

Impact of ethnicity, unemployment and economy on mental disorders : A study from Western Nepal

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Abstract

Background

The causes of mental health problems and ethnic variation are poorly understood. The main objective of the study was to find out about psychiatric diseases which frequently occur in Western Nepal for which hospitalization is required. The specific objective was to research about the

economic condition of the psychiatric patients and the prevalence of common psychiatric disorder witnessed among hospitalized patients who belong to diverse ethnic and cultural groups in Western Nepal.

Materials and Methods

It was a cross sectional study which was conducted in between 1st October 2009 and 31st March 2010 between at Manipal teaching hospital, Pokhara, Nepal. Odds ratios and adjusted odds ratio and their 95% confidence intervals (95% CI) were calculated. $p < 0.05$ was considered as statistically significant.

Results

Out of 240 cases the commonest cases of psychiatric disorders include Schizophrenia, Schizotypal and Delusion Disorders 36.3%, Mood Disorders 27.9%, Neurotic, stress-related and somatoform disorders 15.8%. Study based on ethnicity revealed that the majority of patients were Dalit [$n = 72$] followed by Brahmin [$n = 66$], Chettri [$n = 46$], Newar [$n = 19$], Gurung [$n = 17$], others [$n = 13$] and Magar and Pun [$n = 7$]. Most of the patients were <40 yrs [$n = 191$] unemployed [$n = 199$], monthly family income <10000 NPR/month [$n = 187$], students [$n = 102$] housewives [$n = 74$], job holders [$n = 17$]. Study showed that Mental and Behavioural disorder due to Psychoactive Substance abuse, Schizophrenia, Schizotypal and Delusion Disorders Mood (Affective) Disorders, Neurotic, stress-related and somatoform disorders were prevalent among unemployed patients [OR 8.170(CI 1.062, 62.853)], [OR 3.033(CI 1.334, 6.897)], [OR 0.413(CI 0.199, 0.856)] [OR 0.228(CI 0.089, 0.583)] as compared to employed patients ($p = 0.001$).

Conclusion

Schizophrenia was the commonest psychiatric disorder among the low socio-economic class of like Dalits. The study showed that culture based differences concerning mental health is further mediated by poverty, unemployment and dearth of family income which leads to high prevalence of psychiatric illness among Nepalese population. Based on the finding of the study, interventions should target these factors to minimise the load of various psychiatric illness among poor Dalit Nepalese population.

Keywords: Culture, Ethnicity, Nepal, Psychiatry

Introduction

The causes of mental health problems and ethnic variation are poorly understood¹. From Income point of view, Nepal is a poor developing country which is situated in South East Asia². Its population structure includes multi-lingual and multi ethnic diverse population. The main source of income of Nepalese people is agriculture. Most parts of Nepal are occupied by mountainous and hills where people don't have good access to health care facilities. Many health related researches that have been undertaken in Nepal are mainly about the prevalence of mental illnesses. A study carried

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out in Janakpur, Eastern Nepal reports that the commonest forms of disorder is schizophrenia 30% followed by bipolar disorder 25%³. Another research finding indicates that Schizophrenia 50.1% was the commonest psychiatric disorder followed by mood disorders 33.5% and substance use disorder 9.3%⁴ whereas study conducted by Risal confirms that the commonest psychiatric disorder were anxiety disorder as seen in a primary care setting followed by depressive and unexplained somatic symptoms⁵. Nepalese population consists of a wide range of ethnic/tribal groups namely the Brahmin, the Chettri, the Gurung, the Newar, the Puns, the Magar, the Dalit⁶. The data related to ethnic variation and corresponding mental illness is lacking in western region in particular and Nepal in general. The main objective of the study was to research about the commonest psychiatric disease which occurs in Western Nepal for which hospitalization is required. The specific objective of the study was to research about the economic condition of the psychiatric patients and to identify prevalence of common psychiatric disorder among hospitalized patients in different ethnic/cultural groups.

Material and Methods

Study design and the participants:

This research involves was a cross sectional study which was conducted at Manipal teaching hospital, Pokhara, Nepal, a tertiary care hospital situated in Western Nepal.

Data collection:

The data was collected between 1st October 2009 and 31st March 2010 at Psychiatric ward in Manipal Teaching hospital. The information and data collected about different psychiatric disorders were Organic including symptomatic mental disorder F00-F9, Mental and Behavioural disorder due to Psychoactive Substance abuse F10-19, Schizophrenia, Schizotypal and Delusion Disorders F20-29, Mood (Affective) Disorders F30-39, Neurotic, stress-related and somatoform disorders F40-48, Behavioural syndromes associated with physiological disturbances and physical factors F50-F59 and Mental retardation F70-F79. The collected data include socio-demographic details such as age (<40 years and >40 years), gender (male and female), occupation (Shopkeeper, Farmer, Labour, Retired, Jobholder, Housewife, Student and Others), housewife, religion (Muslim, Christian, Buddhist, Hindu), ethnicity (Magar, Pun, Gurung, Newar, Dalit, Chettri, Brahmin and Others), employment (employed and unemployed), monthly income NPR (<10000 /month and >10000 /month).

