannabis and opioid abuse). There was a statistically significant association between various domains of EPQ and psychiatric disorders. All study subjects were males (100%) mean age of sample was 25.64 years, 50% were married, 30% illiterate, 71% from urban background, 36% semiskilled workers.

**Conclusion:** The results suggested that there is a considerable psychiatric morbidity among inmates of prison. Personality dimensions predicted psychiatric morbidity. There was a significant association between personality dimensions and psychiatric morbidity. There is an urgent need to identify, assess and manage psychiatric morbidity among prisoners to reduce further recurrence of crime, to motivate prisoners with mental illness to give-up illicit substance use.

## Key words

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Psychiatric morbidity, Prison inmates, Personality dimensions.

## Introduction

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Psychiatric disorders are very much reported among prisoners [1]. PWMI also commit offence or get involved in criminal activities because of their poor judgment, suspiciousness, delusions, hallucinations and poor impulse control.

It is also quite possible that act of incarceration itself may trigger or worsen already pre-existing psychiatric problems [2]. Conditions in jail also need coping skills which if not effective lead to adjustment disorders. Singh, Verma [3] studied 50 consecutive convicted prisoners of section IPC 302 (homicide) at Amritsar central jail. They found anxiety neurosis in 4(8%), depression in 8(16%), schizophrenia 2(4%) sexual problems in 2(4%), alcohol related problems in 6(12%), opium dependence in 5(10%). 35(70%) patients were found to have mental illness in prison population, 15(30%) subjects were found to have no evidence of psychiatric disorders. Somasundaram [4] studied 53 criminal patients admitted to government mental hospital, found 40 (80%) subjects suffered from schizophrenia, 3(6%) mania, 7(14%) depression, 1(2%) epilepsy, 2 (4%) temporary insanity. Jha [5] studied case records of criminal patients in mental hospital Ranchi between 1925-63, prevalence of psychiatric morbidity was found to be 33% (out of 1011 criminal patients, 338 had schizophrenia. Steadman [6] studied a sample of 3332 inmates found that 8% of sample had severe psychiatric problems that clearly needed investigation, another 10% needed periodic services.

People with severe psychiatric illnesses are prone to aggressive outbursts and indulge in crime.

Particularly those with schizophrenia are at an increased risk, compared with general population, in committing violent crimes [7]. The prevalence of psychiatric morbidity in the inmates of prisons is increasingly being identified and this needs to be dealt with through appropriate measures.

The people who commit an offence differ from their counterparts on various personality measures suggesting that personality has an important role in the incidence of crime. Earlier studies by Eysenck theorized that psychoticism was always related to crime, extroversion was related in younger samples, and neuroticism in older samples. Eysenck postulated that neuroticism becomes more important in older samples and contributes to stronger antisocial habits in adults [8]. The individuals with criminal behavior are found to score high on psychoticism, extroversion and neuroticism compared to normal control group according to Rangaswami, et al. [9].

Prisoners have lot of problems like apart from leading isolated life away from stimulation and social life, they have limited access to basic amenities of day to day life like food, shelter, clothing, air and light etc. These factors contribute to anger, frustration, anxiety, depression and poor mental health. As per data in 2006 by national human rights commission, prisons of India have a total capacity of 2, 48,349 but prisoners are 3, 58,177 [10]. Nurse [11] and others in their study found that prisoners should have unlocked period of 8-9 hours on average in open air within prison. Sometimes in view of security reasons, they have to be kept in prison.

Anderson study [2] reported that 19-20 hours prisoners were kept locked in cells continuously. Living in such environment makes them susceptible to psychiatric disorders. Early phase of imprisonment they are all more vulnerable to adjustment disorders, more so in solitary confinement.

There is less information available regarding the prevalence, types of mental disorders and personality dimensions of prisoners in India. This study focuses on the personality dimensions, socio-demographic factors and psychiatric morbidity of the inmates of a prison.

