

A Nationwide Prevalence of Common Mental Disorders and Suicidality in Nepal: Evidence from National Mental Health Survey, 2019-2020

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ABSTRACT

Background: Mental disorders account for a large portion of burden of disease. In Nepal, the prevalence of mental disorders has been rising steadily, but national and province level prevalence is not available. This study aims to assess the prevalence of common mental disorders and suicidality in Nepal.

Methods: We conducted nationwide descriptive cross-sectional community-based prevalence study of mental disorders and suicidality among adults (aged 18 years and above) and adolescents (aged 13 to 17 years) in Nepal. We included a total of 9200 adults and 5888 adolescents from seven provinces of Nepal by using a multistage Probability Proportionate to Size sampling technique. Mental disorders and suicidality were assessed using translated and adapted Nepalese version of Mini International Neuropsychiatric Interview (MINI) for disorders, English version 7.0.2 for Diagnostic and Statistical Manual of Mental disorders, 5th Edition (DSM-5). Data were entered in CSPro v7.2. Weighted estimates for different mental disorders were calculated.

Results: The overall weighted lifetime prevalence of any mental disorder among adults and adolescents was estimated at 10% and 5.2%, respectively. Suicidality was present among 7.2% of the adult and 4.1% of the adolescent participants. Among adult participants, the current prevalence of suicidal thoughts and lifetime suicidal attempts were found to be 6.5% and 1.1%, respectively.

Conclusions: This survey indicated that mental health problems are major public health concerns in Nepal that should not be overlooked. Hence, a multisectoral approach is needed to address the burden of mental health problems among adults and adolescents in Nepal.

Keywords: National Mental Health Survey, Mental Disorder, MINI, Suicidality, Nepal

INTRODUCTION

Mental disorders are one of the most pressing issues of the world currently and cause significant burden of disease.^{1,2} Likewise, around 9% of people report having serious thoughts of suicide, and 3% of them actually make a suicide attempt at some point in their lives³ and consequences of these have huge economic and societal costs.⁴ In Nepal, mental health disorders account for 7% of the total disease burden and 18% of the total disease burden due to non-communicable diseases.⁵ Findings of pilot study showed the current prevalence of mental disorders among adults and adolescents to be 13.2% and 11.2%, respectively.⁶ Similarly, the prevalence of emotional and behavioral problems in school children (6-18 years) was 18.3%, and the prevalence range

between 12.9% and 17.03% in general school children.^{7,8} Alarming, the pilot study have reported that the current suicidality was present among 10.9% adults and 8.7% children.⁶ This study aims to assess the prevalence of mental disorders and suicidality at national and province levels in Nepal.

METHODS

The National Mental Health Survey (NMHS) was a descriptive cross-sectional community-based prevalence study in which data was collected from January 2019 to January 2020. The sample size was determined by taking reference to the pilot survey, which showed the prevalence of mental disorders among adults and adolescents to be 13.2% and 11.2%, respectively.⁶

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So, using the same prevalence value, design effect of 2, coefficient of variation of 15%, adding the non-response value of 5%, and adjusting for a round-up, we estimated the total sample size at 9200 for adults and 5888 for adolescents, adding to a total of 15,088 sample size. Among adults, sample size estimation included stratification for males and females at the province level, making a total of 4600 adult male and 4600 adult female participants.

In this study, wards were considered as the Primary Sampling Units (PSUs) that were selected from each of the seven provinces of Nepal using a Multistage Probability Proportionate to Size (PPS) sampling technique. From each PSU, we obtained the list of households and then listed the individuals from each household. Secondary Sampling Units (SSUs) were individual participants from the household who were selected using a systematic sampling technique. Mental disorders were assessed using Nepali translated and adapted paper version of MINI for psychiatric disorders, English version 7.0.2 for DSM-5. This tool was translated into Nepali language using the step-wise procedure for tools translation and was checked for its cultural appropriateness.⁹ The details on the process of tools translation can be found elsewhere.⁹ Face-to-face interview technique was adopted to collect the data, which was then entered into the software CPro v7.2. Mental disorders were regrouped and classified according to the International Classification of Disease, 10th revision (ICD-10 DCR), and DSM -5 in consultation with experts. Weighted estimates for different mental disorders were calculated using IBM Statistical Package for the Social Sciences (SPSS) version 23.

Based on the experience and recommendations from the pilot survey⁹, a total of 30 field-level data enumerators and 6 field supervisors were provided with 21 days of extensive training to improve their conceptual understanding of the disorders included in the survey as well as to improve their interview skills. While field supervisors supervised the data collection process in the field, field monitoring was done from the central level on a bi-weekly basis.

RESULTS

The complete interview response rate among adult participants of this study was 96.8%, with 0.4% partial response and 2.8% non response. Among the adult participants, those aged 18-29 years formed the predominant age group (32.15%). Half (50.51%) of the total adult participants were female. Similarly, 22.9%

of the participants were illiterate, and 30.54% were housewives. In this study, around four out of five (83.32%) participants were married (Table 1).

