Psychiatric illnesses among Dalit Nepalese population

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Abstract

Background

Nepalese population includes a wide variety of ethnic groups namely, the Brahmin, Chettri, Dalit, Gurung, Newar, Puns, Magar Dalits population in Nepal are a traditionally victimised, underprivileged community who have been obliged to lag at the base of the public constitution in Nepal. Dalits Nepalese has poor income, education and other human development indicators. They are often landless and

much poorer than the dominant caste population like the Brahmins, chetris, newars. The main objective of the study was to find out the commonest psychiatric disorder found in the poor Dalit Nepalese population in western development region of Nepal for which hospitalization is required.

Method

The study was a cross sectional study carried out between 1st October- 31st March 2010 at Psychiatric ward in Manipal Teaching hospital. The diagnosis of the disease was based on ICD-10 (Tenth revision) Classification of mental and behavioral disorders, Diagnostic Criteria for Research..

Results

Among all the psychiatric diseases Schizophrenia, Schizotypal and Delusion Disorders 30.6% was the commonest disease seen in the Dalit Population followed by Mental and behavioral disorder due to Psychoactive Substance abuse 20.8%. Psychiatric diseases were more common in male patients 52.8%. 87.5% of the cases were <40 yrs of age, 72.2% of the patients were Hindus by religion followed by Christian 27.8%. 87.5% of the patients were unemployed and 84.7% of the patients were having monthly income <10000/month. 45.8% of the patients were students followed by housewife 34.7%. Mental and behavioural disorder due to Psychoactive Substance abuse F10-19 was found more prevalent in males [OR 8.320,95%(CI(1.717, 40.311)] as compared to female patients among the Dalit patients

Conclusion

Among the low socio-economic class Dalits Schizophrenia was the commonest psychiatric disorder followed by Mental and behavioral disorder due to Psychoactive Substance abuse. Psychiatric illnesses are mediated by poverty, unemployment and dearth of family income which leads to psychiatric illness among dalit Nepalese population. Interventions should target these factors to minimise the load of various psychiatric illness among poor Dalit Nepalese population.

Keywords: Dalit, Nepalese, Nepal

Background

Nepalese population includes a wide variety of ethnic groups namely, the Brahmin, Chettri, Dalit, Gurung, Newar, Puns, Magar [1-3]. Dalits population in Nepal are a traditionally victimised, underprivileged community who have been obliged to lag at the base of the public constitution in Nepal. Dalits Nepalese has poor income, education and other human development indicators. They are often landless and much poorer than the dominant caste population like the Brahmins, chetris, newars. Almost half of Nepal's Dalits exist beneath the poverty line[4]. Dalit women, comprises of about one-fifth of the total population of Nepali women and more than half of the total Dalit population[5]. Dalit women are often forced to prostitution and often the victims of trafficking, labour and sexual slavery. This leads to various

mental illnesses among the poor dalit Nepalese population. The main objective of the study was to find out the commonest psychiatric disorder found in the poor Dalit Nepalese population in western development region of Nepal for which hospitalization is required.

Material and Methods

Study design and the participants:

The study was a cross sectional study carried out between 1st October- 31st March 2010. at Psychiatric ward in Manipal Teaching hospital. Out of two tertiary care centres of Western Development region of Nepal, MTH was chosen for the study because it is the largest tertiary care centre of western Development region of Nepal. It is a 750 bedded private hospital which is providing the health care facilities to Western development region from 1998 onwards[6] consists of three zones namely Dhaulagiri, Gandaki and Lumbini, sixteen districts, 865 Village development committee, 12 municipalities, 21 district hospitals, 42 primary health centres, 145 health posts and 691 sub-health posts and comprises of a total population of 4,571,013. 50 beds are allotted for psychiatric inpatients[7]. Pokhara is its regional headquarter [8]. It was expected that all the critically ill cases of psychiatric disorders will be referred to MTH from Western Development Region of Nepal.