### **Aim and objectives**

- To study the prevalence of psychiatric disorders among inmates of prison.
- To study personality dimensions of inmates of prison.
- To evaluate association between personality dimensions and psychiatric morbidity.
- To examine socio-demographic data and its association with psychiatric morbidity of study sample.

### **Materials and methods**

The study was done in a prison with across sectional study design. In the central prison, male and female blocks exist in the same campus but in separate buildings. We asked permission to carry out the study, but we were granted access by superintendent of jails to the male block only. Hence, only male inmates were included in the study. The prison has a population of around 330 inmates. (70% under trial prisoners, 30% convicted prisoners) the inmates considered for possible recruitment into study were

#### **Inclusion criteria**

- Above 18 years
- Both under trial and convicted prisoners.
- Not having speech and hearing impairments
- Who have given written informed consent were taken into study.

#### **Exclusion criteria**

- Those inmates who were medically ill.
- Not fit to be interviewed.
- Who did not give informed consent.
- Having acute mental illness were excluded from our study.

The sample size required for the study was calculated by using the formula  $n = Z^2 P(1-P)/d^2$  (Daniel).

Where n is the sample size, Z is the statistic corresponding to level of confidence, P is expected prevalence and d is precision.

For the level of confidence of 95%, Z value is 1.96. P and d were taken from studies (Fazel, Danish 2002, Single 1998) and were used as reference for expected prevalence of psychiatric disorders. Using the above, sample size more than 100 was considered adequate for the study.

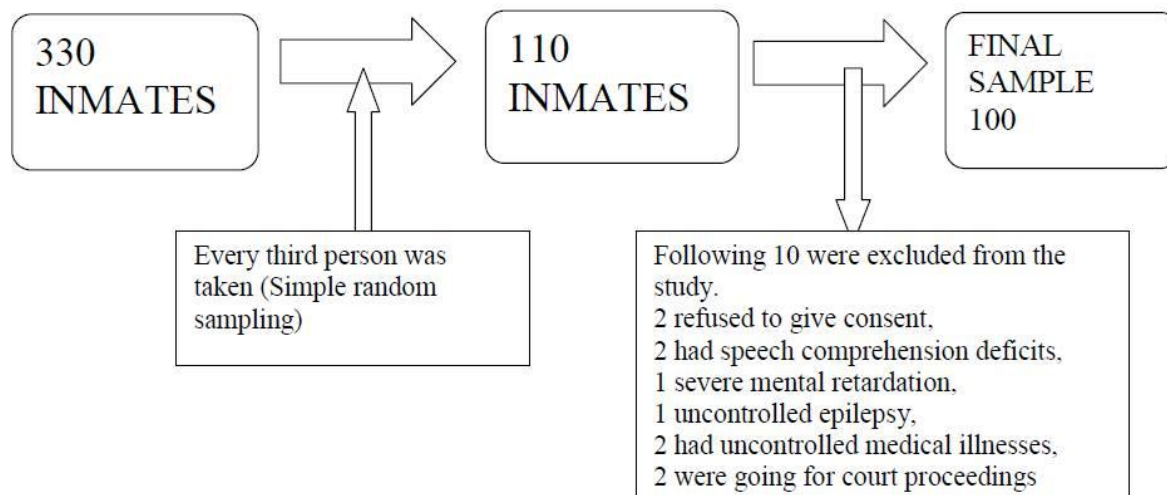
The total number of inmates was 330. Study participants were recruited by simple random sampling. The register in the prison was obtained and every third inmate was selected for assessment. On simple random sampling we got a sample of 110, out of which 2 refused to give consent, 2 had speech comprehension deficits, 1 severe mental retardation, 1 uncontrolled epilepsy, 2 had uncontrolled medical illnesses, 2 were going for court proceedings and were involved in cases where permission could not be obtained for interviewing in view of security issues. So total 10 were excluded and final sample came to 100 (**Flow chart - 1**).