Inclusion criteria:

A total number of 240 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 Behavioural disorders; Diagnostic Criteria for Research⁷. The total number of cases

includes psychiatric inpatients and those who were both inpatient and outpatients.

Exclusion criteria:

All the outpatients were excluded as the research aims to study about the psychiatric patients who were critically ill for which hospitalization is required.

Sample size calculation:

For 95% confidence interval and, significance level $\alpha = 5\%$, $P=70\%$, $Q=30\%$, allowable error=10% of P, required sample size was 165. Prior to the study a pilot study was done in 50 patients admitted in the psychiatric inpatients and it was found that 70% of the patients were having monthly income <10000NPR/month⁸.

Outcome Variable:

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

Explanatory variables:

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, Buddhist, Muslim), ethnicity (Brahmin, Chettri, Newar, Dalit and others). The causes of mental health problems and ethnic variation are poorly understood.

Ethical committee approval:

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

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 significant⁹.

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Result:

Prevalence of Psychiatric disorders

The research finding revealed that common forms of psychiatric disorders were Schizophrenia, Schizotypal and Delusion Disorders 36.3%, Mood (Affective) Disorders 27.9%, Neurotic, stress-related and somatoform disorders 15.8%, Mental and behavioural disorder due to Psychoactive Substance abuse 11.3%, Behavioural syndromes associated with physiological disturbances and physical factors 4.2%, Organic including symptomatic mental disorders 2.9% and Mental retardation 1.7% respectively. The majority of psychiatric patients were <40yrs (191), 49 patients were >40yrs. Among 191 patients who were <40 years, the common psychiatric disorders were Schizophrenia, Schizotypal and Delusion Disorders (35.6%) followed by Mood (Affective) Disorders 25.1%, Neurotic, stress-related and somatoform disorders 17.8%, Mental and behavioural disorder due to Psychoactive Substance abuse 12.6% respectively. Among the patients >40yrs, most common disorders were Schizophrenia, Schizotypal and Delusion Disorders and Mood (Affective) Disorders (38.8%). Out of 110 female patients, most of them suffered from Mood (Affective) Disorders 30.9%, Schizophrenia, Schizotypal and Delusion Disorders 27.3% followed by Neurotic, stress-related and somatoform disorders 24.5% respectively. Out Of total figure, 130 patients were concerned Schizophrenia, Schizotypal and Delusion Disorders 43.8% was the commonest followed by Mood (Affective) Disorders 25.4% respectively ($P = 0.002$). Most of the patients were unemployed ($n=199$) and among them 39.2% suffered from Schizophrenia, Schizotypal and Delusion Disorders followed by Mood (Affective) Disorders 25.1% and Neurotic, stress-related and somatoform disorders 13.6% respectively. Among the employed patients ($n = 41$) most of the patients had been suffering from mood and affective disorders 41.5% followed by Neurotic, stress-related and somatoform disorders and Schizophrenia, Schizotypal and Delusion Disorders 26.8% and 22% respectively ($p = 0.02$). Most of the patients had monthly income <10000 per month ($n=187$). They were suffering from Schizophrenia, Schizotypal and Delusion Disorders ($n=67$), mood affective disorders Neurotic, stress-related and somatoform disorders ($n=33$). Religion wise, the majority of the patients were Hindus ($n=200$) followed by Buddhist ($n=25$), Christian ($n=9$) and Muslim ($n=6$). Among Hindus, Schizophrenia, Schizotypal and Delusion Disorders were common types of psychiatric disorders followed by mood affective disorders 28.5%, Neurotic, stress-related and somatoform disorders 18.5% Mental and behavioural disorder primarily caused due to Psychoactive Substance abuse 11% respectively. On the basis of ethnic background, most of the patients were Dalit [$n= 72$] followed by Brahmin ($n = 66$), Chettri ($n = 46$), Newar ($n = 19$), Gurung ($n = 170$), others ($n = 13$) and Magar and Pun ($n = 7$).