Data collection:

Data was collected from 1st October 2009 and 30th September 2010. The outpatients were excluded as the research aims to study about the psychiatric illnesses among dalit Nepalese population who were critically ill.

Inclusion criteria:

A total number of 72 Dalit cases of critical nature with all types of Psychiatric disorders were included in the study. The diagnosis of the disease was based on ICD-10 (Tenth revision) Classification of mental and behavioral disorders, Diagnostic Criteria for Research (WHO. 1992) [9].

Exclusion criteria:

The outpatients were excluded as the research aims to study about the psychiatric illnesses among dalit Nepalese population who were critically ill.

Sample size calculation:

Sample size calculation showed for 95% confidence interval and, significance level α=5%,P=90%,Q= 10%, allowable error=10%, required sample size was 35. P=percentage of Schizophrenia in dalit population. In the pilot study done prior to the original study with 10 dalit patients was admitted in the psychiatry ward with Schizophrenia[10].

Outcome Variable:

The main outcome variable was the commonest psychiatric disorder seen among the Dalits in the psychiatric inpatients.

Explanatory variable:

The Socio demographic and psychiatric disorders have been defined at individual level. Factors which were taken into consideration at individual level were Age (<40 years and >40 years), gender (male and female), monthly income (<10000/month and >10000/month), employment of the patient (employed and unemployed), occupation (housewife, laborer, student, farmer, retired and others), religion (Hindu, Christian).

Ethical committee approval:

Ethical committee approval was taken from the institutional ethical committee, Manipal Teaching hospital, Pokhara, Nepal. The Research was conducted in accordance to latest version of the Declaration of Helsinki.

Data management and statistical analysis:

The data collected was analyzed using Excel 2003, R 2.8.0 Statistical Package for the Social Sciences (SPSS) for Windows Version 16.0 (SPSS Inc; Chicago, IL, USA) and EPI Info 3.5.1 Windows Version. Chi square test was used to observe the difference between different variables and strength of the relationship with logistic regression. $p < 0.05$ was considered as statistically significant. We calculated odds ratios and adjusted odds ratio) and their 95% confidence intervals (95% CI). $p < 0.05$ was considered as statistically significant[11].

Result:

Among all the psychiatric diseases Schizophrenia, Schizotypal and Delusion Disorders 30.6% was the commonest disease seen in the Dalit Population followed by Mental and behavioral disorder due to Psychoactive Substance abuse 20.8%, Mood (Affective) Disorders 18.1%, Neurotic, stress-related and somatoform disorders 12.5%, Behavioral syndromes associated with physiological disturbances and physical factors 11.1% and Organic including symptomatic mental disorder 6.9%. Psychiatric diseases were more common in male patients 52.8%. 87.5% of the cases were <40 yrs of age, 72.2% of the patients were Hindus by religion followed by Christian 27.8%. 87.5% of the patients were unemployed and 84.7% of the patients were having monthly income <10000/month. 45.8% of the patients were students followed by housewife 34.7%, farmer and retired 6.9%, labour 4.2% and shopkeeper 1.4% respectively (Table 1). Chi square test of Socio demographic details and various Psychiatric illnesses among Dalit Nepalese population is shown in Table 2.

Determinants of socio demographic factors and various psychiatric disorders among dalits by logistic regression

Logistic regression analysis finding shows that the psychiatric disorders like Mental and behavioural disorder due to Psychoactive Substance abuse F10-19 was found more prevalent in males [OR 8.320,95%(CI (1.717, 40.311)] as compared to female Dalit patients. In Schizophrenia, Schizotypal and Delusion Disorders F20-29 was found more prevalent in males [OR 1.896, 95%(CI 0.676, 5.314)] as compared to females, [OR 1.628 95%(CI 0.31, 8.55)]in age group <40 yrs as compared to > 40 yrs and [OR 1.457, 95% CI (0.454, 4.677)] in Hindus as compared to Christian. In Neurotic, stress-related and somatoform disorders F40-48 [OR 1.509, 95% CI (0.17, 13.432) was more common in patients with monthly income less than 1000/month as compared to more than 1000/month (Table 3).