Permission for conducting the study in the Central Prison was obtained from The Director General of Prisons and Correctional Services. Ethical clearance was obtained. The study was conducted in March 2017. Two postgraduates studying final year M.D. psychiatry were delegated the task of assessments. Permission for carrying out study was allotted between march 12<sup>th</sup> - 20<sup>th</sup> 2017, from 9 am to 5 pm. PGs were trained to administer scales, guided and

supervised by faculty comprising of one assistant professor and two professors who accompanied them to carry out the study, directly involved in assessment process, verified responses given by inmates simultaneously. The study subjects were interviewed personally in a separate room

allotted for assessment by prison authorities. Confidentiality was maintained and interviews were carried out adhering to standard safety precautions as per rules and regulations of prison.

**Flow chart – 1:** showing method of sample selection.



After obtaining a written informed consent, the subjects were interviewed individually, using a semi structured intake pro-forma. In our study, MINI V 5 [15] was used to screen psychiatric morbidity. EPQ-RS [1, 17] was used to assess personality traits of study sample.

**Tools used:** semi-structured intake pro-forma was used to enter socio-demographic data, crime related details of study subjects.

The Mini International Neuropsychiatric Interview [15] is a short structured clinical interview, which enables researchers to make diagnoses of psychiatric disorders according to DSM-IV or ICD-10<sup>(16)</sup>. The administration time of the interview is approximately 15 minutes.

**Eysenck Personality Questionnaire Revised-Short Form (EPQR-S) [16, 17]:** EPQR-Short (Eysenck, Eysenck & Barrett, 1985) is a self-reported questionnaire. It has 48 items, 12 for each of the traits of neuroticism, extroversion, and psychoticism, and 12 for the lie scale. Each question has a binary response, 'yes' or 'no'. Each dichotomous item is scored 1 or 0, and

each scale had a maximum possible score of 12 and minimum of zero.

**Statistical analysis:** Statistical analysis was done using SPSS 17. 'p' value was set at 0.05.

Results were expressed as percentages for qualitative variables (socio-demographic factors), mean scores with Standard deviation was used for quantitative variables (EPQ scores). Chi-square test was used for testing association between variables.

**Results**

In our study, there was no control group, so we compared socio-demographic variables between those with and without psychiatric morbidity (Table – 1). Association between repeated offenders and psychiatric morbidity was significant (p=0.009). ASPD traits not meeting criteria for personality disorders were 57. Psychiatric morbidity among prison inmates was found to be 72%.

**Table – 1:** Association between Socio-demographic data and Psychiatric morbidity.

Variable	Psychiatric morbidity (N, %)		Chi square value	P value
	With ( N=72)	Without (N=28)		
<b>Residence</b>			2.7609	0.2514 (NS*)
a)Urban	<b>54(75%)</b>	<b>17(60.71)</b>		
b)Semi-urban	1(1.4%)	1(3.57%)		
c)Rural	17(23.6%)	10(35.71%)		
<b>Education</b>			1.6358	0.8023 (NS*)
a)Illiterate	<b>22(30.6%)</b>	<b>8(28.57%)</b>		
b)Primary school	9(12.5%)	1(3.57%)		
c)Middle school	17(23.6%)	7(25%)		
d)High school	19(26.4%)	8(28.57%)		
e)Intermediate	5(6.9%)	2(7.14%)		
f)Graduation	2(2.77%)	2(7.14%)		
<b>Marital status</b>			2.5404	0.4680 (NS*)
a)Unmarried	<b>38(52.8%)</b>	<b>10(35.71%)</b>		
b)Married	27(37.5%)	16(57.14)		
c)Separated	6(8.3%)	1(3.57%)		
d)Divorced	0	0		
e)Widowed	1(1.4%)	1(3.57%)		
<b>Socio-economic status</b>			0.0548	0.972 (NS*)
a)Upper class	<b>0</b>	<b>0</b>		
b)Upper middle class	<b>0</b>	<b>0</b>		
c)Lower middle class	<b>15(18.8%)</b>	<b>4(14.28%)</b>		
d)Upper lower class	7(6.2%)	9(32.14%)		
e)Lower class	<b>50(69.44%)</b>	15(53.57%)		
<b>No. of crimes</b>			6.7914	0.00916 (Sig†)
a)Single	<b>28(38.9%)</b>	<b>19(67.85%)</b>		
b)Multiple	<b>44(61.2%)</b>	<b>9(32.15%)</b>		