Table 1. Socio-Demographic Characteristics of Adult Participants.

Characteristics	Frequency	Percentage (%)
Age		
18-29	2874	32.15
30-39	2109	23.59
40-49	1555	17.39
50-59	1135	12.70
60-69	777	8.69
70 and above	490	5.48
Gender		
Male	4424	49.49
Female	4516	50.51
Education		
Illiterate	2045	22.91
Informal Education		
Less than primary	472	5.29
Primary	892	9.99
Middle School	1081	12.11
Secondary	1561	17.49
Higher Secondary	1247	13.97
More than higher secondary	417	4.67
Occupation		
Housewife	2725	30.54
Agriculture	2639	29.58
Service	705	7.90
Business	1073	12.03
Daily wage	914	10.24
Student	548	6.14
Foreign Employment	54	0.61
Others	265	2.97
Marital status		
Unmarried	1174	13.15
Married	7440	83.32
Widow/Divorced/ Separated	315	3.53

The overall weighted lifetime prevalence of any mental disorder was found to be 10%, with a current prevalence of 4.3%. A lifetime prevalence of 3% was observed for mood disorders, 0.2% for schizophrenia, schizotypal

and other delusional disorders, and 0.1% for anti-social personality disorder. The current prevalence of mood disorder was nearly half (1.4%) than that of lifetime mood disorder. Among mental and behavioral problems due to psychoactive substance use, the prevalence of alcohol use disorder and other substance use disorders (excluding tobacco) in the past 12-months was found to be 4.2% and 0.2%, respectively. The prevalence of current neurotic and stress-related disorders was 3%. Among the neurotic and stress-related disorders, the highest prevalence was seen for dissociative disorder (1%), followed by generalized anxiety disorder (0.8%), panic disorder (0.7%), phobic anxiety disorder (0.2%), and obsessive-compulsive disorder (0.2%) (Table 2).

Table 3 shows the distribution of any mental disorder among adult participants by province, age and gender. The highest burden of mental disorders was seen in province 1 (13.9%). Participants belonging to age group (40-49) years shared the highest burden (13.3%) of mental disorders compared to other age groups. While males had a higher lifetime prevalence of mental

disorders (12.4%), females had a higher prevalence of current mental disorders (5.1%).

Suicidality was assessed by a set of questions in the MINI tool that included current suicidal thoughts, lifetime suicidal attempts, and future likelihood of suicidal attempts. Suicidality (Current and Lifetime both) was observed among 7.2% of the total participants, and among them, the prevalence of current suicidal thoughts and lifetime suicidal attempts was found to be 6.5% and 1.1%, respectively. Likewise, suicidality was maximum among the respondents residing in Province 1 and Lumbini Province (10.6%). Participants aged 50-59 years had the highest percentage of (9.1%) suicidality phenomenon. Females had higher suicidality (9.2%) compared to males (4.8%). Current Suicidal thoughts were found to be highest in Province 1 and Lumbini Province (9.9%), among 50-59 years age group (8.7%), and among females (8.5%). On the other hand, lifetime suicidal attempt was found to be highest in Bagmati Province (1.7%) among the 40-49 years age group (1.7%), and among females (1.2%) (Table 4).

Table 2. Prevalence of Mental Disorders among Adult Participants.

Disorders	Prevalence	
	Lifetime (95% CI)	Current (95% CI)
Any mental disorder	10.0 (8.5-11.8)	4.3 (3.5-5.2)
Mood Disorders	3.0 (2.5 - 3.7)	1.4 (1.1 - 1.8)
Bipolar Affective (Including Manic, Hypomanic,)	0.2 (0.1-0.5)	0.1(0.1 - 0.3)
Major Depressive Disorder	2.9 (2.3- 3.7)	1.0 (0.8 -1.4)
Neurotic and Stress related Disorders (Current)	3.0 (2.5 - 3.6)	
Anxiety Disorders		
Panic Disorder	0.7 (0.6 - 0.9)	0.4 (0.3 - 0.5)
Generalized Anxiety Disorder (Current)	0.8 (0.6 - 1.1)	
Phobic Anxiety Disorder	0.2 (0.1 - 0.4)	
-Agoraphobia (Current)	0.2 (0.1 - 0.4)	
-Social Anxiety Disorder (Current)	0.1 (0.0 - 0.3)	
Obsessive Compulsive Disorder (Current)	0.2 (0.1 - 0.4)	
Post-Traumatic Stress Disorder (Current)	0.0 (0.0 - 0.2)	
Dissociative Disorder (Including current Trans and Possession disorder and Conversion disorder)	1.0 (0.7 - 1.4)	
Somatic Symptom Disorder (Current)	0.5 (0.3 - 0.8)	
Mental and Behavioural Problems due to Psychoactive Substance Use		
Alcohol Use Disorder (past 12 months)	4.2 (3.6 - 4.8)	
Other Substance Use Disorder (past 12 months)	0.2 (0.1 - 0.3)	
Schizophrenia, Schizotypal and Delusional Disorders	0.2 (0.1-0.3)	0.1 (0.1-0.3)
Anti-social Personality Disorder (lifetime)	0.1	

Table 3. Distribution of Lifetime and Current 'Any Mental Disorder' according to Demographic Characteristics among Adult Participants.