Discussion:

Common Psychiatric illnesses:

Among all the psychiatric diseases Schizophrenia, Schizotypal and Delusion Disorders was the commonest disease seen in the Dalit Population followed by Mental and behavioral disorder due to Psychoactive Substance. Study conducted by Kohrt et al reported that psychiatric disorders are commonly found in Dalit in Nepal[12]. Study done by Banerjee et al in 2012 [13] also reported that schizophrenia is commonly found among Dalit patients. Similar findings were reported Khattri et al in 2013 [14] in the research conducted in the Rural Community of Nepal as well. It is because Nepal is an under developed country having poor financial status which could lead to psychiatric illness. Nepal is a mountainous country and her main source of income is agriculture. Many Dalit Nepalese people are financially poor and therefore can't afford to have health care facility timely and in course of time it may result in various psychiatric disorders. A research conducted in Nepal by Kohrt et al in 2013 also concluded that the caste-based disparity, poverty, lack of social support and stressful life events have adversely affected the mental health of Nepalese people[12].

Gender and Age:

Psychiatric diseases were more common in male patients. Most of the cases were <40 yrs of age. Similar findings were found by Banerjee et al, 2011 in Nepal. Similar findings were found by Maki et al in 2005 [15], which has shown that the psychiatric disorder is common in younger populations.

Religion:

Most of the patients were Hindus by religion followed by Christian It is quite evident from the finding that Nepal is a Hindu country and it is expected that most of the patients were Hindus.

Monthly income and employment:

87.5% of the patients were unemployed and were having monthly income <10000/month which has lead to psychiatric illness.

Table 1: Socio demographic details and various psychiatric illness among Dalit Nepalese patients

Socio demographic Factors		n=72(%)	P Value	95% CI
Gender	Female	34(47.2)	0.50286 ×	(35.3, 59.3)
	Male	38(52.8)		(40.7, 64.7)
Age	>40 yrs	9(12.5)	0.00001†	(5.9, 22.4)
	< 40 yrs	63(87.5)		(77.6, 94.1)
Religion	Christian	20(27.8)	0.00001†	(17.9, 39.6)
	Hindu	52(72.2)		(60.4, 82.1)
Employment	Employed	9(12.5)	0.00001†	(5.9,22.4)
	Unemployed	63(87.5)		(77.6, 94.1)
Monthly income	<10000/month	61(84.7)	0.00001†	(74.3, 92.1)
	>10000/month	11(15.3)		(7.9, 25.7)
Occupation	Shopkeeper	1(1.4)	-	(0.0, 7.5)
	Farmer	5(6.9)		(2.3, 15.5)
	Labour	3(4.2)		(0.9,11.7)
	Retired	5(6.9)		(2.3, 15.5)
	student	33(45.8)		(23.9, 46.9)
	Housewife	25(34.7)		(34.0, 58.0)
Psychiatric Illnesses	Neurotic, stress-related and somatoform disorders F40-48	9(12.5)	-	(5.9, 22.4)
	Mood (Affective) Disorders F 30-39	13(18.1)		(10.0, 28.9)
	Schizophrenia, Schizotypal and Delusion Disorders F20-29	22(30.6)		(20.2, 42.5)
	Mental and behavioral disorder due to Psychoactive Substance abuse F10-19	15(20.8)		(12.2, 32.0)
	Organic including symptomatic mental disorder F00-F09	5(6.9)		(2.3, 15.5)
	Behavioral syndromes associated with physiological disturbances and physical factors F50–F59	8(11.1)		(4.9, 20.7)

† p<0.05, statistically significant.
 × p>0.05, statistically not significant.
- P Value cannot calculate

Table : 2: Socio demographic details and various Psychiatric illnesses among Dalit Nepalese population

