

Prevalence of Mental Disorders in Nepal: Findings from the Pilot Study

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ABSTRACT

Background: The global prevalence of mental disorders is high and has an increasing trend. In Nepal, there is dearth in literature on prevalence of mental disorders based on national representative sample. In this study, we aim to present the findings on the prevalence of mental disorders from the pilot study of National Mental Health Survey, Nepal.

Methods: A cross-sectional study was conducted among 1647 participants aged 13 years and above in three districts of Nepal: Dhanusha, Bhaktapur and Dolakha each representing three ecological regions. Mini International Neuropsychiatric Interview (MINI) standard version 7.0.2 for DSM-5 was used for adults (aged 18 years and above), and kid version of the same tool was used for children (aged 13-17 years) in Nepali language. Separate sets of questions were added for epilepsy and dissociative conversion disorder that were not in the Mini International Neuropsychiatric Interview tool. Prevalence of assessed mental disorders was reported separately for adults and children.

Results: The current prevalence of mental disorders among adults and children were 13.2% and 11.2% respectively. Substance use disorder, dissociative conversion disorder, major depressive disorder, alcohol use disorder and psychotic disorder were common among adults. Similarly, psychotic disorder, agoraphobia, major depressive disorder, and anxiety disorders were common among children. Current suicidality was present among 10.9% adults and 8.7% children.

Conclusions: Our findings from the pilot study have given insight into the prevalence of different mental disorders in the survey areas. These findings can be utilized for planning the National Mental Health Survey, Nepal.

Keywords: Mental disorders; mental health survey; MINI; Nepal; pilot study.

INTRODUCTION

The prevalence of mental disorders is increasing globally. Mental and substance use disorders were the largest contributors to the non-fatal burden covering 18.7% of the global Years Lived with Disability (YLDs) in 2016.¹ Despite the high burden, treatment gap for mental disorders is huge all over the world especially in low- and middle-income countries.²⁻⁴

Previous studies indicate an increasing prevalence of mental disorders in Nepal.⁵⁻⁸ Most of these studies are either conducted in limited population or included

fewer number of mental disorders, or used screening tools, or there was lack of homogeneity in the tools etc. So, need of a national level prevalence study of mental disorders in Nepal was realized. A pilot survey was then conducted with the main aim of assessing the feasibility of the national survey. In this paper, findings on the prevalence of mental disorders in the pilot study areas are presented.

METHODS

The study was conducted in three purposively selected districts of Nepal: Dhanusha, Bhaktapur and Dolakha

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representing Terai, Hill and Mountain region respectively. Total of 1647 participants including 276 children aged 13-17 years and 1371 adults aged 18 years & above, were included. Data collection was done from June 20 to July 20, 2018. Given the lack of nationwide prevalence data from Nepal, sample size was calculated using the prevalence estimates from recent mental health survey of India.⁹

The sample size was proportionate to the total number of households in selected districts as per the census report of 2011¹⁰ and wards were considered the primary sampling units (PSUs). A probability proportionate to size method was applied to identify PSUs at district level. From the selected PSUs, the household listing was done and 30 households were randomly selected per PSU. In case of more than one eligible adult in the household, lottery method was used for selecting the participant. Because of less sample size in case of children, only 6 households were selected per PSU, and the participants were recruited using same technique as in adults.

Trained data enumerators did the face-to-face interviews with the participants using paper version of Mini International Neuropsychiatric Interview (MINI)

standard and MINI-Kid V. 7.0.2 for DSM-5. MINI is an internationally validated diagnostic tool for assessing mental disorders.¹¹ Licensure was obtained for the use of MINI tools. Questions were added for disorders such as epilepsy and dissociative conversion disorders that were not present in the license obtained MINI tools (Table 1). Both the standard and kid versions of the tools were translated into Nepali language using a six-step procedure (the details on the tools translation are in pipeline for publication) and were then checked for the cultural appropriateness.

The data were entered in Epidata V 3.1 and analyzed in IBM SPSS Statistics 23 version. We calculated the prevalence of each of the assessed disorders (Table 1). We also developed a composite variable 'any current mental disorders' based on the presence of current mental disorders that were included in the Nepali translated MINI tool (except "autism spectrum disorder that could not be ruled out"). We then reported the association between "any current mental disorder" and the socio-demographic characteristics of the participants separately for children and adults using the Chi-square test at 5% level of significance.

Table 1. List of mental disorders assessed in the pilot survey.