\*-NS –NIL SIGNIFICANT

†- Sig- Significant

**Table – 2:** Mean EPQ scores of inmates of prison.

S.NO	EPQ	Total mean EPQ score
1	EPQ-E*	5.79
2	EPQ-N†	3.39
3	<b>EPQ-L‡</b>	<b>8.83</b>
4	EPQ-P§	4.54

\* - Extraversion, †- Neuroticism , ‡- Lie score, §- Psychoticism

The mean EPQ score was higher for lie domain.

Among those having Alcohol abuse, the EPQ scores were high for the lie domain with a mean of 9.49, (p value 0.017) which was statistically significant (**Table – 2**).

The mean EPQ score for psychoticism was 9019. There was a statistically significant association between inmates having psychiatric morbidity and EPQ-P (p value 0.008) (**Table – 3, 4**).



**Table - 3:** Psychiatric morbidity of prison inmates.

Sr. No.	PSYCHIATRIC MORBIDITY	PERCENTAGE %
1	Alcohol abuse current	41
2	Major depressive episode current	13
3	Mood disorder with psychotic features life time	9
4	Psychotic disorder life time	3
5	Opioid abuse current	3
6	Cannabis abuse current	3

**Table - 4:** Association of psychiatric morbidity and EPQ scores.

	Psychiatric morbidity	No. of subjects	Mean	t-test for Equality of Means Sig. (2-tailed)
EPQ-E*	Absent	28	6.14	0.470
	Present	72	5.65	
EPQ-N†	Absent	28	<b>4.75</b>	<b>0.001</b>
	Present	72	2.86	
EPQ-P ‡	Absent	28	7.89	<b>0.008</b>
	Present	72	<b>9.19</b>	
EPQ-L §	Absent		4.82	0.442
	Present		4.43	

\* - Extraversion, †- Neuroticism , ‡- Psychoticism , §- Lie score

The mean EPQ score for neuroticism was found to be 4.75. Similarly, the association between psychiatric morbidity and EPQ-N was statistically significant (p value-0.001)

Among those suffering from Major depressive episode, the EPQ score was high for neuroticism with a mean score of 4.85, (p value 0.035) which was statistically significant. Among those who had substance abuse disorders, 64(80%) were having psychiatric morbidity with chi square value of 12.44 and p value of 0.00 which was statistically significant. Among those who were having cannabis abuse, the mean EPQ score for extroversion was 10.33 with p value 0.009, which was statistically significant.

## Discussion

In this study, we aimed to study the psychiatric morbidity and personality dimensions among the inmates of a prison. All study subjects were males and majority of them were below 30 yrs. of age, an observation, which was similar to those,

found in previous studies [18, 19-22]. Most of the subjects belonged to lower socio-economic status and had lesser education suggesting that these factors play an important role in the delinquent attitude [18, 19-23]. The incidence of high crime rate among lower socio-economic population may be due to cultural norms or to the temporary benefits, they get by expressing aggressive behavior. The incidence of crime was comparatively less among those who were educated, among skilled workers and professionals implicating education as well as financial status in a pivotal role in the causation of crime [17]. There was a high percentage of psychiatric morbidity among those who were unmarried (52.8%), separated (8.3%) and widowed (1.4%) a finding similar to those in previous studies [18, 19], indicating that psychiatric illnesses starting at an early age could probably affect the personal life and the persons with psychiatric morbidities could have difficulty maintaining enduring relationship with their partners. The psychiatric morbidity was high

(64.1%) among repeat offenders, suggesting it as a probable cause for repeated indulgence in criminal activity [23-26]. 57% of the subjects were having anti-social personality disorder traits not meeting criteria for ASPD disorder and this suggests the importance of personality disorder in the causation of crime [24].