Socio demographic Factors		Neurotic, stress-related and somatoform disorders F40-48	Mood (Affective) Disorders F 30-39	Schizophrenia, Schizotypal and Delusion Disorders F20-29	Mental and behavioral disorder due to Psychoactive Substance abuse F10-19	Organic including symptomatic mental disorder F00-F09	Behavioral syndromes associated with physiological disturbances and physical factors F50–F59	χ^2	P Value
Gender	Female	6(17.6)	10(29.4)	8(23.5)	2(5.9)	3(8.8)	5(14.7)	14.99	0.01†
	Male	3(7.9)	3(7.9)	14(36.8)	13(34.2)	2(5.3)	3(7.9)		
Age	>40 yrs	0(0)	2(22.2)	2(22.2)	2(22.2)	2(22.2)	1(11.1)	5.08	0.4×
	< 40 yrs	9(14.3)	11(17.5)	20(31.7)	13(20.6)	3(4.8)	7(11.1)		
Religion	Christian	3(15)	3(15)	5(25)	4(20)	2(10)	3(15)	1.32	0.933×
	Hindu	6(11.5)	10(19.2)	17(32.7)	11(21.2)	3(5.8)	5(9.6)		
Employment	Employed	3(33.3)	0(0)	4(44.4)	0(0)	2(22.2)	0(0)	12.82	0.025†
	Unemployed	6(9.5)	13(20.6)	18(28.6)	15(23.8)	3(4.8)	8(12.7)		
Monthly income	<10000/month	8(13.1)	6(9.8)	22(36.1)	13(21.3)	4(6.6)	8(13.1)	20.6	0.001†
	>10000/month	1(9.1)	7(63.6)	0(0)	2(18.2)	1(9.1)	0(0)		
Occupation	Shop keeper	1(100)	0(0)	0(0)	0(0)	0(0)	0(0)	50.1	0.01†
	Farmer	1(20)	0(0)	3(60)	0(0)	1(20)	0(0)		
	Labour	1(33.3)	0(0)	1(33.3)	0(0)	1(33.3)	0(0)		
	Retired	0(0)	1(20)	1(20)	1(20)	2(40)	0(0)		
	student	0(0)	5(15.2)	12(36.4)	13(39.4)	0(0)	3(9.1)		
	Housewife	6(24)	7(28)	5(20)	1(4)	1(4)	5(20)		

† p<0.05, statistically significant.

× p>0.05, statistically not significant.

Table 3: Logistic regression analysis and various Psychiatric illnesses among Dalit Nepalese population

Socio demographic Factors		Neurotic, stress-related and somatoform disorders F40-48	Mood (Affective) Disorders F 30-39	Schizophrenia, Schizotypal and Delusion Disorders F20-29	Mental and behavioral disorder due to Psychoactive Substance abuse F10-19	Organic including symptomatic mental disorder F00-F09	Behavioral syndromes associated with physiological disturbances and physical factors F50–F59
		Odds ratio (Confidence Interval)					
Gender	Female	1	1	1	1	1	1
	Male	0.4(0.092, 1.744) ×	0.206(0.051, 0.827)†	1.896(0.676, 5.314) ×	8.320(1.717, 40.311)†	0.574(0.09, 3.66)×	0.497(.109, 2.259) ×
Age	>40 yrs	1	1	1	1	1	1
	< 40 yrs	-	0.74(0.135, 4.056)×	1.628(0.31, 8.55)×	0.91(0.169, 4.911) ×	0.175(0.025, 1.234)×	1(0.108, 9.229) ×
Religion	Christian	1	1	1	1	1	1
	Hindu	0.739(0.166, 3.291)×	1.349(0.33, 5.514) ×	1.457(0.454, 4.677)×	1.073(0.298, 3.867) ×	0.551(0.085, 3.571) ×	0.603(0.13, 2.798) ×
Employment	Employed	1	1	1	1	1	1
	Unemployed	0.211(0.042, 1.065)×	-	0.50(0.12, 2.077)×	-	0.175(0.025, 1.234) ×	-
Monthly income	>10000/ month	1	1	1	1	1	1
	<10000/ month	1.509(0.17, 13.432)×	0.062(0.014, 0.277)†	-	1.219(0.234, 6.3470×	0.702(0.071, 6.944) ×	-

† p<0.05, statistically significant.