Mental disorders among adults		Mental disorders among children	
Disorders from the MINI module			
1	Major depressive episode (current, past and recurrent)	1	Major depressive episode (current, past and recurrent)
2	Suicidality (current and lifetime attempt)*	2	Suicidality (current and lifetime attempt)*
3	(Hypo) manic episode (current and past)	3	(Hypo) manic episode (current and past)
4	Panic disorder (current and lifetime)*	4	Panic disorder (current and lifetime)*
5	Agoraphobia (current)	5	Agoraphobia (current)
6	Social phobia (current)*	6	Separation anxiety disorder (current)*
7	Obsessive compulsive disorder (OCD) (current)*	7	Social phobia (current)*
8	Posttraumatic Stress Disorder (PTSD) (current)*	8	Specific phobia (current)*
9	Alcohol use disorder (past 12 months)	9	OCD (current)*
10	Substance use disorder (past 12 months)	10	PTSD (current)*
11	Any psychotic disorder (current and lifetime)	11	Alcohol use disorder (past 12 months)
12	Anorexia nervosa (current-past three months)	12	Substance use disorder (past 12 months)
13	Bulimia nervosa (current-past three months)	13	Tourette's disorder (current)
14	Generalized anxiety disorder (current-past six months)	14	Attention Deficit Hyperactivity Disorder (ADHD) (past six months)
15	Antisocial personality disorder (lifetime)	15	Conduct disorder (past 12 months)

16	Oppositional defiant disorder (past six months)
17	Any psychotic disorder (current and lifetime)
18	Anorexia nervosa (current-past three months)
19	Bulimia nervosa (current-past three months)
20	Binge eating disorder (current)
21	Generalized anxiety disorder (current-past six months)
22	Adjustment disorders (current)
23	Autism Spectrum Disorder
Additional disorders	
16	Dissociative conversion disorder (lifetime) <input type="checkbox"/> Conversion disorder <input type="checkbox"/> Trance and possession disorder <input type="checkbox"/> Somatic symptom disorder
17	Epilepsy (lifetime)
24	Dissociative conversion disorder (lifetime) <input type="checkbox"/> Conversion disorder <input type="checkbox"/> Trance and possession disorder <input type="checkbox"/> Somatic symptom disorder
25	Epilepsy (lifetime)
26	Intellectual disability

*Current indicates past month

RESULTS

Table 2 and table 3 summarize the socio-demographic characteristics of children and adult participants, respectively. In each of the table percentage has been calculated out of total participants who responded to the question on that variable. Among children, prevalence of any current mental disorder was higher among: those from Dolakha district, females, and those living in nuclear family. However, the difference was not statistically significant (Table 2). The average age of the participants was 15.2 years with the standard deviation of 1.4 years and the prevalence of any current mental disorder was higher among those aged 16-17 years (16.3%) compared to those aged 13-15 years (7.2%).

Similarly, among adults, any current mental disorder was higher among: those from Dolakha district, those aged 65 years and above, males, divorced, and those with agriculture occupation ($p < 0.05$ for each of them) (Table 2). Occupation of majority of adult participants was housewife (39.4%) followed by agriculture (20.6%), business (16.5%), daily worker (7.2%), service (5.7%) and others (10.5%). Prevalence of mental disorders was high among those participants whose occupation was agriculture (22.2%) followed by business (18.8%), daily worker (14.8%), others (12.5%), housewife (8.7%) and service (4.3%). Regarding the characteristics of spouse, majority of the participant's spouse had no or low education (47.9%) followed by secondary level and above (39.2%) and lower secondary level (12.9%). Among these the prevalence of mental disorders was highest among those with no or low education (17.8%). Similarly, agriculture (20.3%), housewife (20.0%), business (15.8%),

and daily worker (14.4%) were the top four types of occupation of the participant's spouse. Among these, prevalence of mental disorders was high among those participants whose spouse's occupation was housewife (19.6%), agriculture (18.9%), followed by others (13.2%). The association between any mental disorders and the variables occupation, education of spouse and occupation of spouse were statistically significant at 95% confidence interval.

Table 2. Socio-demographic characteristics and mental disorder among children (n=276).

Variables	Group	Total Frequency (percent)	Any current mental disorder Frequency (Row percent)
District	Bhaktapur	72 (26.2)	11 (15.3)
	Dhanusha	153 (55.4)	11 (7.2)
	Dolakha	51 (18.5)	9 (17.6)
Sex	Male	103 (37.3)	9 (8.7)
	Female	173 (62.7)	22 (12.7)
Marital Status	Unmarried	270 (97.8)	30 (11.1)
	Married	6 (2.2)	1 (16.7)
Ethnicity	Dalit	41 (14.9)	2 (4.9)
	Disadvantage Janajati	25 (9.1)	6 (24)
	Disadvantaged non dalit Terai	93 (33.7)	7 (7.5)
	Religious minorities	8 (2.9)	1 (12.5)