Table 1: Socio economic, demographic details and psychiatric disorder

Socio Economic and demographic Factors		Organic including symptomatic mental disorder F00-F9	Mental and behavioral disorder due to Psychoactive Substance abuse F10-19	Schizophrenia, Schizotypal and Delusion Disorders F20-29	Mood (Affective) Disorders F 30-39	Neurotic, stress-related and somatoform disorders F40-48	Behavioral syndromes associated with physiological disturbances and physical factors F50-F59	Mental retardation F70-F79
Age	>40yrs[49]	3(6.1) [1.3, 16.9]	3(6.1) [1.3, 16.9]	19(38.8) [25.2, 53.8]	19(38.8) [25.2, 53.8]	4(8.2) [2.3, 29.6]	1(2) [0.1, 10.9]	0(0) [0, 7.3]
	<40yrs[191]	4(2.1) [0.6, 5.3]	24(12.6) [8.2, 18.1]	68(35.6) [28.8, 42.8]	48(25.1) [19.1, 31.9]	34(17.8) [12.7, 24]	9(4.7) [2.2, 8.8]	4(2.1) [0.6, 5.3]
	P Value	0.113×						
Gender	Female[110]	4(3.6) [1, 9]	7(6.4) [2.6, 12.7]	30(27.3) [19.2, 36.6]	34(30.9) [22.4, 40.4]	27(24.5) [16.8, 33.7]	5(4.5) [1.5, 10.3]	3(2.7) [0.6, 7.8]
	Male[130]	3(2.3) [0.5, 6.6]	20(15.4) [9.7, 22.8]	57(43.8) [35.2, 52.8]	33(25.4) [18.2, 33.8]	11(8.5) [4.3, 14.6]	5(3.8) [1.3, 8.7]	1(0.8) [0, 4.2]
	P Value	0.002†						
Employment	Employed[41]	2(4.9) [0.6, 16.5]	1(2.4) [0.1, 12.9]	9(22) [10.6, 37.6]	17(41.5) [26.3, 57.9]	11(26.8) [14.2, 42.9]	1(2.4) [0.1, 12.9]	0(0) [0, 8.6]
	Unemployed [199]	5(2.5) [0.8, 5.8]	26(13.1) [8.7, 18.6]	78(39.2) [32.4, 46.3]	50(25.1) [19.3, 31.7]	27(13.6) [9.1, 19.1]	9(4.5) [2.1, 8.4]	4(2) [0.6, 5.1]
	P Value	0.02†						
Monthly Income	>10000/month [53]	2(3.8) [0.5, 13]	8(15.1) [6.7, 27.6]	20(37.7) [24.8, 52.1]	17(32.1) [19.9, 46.3]	5(9.4) [3.1, 20.7]	1(1.9) [0, 10.1]	0(0) [0, 6.7]
	<10000/month [187]	5(2.7) [0.9, 6.1]	19(10.2) [6.2, 15.4]	67(35.8) [29, 43.2]	50(26.7) [20.5, 33.7]	33(17.6) [12.5, 23.9]	9(4.8) [2.2, 8.9]	4(2.1) [0.6, 5.4]
	P Value	0.510×						
Religion	Muslim[6]	0(0) [0, 45.9]	0(0) [0, 45.9]	3(50) [11.8, 88.2]	2(33.3) [4.3, 77.7]	0(0) [0, 45.9]	0(0) [0, 45.9]	1(16.7) [0.4, 64.1]
	Christian[9]	0(0) [0, 33.6]	3(33.3) [7.5, 70.1]	4(44.4) [13.7, 78.8]	0(0) [0, 33.6]	1(11.1) [0.3, 48.2]	1(11.1) [0.3, 48.2]	0(0) [0, 33.6]
	Buddhist[25]	0(0) [0, 13.7]	2(8) [1, 26]	14(56) [34.9, 75.6]	8(32) [14.9, 53.5]	0(0) [0, 13.7]	0(0) [0, 13.7]	1(4) [0.1, 20.4]