× p>0.05, statistically not significant.   - P Value cannot calculate

Pradhanang[16] has shown that unemployment is a serious problem in Nepal. Similar findings were found in a study undertaken among the Poor in United States, England, Japan, Norway, Ireland and Iceland. Unlike this finding, the research conducted in the context of India and Italy showed that the psychiatric disorders are more frequently witnessed among the rich [17].

Occupation:

Most of the patients were housewife followed by farmer and retired, labour and shopkeeper. Similar finding was reported by Fahmida et al in 2009 and Banerjee et al in 2011 which has revealed that the occupation related Psychiatric disorders were rather common among housewives and students in Bangladesh and Nepal[18-21].

Conclusion

Among the low socio-economic class Dalits, Schizophrenia was the commonest psychiatric disorder followed by Mental and behavioral disorder due to Psychoactive Substance abuse. Psychiatric illnesses are mediated by poverty, unemployment and dearth of family income which leads to psychiatric illness among dalit Nepalese population.
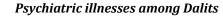
Limitation of the study

This research is based on the hospital study from Western Development Region of Nepal. A multi centric hospital based study with higher sample size will be useful to find the burden of psychiatric illness among poor dalit population all over Nepal.

Future scope of the study:

This study is based on the research carried out in the tertiary hospital located in Western Development Region in Nepal. A multi centric hospital based research with high sample size would be beneficial to assess the psychiatric disorders among Dalit Nepalese population in Nepal.

Author's Contribution:

References:

1. Shankar PR, Partha P, Shenoy N: Self-medication and non-doctor prescription practices in Pokhara valley. Western Nepal: a questionnaire based study. BMC Fam Pract. 2002; Sep 17, 3:17. http://dx.doi.org/10.1186/1471-2296-3-17 PMid:12236905 PMCid:PMC130019

2. Banerjee I, Banerjee I, Roy B, Sathian B, Khadkha S, Chakraborty PK, Saha A, Pugazhandhi B. Impact of ethnicity, unemployment and economy on mental disorders : A study from Western Nepal. Nepal Journal of Epidemiology 2014, 4(1):306–15. http://dx.doi.org/10.3126/nje.v4i1.10132

3. Banerjee I, Roy B, Sathian B, Banerjee I, Kumar SS, Saha A: Medications for Anxiety: A Drug utilization study in Psychiatry Inpatients from a Tertiary Care Centre of Western Nepal. Nepal Journal of Epidemiology 2010, 1(4):119–25. http://dx.doi.org/10.3126/nje.v1i4.5753

4. International Dalit Solidarity Network Nepal: Nepal. [online] 2014 [cited 2014 Jan15]. Available from: URL: http://idsn.org/country-information/nepal/

5. Nepal National Dalit social Welfare organization. [online] 2014 [cited 2014 Jan 15]. Available from: URL: http://www.nndswo.org.np/index.php?page=workingareas

6. Shankar PR, Partha P, Dubey AK, Mishra P, Deshpande VY. Intensive care unit drug utilization in a teaching hospital in Nepal. Kathmandu Univ Med J (KUMJ). 2005 Apr-Jun;3(2):130-7.

7. Banerjee I, Sathian B, Chakraborty PK, Banerjee l, Roy B, Jauhari AC, Saha A. Pharmacotherapy of Bipolar Affective Disorder: A Hospital Based Study from Sub Himalayan Valley of Nepal. J Clin Diagn Res. 2014, Jun. 8(6): HC22-HC27.
DOI: 10.7860/JCDR/2014/8661.4524

8. United Nations Nepal Information Platform: An Overview of the Western Development Region of Nepal. Nepal_Western_Region_Overview_Paper.pdf. [online] 2011 [cited 2014 Jan 15]. Available from: URL: http://un.org.np/reports/overview-western-development-region-nepal

9. World Health Organization: The ICD-10 Classification of mental and Behavioural disorders (Tenth Revision). Geneva: Diagnostic criteria for research; 1992.