	Relatively advantaged Janajatis	47 (17.0)	5 (10.7)	Ethnicity*	Dalit	192 (14.4)	22 (11.5)
	Upper caste group	62 (22.5)	10 (16.1)		Disadvantage Janajati	95 (7.1)	13 (13.7)
Family type	Single	162 (58.7)	21 (13.0)		Disadvantaged non dalit Terai	450 (33.7)	38 (8.4)
	Joint/Extended	114 (41.3)	10 (8.8)		Religious minorities	42 (3.1)	3 (7.1)
Education	No education or primary	29 (10.5)	4 (13.8)		Relatively advantaged Janajatis	246 (18.4)	53 (21.5)
	Lower secondary	80 (29.0)	5 (6.25)		Upper Caste groups	309 (23.2)	51 (16.5)
	Secondary or higher	167 (60.5)	22 (13.2)	Family type	Single	730 (53.7)	103 (14.1)
Father's occupation	Agriculture	49 (18.8)	7 (14.3)		Joint/Extended	629 (46.3)	78 (12.4)
	Service	36 (13.8)	3 (8.3)	Education*	No education or primary level	733 (54.3)	119 (16.2)
	Business	63 (24.1)	6 (9.5)		Lower secondary level	137 (10.1)	22 (16.1)
	Daily worker	56 (21.5)	8 (14.3)		Secondary level and above	481 (35.6)	40 (8.3)
	Foreign employment	49 (18.8)	5 (10.2)				
	Others	8 (3.1)	1 (12.5)				

Table 3. Socio-demographic characteristics and mental disorder among adults (n=1371).

Variables	Group	Total Frequency (percent)	Any current mental disorder Frequency (Row percent)
District*	Bhaktapur	360 (26.3)	64 (17.8)
	Dhanusha	758 (55.3)	65 (8.6)
	Dolakha	253 (18.5)	52 (20.6)
Completed age in years*	18-24	271 (17.6)	8 (3.3)
	25-33	322 (23.5)	28 (8.7)
	34-48	424 (31.0)	56 (13.2)
	49-64	270 (19.7)	55 (20.4)
	65 years and above	111 (8.11)	34 (30.6)
Sex*	Male	462 (33.9)	99 (21.4)
	Female	901 (66.1)	81 (9.0)
Marital Status*	Unmarried	127 (9.5)	11 (8.7)
	Married	1122 (83.7)	141 (12.6)
	Widow	81 (6.0)	22 (27.2)
	Divorced	10 (0.7)	5 (50)

*Statistically significant p-value at 95% level of significance

A total of 212 (12.9%) participants had any current mental disorders that was approximately 11% in children and 13% in adults. Among children, we found less than one percent of current prevalence for disorders such as major depressive disorder, panic disorder and anxiety disorders. Only 0.7% of children had substance use disorder though 1.8% had taken any substance in past 12 months. About 12% participants felt that they had less intellectual capacity than other children of their age. We did not find any children with conditions such as manic and hypomanic episode, PTSD, alcohol use disorder, Tourette's disorder, ADHD, conduct disorder, bulimia nervosa, and binge eating disorder (Table 4).

Among adult participants, there was less than 1% prevalence for disorders such as current panic disorder, anxiety disorders, PTSD, OCD and antisocial personality disorder. A total of 5.2% were screened positive for alcohol use disorder and 13.9% participants had non-alcoholic substance in past 12 months. However, only 3.4% had alcohol use disorder and 7.3% had non-alcohol substance use disorder with tobacco being the most commonly used non-alcohol substance (table 4). We did not find any cases of anorexia nervosa, bulimia nervosa and hypomanic episode in adult participants. In both the groups, current suicidality was the highest reported condition (Table 5).

Table 4. Mental disorders among participants.

Mental disorder	Children (n=276) Frequency (%)	Adults (n=1371) Frequency (%)
Any current mental disorder	31 (11.2)	181 (13.2)
Major depressive disorder, current	2 (0.7)	46 (3.4)
Major depressive disorder, past	5 (1.8)	61 (4.4)
Panic disorder, current	1 (0.4)	10 (0.7)
Panic disorder, lifetime	3 (1.1)	29 (2.1)
Agoraphobia, current	6 (2.2)	8 (0.6)
Separation anxiety disorder, current	1(0.4)	-
Social anxiety disorder (social phobia), current	1(0.4)	3 (0.2)
Specific phobia, current	3 (1.1)	-
OCD, current	3 (1.1)	4 (0.3)
PTSD, current	-	2 (0.1)
Alcohol use disorder, current	-	46 (3.4)
Substance use disorder, current	2 (0.7)	100 (7.3)
Oppositional defiant disorder, current	2 (0.7)	-
Psychotic disorder, current	5 (1.8)	15 (1.1)
Psychotic disorder, lifetime	12 (4.3)	47 (3.4)
Anorexia nervosa, current	5 (1.8)	-
Generalized anxiety disorder, current	5 (1.8)	19 (1.4)
Antisocial personality disorder, lifetime	-	3 (0.2)
Adjustment disorder, current	1 (0.4)	-
Autism Spectrum Disorder 'not ruled out'	16 (5.8)	-
Trance and possession disorder, current	1 (0.4)	20 (1.5)
Somatic symptom disorder, current	1 (0.4)	59 (4.3)
Conversion disorder, current	1 (0.4)	19 (1.4)
Dissociative conversion disorder, current	3 (1.1)	83 (6.1)
Epilepsy, lifetime	5 (1.8)	14 (1)