Psychiatric morbidity amongst inmates of prison as per our study was found to be 72%, study by SK Goyal, Singh P [18] found prevalence of 80%. They carried out study on only convict prisoners whereas our study included both UT, CT prisoners. Study by Steadman [6], Birmingham [27] also carried out study on remand prisoners and psychiatric morbidity was found to be 24-26%.

Our study found 41% had met criteria for alcohol abuse current, 3% each of cannabis and opium abuse current. 80% study subjects abused alcohol at some point of time and did not meet criteria for alcohol dependence. This is in line with SK Goyal [18] study which also found 39.8% had alcohol dependence, 11.2% dependent on various substances, 56.4% had history of drug use before incarceration. Our study is also in line with study by Birmingham [27] who found 57% using illicit drugs, 32% met criteria for dependence. Bushnell and Bakkar [28] found high prevalence of alcohol dependence of 81%. Kouris study [29] found high prevalence of 95% alcohol dependence among prisoners. Reason for this may be different socio-cultural factors of these two countries. This study was done on prisoners admitted in mental health facilities. Maden [30] found cannabis was most frequently abused (34%). In our study, most abused substance was alcohol.

Depression was second most prevalent psychiatric morbidity as per our study (13%), this is in line with Goyal SK [18] study (18%), Singh, Verma [3] (16%). Study from Nigeria on incarcerated prisoners found slightly higher prevalence of depression (23%) [31].

Psychotic disorder lifetime was 3% prevalence in our study, found higher prevalence when compared to SK Goyal [18] study where the prevalence was only 0.4%. This may be due to the fact that our study included both UT, CT prisoners whereas SK Goyal study [18] included only CT prisoners. Our study is also in line with Somasundaram [4], Jha [5] Indian studies, Herman [20], Aghahowe [31] found 2% prevalence of schizophrenia.

Majority of the subjects had substance use (80%). These are in agreement with the previous studies [19, 20]. Substances use is known to cause disinhibition and facilitate aggression. The persons with substance use tend to be sensation seeking and impulsive which can drive the person to look for newer stimuli and pleasurable experiences. The EPQ lie score was significantly high among the subjects who were having alcohol abuse indicating that these subjects tend to give socially desirable answers. The EPQ score for neuroticism was significantly high among subjects with major depressive episode. This was similar to the results found in other studies [9]. The EPQ for psychoticism was significantly high among those having psychotic disorder. This was similar to the results found in other studies [9].

**Drawbacks:** Ours being a cross sectional study, results to be interpreted in view of following limitations. Only one-time assessments were possible. By the time they committed crime and got arrested, all inmates (72) were suffering from mental illness. None of them was on treatment. At the time of committing crime, whether they were having illness or not could not be decided. Alcohol abuse subjects were never treated but had problems for many years before committing crime. Mood disorder subjects were treated long back before committing crime for past episodes but currently not on any treatment. Psychotic disorder subjects were asymptomatic, not treated before. Depressive subjects developed depression after committing crime and imprisonment.

#### Other limitations

Ours was a cross-sectional study (with associated limitations). There was no control group. Only male inmates were assessed in our study.

All study subjects were informed about need, availability and provision of medication at our institute of mental health. Prison authorities also were given sensitization about relationship between psychiatric morbidity and crime.

### Strengths of our study

Most of the earlier studies in forensic population were on subjects who were referred to mental health professionals for different reasons; thus, limiting the assessment of exact prevalence of psychiatric morbidity in this special group. In contrast to this, we assessed psychopathology and personality dimensions in the prison itself; thus, giving a more reliable estimate and reducing the bias.

### Conclusion

The results of our study point towards the need for timely identification, quantification and management of psychiatric morbidity among prisoners. This might help reduce the recurrence of crime among those suffering from them. In addition, measures to motivate prisoners to become drug free can reduce the indulgence in criminal activities. There is a need to providing rehabilitation services for these subjects with measures to tackle unemployment and economic disadvantage as these in turn can reduce crime. The results also indicate a significant burden of psychiatric morbidity among inmates of prison and their association with personality traits. There was a statistically significant association between personality traits and psychiatric morbidity.

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