10. Sathian B, Sreedharan J, Baboo NS, Sharan K, Abhilash ES, Rajesh E. Relevance of Sample Size Determination in Medical Research. Nepal Journal of Epidemiology 2010; 1(1):4–10.
http://dx.doi.org/10.3126/nje.v1i1.4100

11. Sathian B: Reporting dichotomous data using Logistic Regression in Medical Research: The scenario in developing countries. Nepal Journal of Epidemiology 2011; 1(4):111–113.
http://dx.doi.org/10.3126/nje.v1i4.5752

12. Kohrt BA, Speckman RA, Kunz RD, Baldwin JL, Upadhaya N, Acharya NR, Sharma VD, Nepal MK, Worthman CM. Culture in psychiatric epidemiology: using ethnography and multiple mediator models to assess the relationship of caste with depression and anxiety in Nepal. Ann Hum Biol. 2009 May-Jun;36(3):261-80.
http://dx.doi.org/10.1080/03014460902839194
PMid:19381985 PMCid:PMC3907946

13. Banerjee I, Roy B, Sathian B, Banerjee I, Chakraborty PK, Saha A. Socio demographic profile and utilization pattern of antipsychotic drugs among schizophrenic inpatients: a cross sectional study from western region of Nepal. BMC Psychiatry. 2013 Mar 22;13:96.
http://dx.doi.org/10.1186/1471-244X-13-96
PMid:23522357

14. Khattri JB, Poudel BM, Thapa P, Godar ST, Tirkey S, Ramesh K, Chakrabortty PK. An Epidemiological Study of Psychiatric Cases in a Rural Community of Nepal. Nepal Journal of Medical Sciences 2013;2(1):52-6.
http://dx.doi.org/10.3126/njms.v2i1.7654

15. Maki P, Veijola J, Jones PB, Murray GK, Koponen H, Tienari P, Miettunen J, Tanskanen P, Wahlberg KE, Koskinen J, Lauronen E, Isohanni M: Predictors of schizophrenia–a review. Br Med Bull 2005 Jun 9, 73–74:1–15.
http://dx.doi.org/10.1093/bmb/ldh046
PMid:15947217

16. Pradhanang AL. Demographic situation and development in Nepal. Econ J Nepal. 1983 Oct-Dec;6(4):11-22. PMid:12339820

17. Foster HD: The Geography of Schizophrenia: Possible Links with Selenium and Calcium Deficiencies, Inadequate Exposure to Sunlight and Industrialization. Journal of

Orthomolecular Medicine 1988, 3(3):135–40.

18.Fahmida A, Wahab MA, Rahman MM: Pattern of psychiatric morbidity among the patients admitted in a private psychiatric clinic. Bangladesh Journal of Medical Science 2009, 8(1–2):23–28.
doi: 10.3329/bjms.v8i1.3186

19. Banerjee I, Roy B, Banerjee I, Sathian B, Mondol M, Saha A: Depression and its Cure: A Drug Utilization Study from a Tertiary Care Centre of Western Nepal. Nepal Journal of Epidemiology 2011, 1(5):144–52.
http://dx.doi.org/10.3126/nje.v1i5.6152

20. Banerjee I, Roy B, Sathian B, Banerjee I, Pugazhandhi B, Jauhari AC, Saha A, Chakraborty PK. Treatment and the impact of Age, Gender and occupation on Neurotic, stress-related and Somatoform disorders: A study from Nepal. Neurons. 2014, 1(1): 10-15

21. Banerjee I, Banerjee I, Roy B, Sathian B. Application of Binary regression Analysis in the prescription pattern of Antidepressants. Medical Science 2013; 1(1): 19-23.