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Research Article

PREVALENCE AND RISK FACTORS RELATED TO CRIMINALITY AMONG PSYCHIATRIC PATIENT IN STATE MENTAL HOSPITAL OF HIMACHAL PRADESH, INDIA: A CROSS- SECTIONAL STUDY

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A B S T R A C T

Background: More than 20 epidemiological studies have reported the association between major mental disorder and violence. It has always been perceived that criminal offenders are crazy and mentally ill while on the other hand there is another view that psychiatric patients are dangerous and more likely to commit criminal offences.
Objective: This study was planned to determine the prevalence and risk factors of criminality among Psychiatric patients.
Methodology: This study was a record based cross sectional study. Data of all the patients who were discharged from the institute during January 2014 to December 2018 suffering from various mental disorders was analyzed from hospital record. The diagnosis of patients was taken from their case files which were made according to ICD-10 classification.
Results and Conclusions: Criminality was found in approximately 15% of the psychiatric patients. Male gender (p value 0.009) and co-morbid substance abuse (p value 0.045) were found to be independent predicters of criminality after adjusting for other variables.

INTRODUCTION

More than 20 epidemiological studies have reported the association between major mental disorder and violence.[1]It has always been perceived that criminal offenders are crazy and mentally ill while on the other hand there is another view that psychiatric patients are dangerous and more likely to commit criminal offences.[2] These reports typically find that schizophrenia is related to a 4 to 6- fold increased risk of violent behavior, which has led to the view that schizophrenia and other major mental disorders are preventable causes of violence and violent crime.[3] Conceptual models of violence in schizophrenia postulate that patients with schizophrenia are violent as a consequence of the psychopathologic symptoms of the disorder itself (e.g., delusions, hallucinations) or secondary to co-morbid substance use (an established risk factor for violence). An alternative model is that schizophrenia and violent behavior co-occur because of familial factors (genetic or early environmental) that are related to both (e.g., personality traits such as irritability, poor anger management, or inadequate coping with stress).[4,5] Patients with bipolar disorder (8.4%) committed violent crime compared with general population controls (3.5%) (Adjusted odds ratio, 2.3; 95% confidence interval, 2.0-2.6). The risk was mostly confined to patients with substance abuse co-morbidity (adjusted odds ratio, 6.4; 95% confidence interval, 5.1-8.1). There were no differences in rates of violent crime by clinical subgroups (manic vs. depressive or psychotic vs. non-psychotic).[6]

A debate is still going on around the value and disadvantage of prolonged institutionalization versus community rehabilitation. Assuming that there is a causal relationship between severe mental illness and violent crime, one way of interpreting this attributable risk fraction is that violent crime would have been reduced by 5.2%, if, hypothetically, all those with severe mental illness had been institutionalized indefinitely.[7]There are also a number of factors that predict crime and violence in the mentally ill. Violence prior to admission to a hospital is associated with violence after discharge, as is male gender, age, increased length of stay and cognitive impairment. [8]

Himachal Pradesh the northern state of India is a hilly state. State has only one mental hospital that is Himachal Hospital of Mental Health and Rehabilitation situated at Shimla. Most of psychiatric patients which are involved criminal in activities are admitted here. This study was planned in this institute to determine the prevalence and risk factors of criminality among Psychiatric patients.

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Table 1 Description of socio-demographic and clinical variables among study participants