Table 5. Suicidality among participants.

Suicidality and name of mental disorder	Children (n=276) Frequency (%)	Adults (n=1371) Frequency (%)
Suicidality, current	24 (8.7)	150 (10.9)
Suicidality, lifetime attempt	1 (0.4)	5 (0.4)
Suicidality, likely in near future	3 (1.1)	10 (0.7)
Suicidality, low	18 (6.5)	126 (9.2)
Suicidality, moderate	4 (1.4)	9 (0.7)
Suicidality, high	4 (1.4)	19 (1.4)

DISCUSSION

In this study we found that 12.9% of the participants had any current mental disorder which was 11.2% among children and 13.2% among adults. Upon examining the association between 'any current mental disorders' and selected variables, higher prevalence of mental disorders was found in the mountain district Dolakha, those living in nuclear family, and those who/whose spouse/father had agriculture occupations. Among children, it was highest among 16-17 years and female whereas among adults, highest prevalence was found among those aged 65 years and above, divorced, and males.

Our finding on the current prevalence of any mental disorders (13.2%) is comparable with that of India (10.6%),⁹ Spain (11.3%)¹² and Egypt (16.9%)¹³ where the disorders were assessed using the MINI. We found a higher prevalence of any mental disorders in the mountain district Dolakha (20.6%) and the hill district Bhaktapur (about 17.8%) compared to the Terai district Dhanusha (about 8.6%). Dolakha and Bhaktapur were among the 14 districts that were severely affected by the devastating earthquake that hit Nepal in April 2015.¹⁴

Though the rates of mental disorders varies by gender e.g. internalizing disorders like depression and anxiety are higher among female whereas externalizing disorders like conduct disorders and oppositional defiant disorders are higher among male;¹⁵⁻¹⁶ a poor overall psychological wellbeing among female adolescents has been reported.¹⁷ This is consistent with our finding of higher prevalence of mental disorders among female adolescents. However among adults, we found a higher prevalence among males compared to females similar to a previously conducted study in rural Nepal.¹⁸ In our study we have reported the prevalence of different types of anxiety disorders separately. When we combine these different forms of anxiety disorders, we find that 5.4%

of children and 3.2% of adults have at least one form of anxiety disorder. This is comparable with a previous study from Nepal¹⁹ as well as with the international literature.²⁰

In this study, suicidality included ideation, preparation, or plan for attempting suicide, thoughts of attempting suicide and attempting suicide. We found a high prevalence of current suicidality that was calculated for past month; 10.9% among adults and 8.7% among children. Findings from 49 low- and middle-income countries has revealed that 15.3% of adolescents aged 13-15 years had seriously considered suicide in the past 12 months.²¹ However, in our study suicidality of low, mild and severe intensity were included and majority fell into the 'low intensity' category. The prevalence of current suicidality among adults was higher in our study compared to the findings from India national mental health survey (6%).⁹In our study, 1.4% of the participants in each group were found to have severe suicidality. These participants were referred to the nearest health facility where mental health services are available.

The major strength of this study is that we used internationally validated brief structured psychiatry interview questionnaire including 15 and 23 mental disorders for adults and children respectively. This pilot study has provided guideline for the planning and implementation of national mental health survey, Nepal. Our study has some notable limitations. First, the findings are not generalizable outside the study areas. Second, this study does not include population residing in institutional settings such as hospitalized population, imprisoned population etc. Third, since mental illness is associated with stigma in Nepal, there is possibility of underreporting of mental illness. Fourth, having some level of competency in comprehending Nepali language was one of the prerequisite for being included in the sample. Fifth, our findings cannot be generalized to children below 13 years who form a major population block.

CONCLUSIONS

Though not generalizable, the findings from this pilot study signal the higher prevalence of mental disorders in Nepal and justify the need of a nationwide prevalence survey of mental disorders. These preliminary findings can be utilized for effectively planning and conducting the national level survey.

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