	Hindu[200]	7(3.5) [1.4, 7.1]	22(11) [7, 16.2]	66(33) [26.5, 40]	57(28.5) [22.4, 35.3]	37(18.5) [13.4, 24.6]	9(4.5) [2.1, 8.4]	2(1) [0.1, 3.6]
	P Value	0.113×						
Ethnicity	Magar, Pun [7]	0(0) [0, 41]	0(0) [0, 41]	5(71.4) [29, 96.3]	2(28.6) [3.7, 71]	0(0) [0, 41]	0(0) [0, 41]	0(0) [0, 41]
	Others [13]	0(0) [0, 24.7]	2(15.4) [1.9, 45.4]	6(46.2) [19.2, 74.9]	3(23.1) [5, 53.8]	1(7.7) [0.2, 36]	0(0) [0, 24.7]	1(7.7) [0.2, 36]
	Gurung [17]	0(0) [0, 19.5]	2(11.8) [1.5, 36.4]	9(52.9) [27.8, 77]	5(29.4) [10.3, 56]	0(0) [0, 19.5]	0(0) [0, 19.5]	1(5.9) [0.1, 28.7]
	Newar [19]	0(0) [0, 17.6]	2(10.5) [1.3, 33.1]	7(36.8) [16.3, 61.6]	8(42.1) [20.3, 66.5]	2(10.5) [1.3, 33.1]	0(0) [0, 17.6]	0(0) [0, 17.6]
	Dalit [72]	5(6.9) [2.3, 15.5]	15(20.8) [12.2, 32]	22(30.6) [20.2, 42.5]	13(18.1) [10, 28.9]	9(12.5) [5.9, 22.4]	8(11.1) [4.9, 20.7]	0(0) [0, 5]
	Chettri [46]	0(0) [0, 7.7]	0(0) [0, 7.7]	21(45.7) [30.9, 61.0]	13(28.3) [16, 43.5]	12(26.1) [14.3, 41.1]	0(0) [0, 7.7]	0(0) [0, 7.7]
	Brahmin [66]	2(3) [0.4, 10.5]	6(9.1) [3.4, 18.7]	17(25.8) [15.8, 38]	23(34.8) [23.5, 47.6]	14(21.2) [12.1, 33]	2(3) [0.4, 10.5]	2(3) [0.4, 10.5]
	P Value	0.004†						
	Occupation	Shopkeeper [4]	0(0) [0, 60.2]	1(25) [0.6, 80.6]	0(0) [0, 60.2]	2(50) [6.8, 93.2]	1(25) [0.6, 80.6]	0(0) [0, 60.2]
Others [7]		0(0) [0, 41]	0(0) [0, 41]	2(28.6) [3.7, 71]	1(14.3) [0.4, 57.9]	0(0) [0, 41]	0(0) [0, 41]	4(57.1) [18.4, 19.1]
Farmer [9]		1(11.1) [0.3, 48.2]	0(0) [0, 33.6]	4(44) [13.7, 78.8]	2(22.2) [2.8, 60]	2(22.2) [2.8, 60]	0(0) [0, 33.6]	0(0) [0, 33.6]
Labour [11]		1(9.1) [0.2, 41.3]	0(0) [0, 28.5]	2(18.2) [2.3, 51.8]	6(54.5) [23.4, 83.4]	2(18.2) [2.3, 51.8]	0(0) [0, 28.5]	0(0) [0, 28.5]
Retired [16]		3(18.8) [4, 45.6]	1(6.3) [0.2, 30.2]	5(31.3) [11, 58.7]	6(37.5) [15.2, 64.6]	1(6.3) [0.2, 30.2]	0(0) [0, 20.6]	0(0) [0, 20.6]
Jobholder [17]		0(0) [0, 19.5]	0(0) [0, 19.5]	3(17.6) [3.8, 43.4]	7(41.2) [18.4, 67.1]	6(35.3) [14.2, 61.7]	1(5.9) [0.1, 28.7]	0(0) [0, 19.5]
Housewife [74]		2(2.7) [0.3, 9.4]	3 (4.1) [0.8, 11.4]	23(31.1) [20.8, 42.9]	23(31) [20.8, 42.9]	18(24.3) [15.1, 35.7]	5(6.8) [2.2, 15.1]	0(0) [0, 4.9]
Student [102]		0(0) [0, 3.6]	22(21.6) [14, 30.8]	48(47.1) [37.1, 57.2]	20(19.6) [12.4, 28.6]	8(7.8) [3.4, 14.9]	4(3.9) [1.1, 9.7]	0(0) [0, 3.6]
P Value		0.000†						