Variable	Frequency	Percentage (%)	95% CI
1. Gender			
Male	302	74.94	70.46-78.93
Female	101	25.06	21.06-29.54
2. Age Group			
<40	290	71.96	67.36-76.14
>40	113	28.04	23.86-32.64
3. Locality			
Known	324	80.40	76.22-84.0.
Unknown	79	19.60	16.00-23.78
4. Type of Locality			
Urban	27	8.33	5.77-11.89
Rural	297	91.67	88.10-94.23
5. Citizenship			
Others	10	2.48	1.34-4.56
India	393	97.52	94.44-98.66
6. Shifted from another institute			
No	17	4.22	2.63-6.69
Yes	386	95.78	93.31-97.36
7. Family/Destitute			
Destitute	52	12.90	9.96-16.56
Family	351	87.10	83.44-90.04
8. Psychiatric Diagnosis			
Schizophrenia &acute transient psychotic disorders	200	49.63	44.75-54.51
Unspecified Non organic psychosis	101	25.06	21.06-29.54
Bipolar affective disorder &Mania	60	14.89	11.73-18.72
Mental retardation & other diagnosis	9	2.23	1.16-4.24
Schizoaffective	24	5.96	4.02-8.74
Others	9	2.23	1.16-4.24
9. Co-morbid Substance use			
No	220	54.59	49.71-59.39
Yes	183	45.41	40.61-50.29
10. Co-Morbid Substance Type			
Tobacco alone	52	28.42	22.31-35.42
Cannabis and Tobacco	102	55.74	48.42-62.81
Alcohol Tobacco and Cannabis	16	8.74	5.41-13.83
Others	13	7.10	4.15-11.89
11. Admission Type			
Reception Order	184	45.66	40.84-50.56
Voluntary	195	48.39	43.52-53.28
Transfer	24	5.96	4.02-8.74
12. Reception Type			
Poor Social Support	94	51.09	43.84-58.28
From Jail	27	14.67	10.23-20.60
Unknown/Wanderer/Others	63	34.24	27.70-41.43
13. Criminality Present			
No	345	85.61	81.82-88.72
Yes	58	14.39	11.28-18.18
14. Criminality Type			
Homicidal	22	37.93	26.22-51.23
Physical Assault	23	39.66	27.74-52.94
Other	13	22.41	13.33-35.18
15. Patient Handed Over at Discharge			
Family	303	75.19	70.72-79.17
Government Shelter home	38	9.43	6.93-12.70
Absconded	26	6.45	4.42-9.32
others	8	1.99	0.99-3.93
Jail	26	6.45	4.42-9.32
Died	2	0.50	0.12-1.97

MATERIAL AND METHODS

This study was a record based cross sectional study done in Himachal Hospital of Mental Health and rehabilitation which is a tertiary care Institute situated in Shimla, capital of a Northern Hilly state of India. Data of all the patients who were discharged from the institute during January 2014 through December 2018 suffering from various mental disorders was analyzed from hospital record. The diagnosis of patients was taken from their case files which were made according to ICD-10.[9]

A patient was considered only once for the study data collection. Readmission patients during the study period were excluded from the study. Available data on psychiatric diagnoses, duration of admission and type of crime was collected from hospital case files and their legal files present in record section of hospital. Criminality was defined as homicide (Murder), physical assault, stealing (Robbery), any sexual offense (rape, sexual coercion, child molestation, indecent exposure, or sexual harassment), illegal threats (aggressive behavior), religious disbelief, drug dealers, political crimes and set fire.

Table 2 Association of sociodemographic and clinical variables with criminality among psychiatric patients

Variable	Criminality		p- Value
	Not Present Frequency (%)	Present Frequency (%)	
1. Age			
<40	240(82.76%)	50(17.24%)	**0.009**
>40	105(92.92%)	8(7.08%)	
2. Gender			
Male	246(81.46)	56(18.54%)	**<0.001**
Female	99(98.02%)	2(1.98%)	
3. Locality Type			
Urban	21(77.78%)	6(22.22%)	0.596
Rural	246(82.83%)	51(17.17%)	
4. Psychiatric Diagnosis			
Schizophrenia & Acute Transient Psychotic disorder	168(84.00%)	32(16%)	
Unspecified Nonorganic psychosis	89(88.12%)	12(11.88%)	
BPAD & Mania	53(88.33%)	7(11.67%)	
Mental Retardation with other psychiatric diagnosis	7(77.78%)	2(22.22%)	0.820
Schizoaffective	20(83.33%)	4(16.67%)	
Other	8(88.89%)	1(11.11%)	
5. Substance abuse			
No	202(91.82%)	18(8.18%)	**<0.001**
Yes	143(78.14%)	40(21.86%)	
6. Substance Type			
Tobacco alone	37(71.15%)	15(28.85%)	
Cannabis and tobacco	81(79.41%)	21(20.59%)	
Alcohol Cannabis and Tobacco	12(75.0%)	4(25%)	0.120
Others	13(100%)	0 (0%)	

Table 3 Multivariate analysis of risk factors for criminality among study participants.

Variable	Odds Ratio (95% CI)	P value
1. Age>40	0.53 (0.24-1.21)	0.134
2. Female Sex	.13 (0.029-0.60)	**0.009**
3. Substance Abuse Present	1.97 (1.01-3.81)	**0.045**
4. Psychiatric Diagnosis		
Schizophrenia & acute transient psychotic disorder	Reference	
Unspecified non organic psychosis		
BPAD & Mania	0.95 (0.45-2.00)	0.896
Mental retardation with other	0.70 (0.28-1.73)	0.440
psychiatric diagnosis	3.85 (0.62-24.03)	0.149
Schizoaffective	0.88 (0.28-2.81)	0.832
Other	0.93 (0.11-8.26)	0.949

Data was entered in Microsoft excel spreadsheet, cleaned for errors and was analyzed using Stata IC Software version 15. Descriptive statistics were used to summarize the demographic data. Frequencies, percentages and their 95% confidence intervals were used to describe categorical variables. Pearson Chi-square and Fischer Exact test was used for univariate association analysis. We had done multivariate logistic regression for adjustment of confounders. Odds Ratios with their 95% confidence interval was calculated to predict risk factors for criminality. A two-sided p value of < 0.05 was considered as statistically significant.