† p<0.05, statistically significant., × p>0.05, statistically not significant.

Table 2: Logistic Regression Table of Socio Economic, Demographic factors and various Psychiatric Disorders

Socio Economic and demographic Factors		Organic including symptomatic mental disorder F00-F9	Mental and behavioral disorder due to Psychoactive Substance abuse F10-19	Schizophrenia, Schizotypal and Delusion Disorders F20-29	Mood (Affective) Disorders F 30-39	Neurotic, stress-related and somatoform disorders F40-48	Behavioral syndromes associated with physiological disturbances and physical factors F50-F59	Mental retardation F70-F79
		Odds Ratio (Confidence Interval)	Odds Ratio (Confidence Interval)	Odds Ratio (Confidence Interval)	Odds Ratio (Confidence Interval)	Odds Ratio (Confidence Interval)	Odds Ratio (Confidence Interval)	Odds Ratio (Confidence Interval)
Age	>40yrs	1	1	1	1	1	1	1
	<40yrs	0.328(0.071, 1.517) x	2.204(0.635, 7.644) x	0.873(0.457, 1.666) x	1.887(0.974, 3.655) x	2.436(0.821, 7.230) x	2.374(0.293, 19.197)x	-
Gender	Female	1	1	1	1	1	1	1
	Male	0.626(0.137, 2.859) x	2.675(1.086, 6.591)*	2.082(1.208, 3.588)†	0.70(0.432, 1.338) x	0.284(0.134, 0.605)†	0.84(0.237, 2.981) x	0.276(0.028, 2.697) x
Employment	Employed	1	1	1	1	1	1	1
	Unemployed	0.503(0.094, 2.685) x	6.012(0.792, 45.621)x	2.292(1.038, 5.062)*	0.474(0.235, 0.953)*	0.428(0.192, 0.954)†	1.895(0.233, 15.379)x	-
Monthly Income	>10000/month	1	1	1	1	1	1	1
	<10000/month	0.701(0.132, 3.718) x	0.636(0.261, 1.548)x	0.921(0.490, 1.731) x	0.773(0.399, 1.498)x	2.057(0.761, 5.563) x	2.629(0.326, 21.235) x	-
Religion	Muslim	1	1	1	1	1	1	1
	Christian	-	-	0.8(0.101, 6.347) x	-	-	-	-
	Buddhist	-	-	1.273(0.214, 7.581) x	0.941(0.142, 6.255) x	-	-	0.208(0.011, 3.919)x
	Hindu	-	-	0.493(0.097, 2.507) x	0.797(0.142, 4.474) x	-	-	0.51(0.004, 0.653)*
Ethnicity	Magar, Pun	1	1	1	1	1	1	1
	Others	-	-	0.343 (0.048, 2.457) x	0.750(0.093, 6.043) x	-	-	-
	Gurung	-	-	0.450(0.068, 2.998) x	1.042(0.149, 7.275) x	-	-	-
	Newar	-	-	0.233(0.35, 1.539) x	1.818(0.279, 11.865) x	-	-	-
	Dalit	-	-	0.176(0.032, 0.978) x	0.551(0.096, 3.158) x	-	-	-
	Chettri	-	-	0.336(0.059, 1.913) x	0.985(0.169, 5.730) x	-	-	-
Occupation	Brahmin	-	-	0.139(0.025, 0.783) x	1.337(0.240, 7.439) x	-	-	-
	Shopkeeper	1	1	1	1	1	1	1
	Others	-	-	-	0.167(0.009, 2.984)x	-	-	-
	Farmer	-	-	-	0.286(0.023, 3.523)x	0.857(0.055, 13.479) x	-	-
	Labour	-	-	-	1.2(0.121, 11.865) x	0.667(0.043, 10.253) x	-	-
	Retired	-	0.2(0.01, 4.166) x	-	0.6(0.066, 5.447)x	0.200(0.010, 4.166) x	-	-
	Jobholder	-	-	-	0.7(0.079, 6.224)x	1.636(0.138,19.387) x	-	-
Housewife	-	0.127(0.01, 1.609) x	-	0.451(0.060, 3.402)x	0.964(0.094, 9.858) x	-	-	
	Student	-	0.825(0.082, 8.327) x	-	0.244(0.032, 1.839)x	0.255(0.024, 2.746) x	1	1

† p<0.05, statistically significant. x p>0.05, statistically not significant.

Among the Dalits, 30.6% of them had been suffering from Schizophrenia, Schizotypal and Delusion Disorders followed by Mental and behavioural disorder due to Psychoactive substance abuse 20.8%, mood and affective disorders 18.1%, Neurotic, stress-related and somatoform disorders 12.5%, Behavioural syndromes associated with physiological disturbances and physical factors 11.1%, Organic including symptomatic mental disorder 6.9% respectively.

Psychiatric disorders prevalent among the Brahmins are characterized as Mood (Affective) Disorders 34.8%, Schizophrenia, Schizotypal and Delusion Disorders 25.8%, Neurotic, stress-related and somatoform disorders 21.2%, Mental and behavioural disorder resulted owing to Psychoactive Substance abuse 9.1%, Organic including symptomatic mental disorder 3%, Behavioural syndromes associated with physiological disturbances and physical factors 3% and Mental retardation 3% respectively. Among the Chettri, the commonest psychiatric disorder was Schizophrenia, Schizotypal and Delusion Disorders 45.7% which is followed by Mood (Affective) Disorders 28.3%, Neurotic, stress-related and somatoform disorders 26.1% respectively. (P = 0.004). The data indicates that most of the patient were students (n = 102) followed by housewives (n = 74) job holders (n= 17) retired (n = 17), labours (n = 11), farmers (n = 9), others (n = 7) and shopkeepers (n = 4). Among students the most common psychiatric disorder was Schizophrenia, Schizotypal and Delusion Disorders 47.1%, mental and behavioural disorder due to Psychoactive Substance abuse 21.6%, mood (Affective) Disorders 19.6%, Neurotic, stress-related and somatoform disorders 7.8%, Behavioural syndromes associated with physiological disturbances and physical factors 3.9% respectively. None of the students were found to be suffering from Organic including symptomatic mental disorder 0% and mental retardation 0%. Among housewives, the commonest psychiatric disorder was Mood (Affective) Disorders and Schizophrenia, Schizotypal and Delusion Disorders 31%, followed by Neurotic, stress-related and somatoform disorders 24.3%, Behavioural syndromes associated with physiological disturbances and physical factors 6.8%, Mental and behavioural disorder because of Psychoactive Substance abuse 4.1% and Organic including symptomatic mental disorder 2.7% respectively. None of the housewives were diagnosed to be suffering from Mental retardation 0%. All the values are found to be statistically significant. (P value = 0.000) (Table 1).

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

Logistic regression analysis finding shows that the psychiatric disorders like Mental and behavioural disorder due to Psychoactive Substance abuse F10-19, Schizophrenia, Schizotypal and Delusion Disorders F20-29 and Neurotic, stress-related and somatoform disorders F40-48 was found more prevalent in males [OR 2.675,95%(CI 1.086, 6.591)], [OR 2.082,95%(CI 1.208, 3.588)], [OR 0.284,95%(CI 0.134, 0.605)] respectively as compared to female patients. However, in the case of Schizophrenia,

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Schizotypal and Delusion Disorders F20-29, it revealed that it was more prevalent among unemployed patients [OR 2.292, 95 % (CI 1.038, 5.062)]. All the values were found to be statistically significant (Table 2).

Considering the adjusted Odds ratio, it was found that Mental and behavioural disorder due to Psychoactive Substance abuse F10-19, Schizophrenia, Schizotypal and Delusion Disorders F20-29, Neurotic, stress-related and somatoform disorders F40-48 was [OR3.287,95%(CI 1.320, 8.186)], [OR 2.494,95%(CI 1.417, 4.391)], [OR 0.191,95% (CI 0.081, 0.449)] respectively indicating bigger number of male patients as compared to female ones. Mental and behavioural disorder due to Psychoactive Substance abuse F10-19 Schizophrenia, Schizotypal and Delusion Disorders F20-29 Mood (Affective) Disorders F 30-39 Neurotic, stress-related and somatoform disorders F40-48 was found to be more prevalent in unemployed patients [OR 8.170 (CI 1.062, 62.853)], [OR 3.033 (CI 1.334, 6.897)], [OR 0.413 (CI 0.199, 0.856)] [OR 0.228 (CI 0.089, 0.583)] as compared to employed patients. All the values were found to be statistically significant (Table 3).

Table 3: Adjusted Odd Ratio Table

Socio Economic and demographic Factors		Mental and behavioral disorder due to Psychoactive Substance abuse F10-19	Schizophrenia, Schizotypal and Delusion Disorders F20-29	Mood (Affective) Disorders F 30-39	Neurotic, stress-related and somatoform disorders F40-48
		Adjusted Odds Ratio (Confidence Interval)	Adjusted Odds Ratio (Confidence Interval)	Adjusted Odds Ratio (Confidence Interval)	Adjusted Odds Ratio (Confidence Interval)
Gender	Female	1	1	1	1
	Male	3.287(1.320, 8.186) [†]	2.494(1.417, 4.391) [†]	0.641(0.354, 1.162) x	0.191(0.081, 0.449) [†]
Employment	Employed	1	1	1	1
	Unemployed	8.170(1.062, 62.853) [†]	3.033(1.334, 6.897) [†]	0.413(0.199, 0.856) [†]	0.228(0.089, 0.583) [†]

[†]p<0.05, statistically significant.

x p>0.05, statistically not significant.

Discussion:

Prevalence of Psychiatric disorder

There is a wide variation concerning prevalence of psychiatric illness in Nepal. In this research it was revealed that commonest psychiatric disorder was Schizophrenia, Schizotypal and Delusion Disorders 36.3% followed by Mood (Affective) Disorders 27.9%, Neurotic, stress-related and somatoform disorders 15.8%, Mental and Behavioural disorder due to Psychoactive Substance abuse 11.3%, Behavioural syndromes associated with physiological disturbances and physical factors 4.2%, Organic including symptomatic mental disorders 2.9% and Mental retardation 1.7% respectively. Likewise, the study conducted by Shrestha MR in Kathmandu indicates that common diagnoses were Schizophrenia (50.1%), mood disorders (33.5%) and substance use disorder (9.3%) which corresponds to the finding of this research⁴. However, the finding of this study is contradictory to another research carried out by Risal A et al in Kathmandu Valley, Nepal as his finding concludes that the commonest cause of depression among referred in-patients was anxiety disorder¹⁰. A study conducted in 2000 at Jiri which is situated in North eastern part of Nepal reported that out of 653 patients, the commonest psychiatric disorder was somatization disorder 11.08%, Generalized anxiety disorder 3.5%, Depression 3.1%, Mania 3.6%, Schizophrenia 1.4% and Antisocial personality disorder 0.2% which is quite dissimilar to this research finding¹¹. A study done by Khattri JB et al. revealed that the commonest psychiatric disorder among psychiatric outpatients is neurotic, stress-related and somatoform disorders (35.4%) followed by mood disorder (18.3%), schizophrenia, schizotypal and delusional disorders (17.4%) and mental and Behavioural disorders due to psychoactive substance use (9.7%)¹². The probable cause of the difference in the prevalence of psychiatric illness in Nepal could be primarily due to the differences in terms of diverse ethnic backgrounds, socio-demographic and socio-economic variations in different parts of Nepal.