RESULTS

In this study we found that out of 403 total patients 302(74.94%) were male, 101(25.06%) were female whereas 290 (71.96%) were from age group less 40 years old. Most of the patients were from known locality (324 i.e.80.40%). 351(87.10%) had families however 52(12.90%) patients were destitute. Majority of patients i.e. 195(48.39%) were admitted voluntary, 184(45.66%) were admitted through reception orders and 24(5.96%) were transfer from other Government aided institutes. Most patients had diagnosis of schizophrenia and acute transient psychosis (49.63%).

Among 183(45.41%) patients co-morbid substance use has been found and cannabis and tobacco in combination has been found most common substance used (102, 55.74%). Criminality was present in 14.39% of patients.

Univariate Analysis

Among patients age less than 40 years 17.24% patients had criminality however >40years 7.08% had criminality which is significantly high with p value 0.009. Criminality was found to be more in male patients as compared to females (p value <0.001). Criminality was high among patients diagnosed with Mental Retardation with other diagnosis in 22.22% patients followed by Schizoaffective 16.67%, Schizophrenia 16%, unspecified nonorganic psychosis, BPAD and mania and other diagnosis 11.88%, 11.67% and 11.11% patients respectively but this difference was found to be non-significant. In 21.86% patients using co-morbid substance criminality were present which is significantly high from patients not using co-morbid substance i.e. 8.18%.

Multivariate Analysis: We have included age, gender, substance abuse and psychiatric diagnosis in multivariate logistic regression model. Male gender and co-morbid substance abuse were found to be independent predicters of criminality after adjusting for other variables. Other variables were found to be non-significant

DISCUSSION

Among 403 patients included in the study, male patients were 74.94% and 25.06% were female patients. A study by Swanson J.Included 25.67 % females and 74.33 % male.[4] We found most of our patients were from age group <40 years. However, in study by Swanson J. there were slightly high number of patients in age group >42 years of age. [4] In our study there was 49.63% patients has diagnosis Schizophrenia

and Acute transient Psychotic disorder, followed by Unspecified nonorganic psychosis in 25.06%, BPAD and mania in 14.89%, Mental Retardation in 2.23% Schizoaffective in 5.96 % patients. A study by Nagy *et al*. [10] has found schizophrenia in 80.6%, Depression in 1.7%, BPAD in 7.3%, Acute Psychotic episode 2.0%, MR in 8.1 % personality disorders in 6.3%. This is almost similar to findings of our study the difference may be due to categorization of different diagnosis groups.

In our study male gender found to be independent predictor of criminality after adjusting for other variables. According to a study by Fazel.S (2010) the rate of violent crime was higher among men; of individuals with bipolar disorder, 226 of 1635 men (13.8%) and 88 of 2108 women (4.2%) had been convicted of a violent offense. However, compared with rates of violent crime among general population controls of the same sex, women with bipolar disorder had a higher risk of violent crime (aOR, 4.1; 95% CI, 3.0-5.5) than men with bipolar disorder (1.9;1.6-2.3).[6] Sex differences in violence have also been reported for severe mental illness.[8,11-19]

We found that co-morbid substance use was found to be independent predictor of criminality after adjusting for other variables. According to study by Fazel.S (2010), risk was mostly confined to patients with substance abuse co-morbidity (adjusted odds ratio, 6.4; 95% confidence interval, 5.1-8.1).The risk increase was minimal in patients without substance abuse co-morbidity (adjusted odds ratio, 1.3; 95% confidence interval, 1.0-1.5), which was further attenuated when unaffected full siblings of individuals with bipolar disorder were used as controls (1.1; 0.7-1.6).[6] Substance use leads to criminal behavior as it diminishes social judgement which leads to criminality.

Limitation of Study

1. This study is record based study so validity of data can't be ascertained.
2. There was no follow up of patients after their discharge from the institute.

CONCLUSION

Criminality was found in approximately 15% of the admitted psychiatric patients. Male gender and co-morbid substance abuse were found to be independent predicters of criminality after adjusting for other variables.

Conflict of Interest: - None
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