Socio-Economic, demographic factors and psychiatric disorders:

In the course of conducting research, most of the Psychiatric disorders were seen among young patients having age groups <40yrs (n=191) and (n=49) patients were >40yrs. Research conducted by Banerjee et al concerning various psychiatric disorders namely schizophrenia, anxiety and depression in Nepal shows that they are commonly witnessed below 40 year¹³⁻¹⁵. Among many common cases of psychiatric disorders, primarily Schizophrenia, Schizotypal and Delusion Disorder patients were 40 yrs (n=68) and <40yrs(n=19). In terms of Mood (Affective) Disorders, most of the patients were aged<40yrs (n=48). The present study is quite similar to research conducted by Maki P et al as it shows that schizophrenia is common in adolescent and mood disorders which are commonly seen among youths in Nepal¹⁶. Psychiatric disorders are commonly seen in young population and the reason behind may be that life

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expediency of patients is satisfactory in Nepal. Although this research didn't have age limitation of patients, the collected samples moreover belong to the age group < 40 yrs. Besides other possible reasons may be that patients >40 yrs are socially more secured and the chances of psychiatric disorders in this population are less¹⁷. The study indicates that psychiatric disorder is most commonly seen among males as compared to females and this finding resembles similar study carried out in Bangladesh. However, these findings were contradictory to the findings of Australia and the USA as it indicates the dominance of psychiatric illness among females¹⁸⁻²⁰. With regard to male patients [n=130], Schizophrenia, Schizotypal and Delusion Disorders 43.8% was common followed by Mood (Affective) Disorders 25.4%. Similar finding was reported by Banerjee et al and it affirmed schizophrenia as common case among males²¹. Among 110 female patients, the majority of them had suffered from Mood (Affective) Disorders 30.9%, Schizophrenia, Schizotypal and Delusion Disorders 27.3% followed by Neurotic, stress-related and somatoform disorders 24.5% respectively. In a study conducted in 2010 among Asians population, it is revealed that Mood (Affective) Disorder like depression is commonly seen among females²². The cause of such gender variation on different psychiatric disorders could be due to variances in recurrence risk, emotional expressions, societal roles and professional bias during the time of diagnosis¹⁷. Unemployment is a serious problem particularly in rural areas in Nepal²³. In the course of the study, it was found that psychiatric disorders were mainly associated with unemployment problem low monthly income of family. Most of the patients were unemployed (n=199) having monthly income <10000 (n=187). Among the unemployed patients 39.2% were suffering from Schizophrenia, Schizotypal and Delusion Disorders followed by Mood (Affective) Disorders 25.1% and Neurotic, stress-related and somatoform disorders 13.6% respectively. Most of the patients had monthly income<10000 per month (n=187) and they were suffering from Schizophrenia, Schizotypal and Delusion Disorders (n=67), mood affective disorders Neurotic, stress-related and somatoform disorders (n=33). Similar finding was noted 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 disease is more frequently witnessed among the rich. Schizophrenia was also found to be common among urban dwellers and blackmm community population in the United States²⁴. This finding confirms that low socioeconomic status of people is associated with a higher prevalence of psychiatric disorders^{25, 26} and similar types of findings were also reported by Risal A in Nepal⁵. Most of the patients were Hindus (n=200) followed by Buddhist (n=25), Christian (n=9), and Muslim (n=6). Likewise, from religious point of view, Schizophrenia, Schizotypal and Delusion Disorders was the commonest psychiatric disorder(n=187) among the Hindus followed by mood affective disorders 28.5%, Neurotic, stress-related and somatoform disorders 18.5% Mental and Behavioural disorder due to Psychoactive Substance abuse 11%

respectively. Similar findings were reported by Banerjee et al which has shown that psychiatric disorders like schizophrenia were commonly found in Hindus followed by Buddhists. This could be primarily owing to the reason that Nepal is a Hindu population dominated country and it is expected that the majority of patients will be Hindu²¹. Most of the patients were students (n = 102) followed by housewives (n = 74) but service holders were very limited in numbers (n=17). Among students, the commonest psychiatric disorder was Schizophrenia, Schizotypal and Delusion Disorders 47.1%, Mental and Behavioural disorder due to Psychoactive Substance abuse 21.6%, Mood (Affective) Disorders 19.6%, Neurotic, stress-related and somatoform disorders 7.8%, Behavioural syndromes associated with physiological disturbances and physical factors 3.9% respectively. None of the students were diagnosed to be suffering from Organic including symptomatic mental disorder 0% or mental retardation 0%. However, among housewives, the commonest psychiatric disorder was Mood (Affective) Disorders and Schizophrenia, Schizotypal and Delusion Disorders 31% whereas none of the housewives were found to be suffering from Mental retardation 0%. Similar finding was reported by Fahmida A et al in Bangladesh and it revealed that the occupation related psychiatric disorders were rather common among housewives and students¹⁸. Study done by Banerjee et al in Nepal also showed that psychiatric disorders such as mood affective disorders; Neurotic, stress-related and somatoform disorders are commonly noted among housewives and students. The most convincing reason behind this fact is stressful life pattern and the effects resulted due to child birth which may lead to various psychiatric disorders among housewives¹⁸. Other social problems such as broken families, living apart from husband or husband residing in foreign country for employment purpose can also be attributed to this fact¹³. However, among students, some causes of high prevalence psychiatric disorders could be due to stressful life and inability to cope up with their studies¹⁴. This study which was conducted from ethnic line of patients indicated that psychiatric disorder was commonly found among Dalits [n= 72] followed by Brahmin [n = 66], Chettri [n = 46], Newar [n = 19], Gurung [n = 17], others [n = 13] and Magar and Pun [n = 7] respectively. There are similar other findings which report that psychiatric disorders are commonly found in Dalit in Nepal¹. Among the Dalit, the commonest psychiatric disorders were Schizophrenia, Schizotypal and Delusion Disorders 30.6% followed by Mental and behavioral disorder due to Psychoactive Substance abuse 20.8%, mood and affective disorders 18.1%, Neurotic, stress-related and somatoform disorders 12.5%. Study done by Banerjee et al also reported that schizophrenia is commonly found among Dalit patients. Similar findings were reported in the research conducted in the Rural Community of Nepal as well^{1,17}. It is because Nepal is an under developed country having poor financial status which could lead to high prevalence of psychiatric illness. Nepal is a mountainous country and her main source of income is agriculture. Many Nepalese people are financially poor and therefore can't afford to have

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health care facility timely and in course of time it may result in various psychiatric disorders. A research conducted in Nepal by Kohrt BA et al also concluded that the caste-based disparity, poverty, lack of social support and stressful life events have adversely affected the mental health of Nepalese people¹.

Conclusion

Psychiatric disorders namely Schizophrenia was the commonest psychiatric disorder among the low socioeconomic group among the culture Dalit. In Nepal it is also found that culture based differences in mental health mediated by poverty, unemployment, dearth of family income could lead to high prevalence of psychiatric illness among the Nepalese population. Depending on these findings of the study interventions should target these factors to decline the load of various psychiatric illness among the 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 beneficial to assess the psychiatric disorders in different cultures all over Nepal.

Relevance of the study:

Psychiatric disorders namely Schizophrenia was the commonest psychiatric disorder among low socio-economic group of people who belong to Dalit community. It is also revealed that culture based differences have worsened the quality of mental health and moreover it has been further complicated by poverty, unemployment, dearth of family income leading to high prevalence of psychiatric illness among Nepalese population. Based on these findings, interventions should target to address these factors to minimize the load of various psychiatric illnesses.

Future scope of the study:

This study is exclusively based on the research which was carried out in the territory hospital located in Western Development Region in Nepal. A multi centric hospital based research having bigger sample size would be beneficial to assess the psychiatric disorders in the light of different ethnic and cultural backgrounds of Nepalese people.

Author's Contribution:

IB designed the study, deduced the data, drafted the manuscript, and revised it. IB2, BR, PKC and SK planned the study with IB, acquired the data, conducted the data analysis, interpreted the data, and revised the manuscript. IB2 has also participated in the language editing along with IB and SK. BS participated in statistical analysis, interpreted the data, and revised the manuscript. PKS, PB and ACS critically revised the manuscript. All the authors approved the final document.

List of abbreviations

NPR: Nepalese rupees Yrs: Years MTH: Manipal teaching hospital.

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Conflict of interest:

There is no conflict of interest among authors arising from the study.

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