Characteristics	Total number (N)	Lifetime Prevalence (95% CI)	Current Prevalence (95% CI)
Province			
Province 1	1306	13.9 (11.0-17.4)	5.3 (3.5-7.9)
Province 2	1292	2.1 (1.1-4.0)	1.5 (0.8-2.7)
Bagmati Province	1309	12.0 (8.7-16.4)	5.9 (4.0-8.6)
Gandaki Province	1236	10.7 (8.0-14.3)	3.3 (2.2-4.9)
Lumbini Province	1268	13.0 (9.8-16.9)	5.4 (3.9-7.4)
Karnali Province	1264	11.7 (9.0-15.0)	4.6 (3.1-7.0)
Sudurpaschim Province	1265	9.5 (7.2-12.3)	3.7 (2.7-5.1)

Age group			
18-29	2874	7.4 (6.1-9.0)	3.4 (2.7-4.3)
30-39	2109	9.6 (7.8-11.8)	3.8 (2.7-5.3)
40-49	1555	13.3 (10.6-16.4)	6.3 (4.5-8.7)
50-59	1135	13.0 (10.0-16.8)	4.6 (2.8-7.6)
60-69	777	11.5 (8.6-15.2)	4.9 (3.3-7.2)
70 and above	490	7.8 (4.9-12.1)	3.7 (1.9-7.1)
Gender			
Male	4422	12.4 (10.4-14.7)	3.4 (2.6-4.3)
Female	4515	8.0 (6.5-9.9)	5.1 (4.1-6.3)

Table 4. Distribution of Suicidality as per Socio-Demographic Characteristics among Adult Participants.

Characteristics	Total Number(N)	Suicidality (95% CI)	Current Suicidal thought (95% CI)	Suicidality Lifetime attempt (95% CI)	Suicide behaviour disorder (95% CI)
Total	8929	7.2 (5.9-8.8)	6.5 (5.3-7.9)	1.1 (0.8-1.4)	0.9 (0.7-1.3)
Province					
Province 1	1304	10.6 (8.3-13.3)	9.9 (7.1-13.5)	1.1 (0.4-0.6)	0.9 (0.5 -1.8)
Province 2	1292	2.0 (1.0-4.1)	1.8 (0.8-3.7)	0.4 (0.1-1.1)	0.4 (0.1 -1.1)
Bagmati Province	1307	7.7 (6.10-9.60)	6.6 (4.7-9.2)	1.7 (1.0-2.6)	1.4 (0.9 -2.2)
Gandaki Province	1234	5.9 (4.70-7.30)	5.1 (3.8-7.0)	1.0 (0.6-1.6)	0.8 (0.4- 1.4)
Lumbini Province	1264	10.6 (7.30-15.10)	9.6 (6.5-14.0)	1.3 (0.8-2.0)	1.1 (0.7 -1.7)
Karnali Province	1263	10.4 (8.50-12.60)	9.9 (7.4-13.1)	0.8 (0.4-1.4)	0.8 (0.5 -1.3)
Sudurpaschim Province	1265	5.4 (4.3-6.6)	4.9 (3.7-6.4)	1.0 (0.6-1.6)	0.9 (0.6 -1.4)
Age group					
18- 29	2873	7.5 (6.0-9.4)	6.7 (4.8-9.2)	1.1 (0.7-1.7)	1.0 (0.7 - 1.5)
30-39	2106	6.5 (5.2-8.2)	6.0 (4.7-7.8)	0.9 (0.5-1.6)	0.6 (0.4 - 1.1)
40-49	1552	7.50 (6.2-9.1)	6.1 (4.6-8.2)	1.70 (1.00-3.10)	1.6 (0.9 - 2.7)

50-59	1135	9.1 (6.9-12.0)	8.7 (6.3-11.8)	1.1 (0.5-2.5)	1.1 (0.5 - 2.5)
60-69	776	6.1 (4.60-8.00)	6.0 (4.3-8.1)	0.6 (0.2-2.1)	0.5 (0.1 - 2.1)
70 and above	487	5.3 (3.8- 7.4)	4.8 (3.0-7.6)	0.1 (0.0-1.0)	0.1 (0.1 - 0.2)
Gender					
Male	4419	4.8 (3.8 - 6.1)	4.1 (3.1 -5.4)	0.9 (0.6-1.5)	0.8 (0.6 - 1.2)
Female	4510	9.2 (7.9 - 10.8)	8.5 (6.9-10.4)	1.2 (0.8- 1.7)	1.0 (0.7 - 1.4)

Table 5. Prevalence of Mental Disorders among Adolescent Population.

Mental Disorders	Percent (95% CI)
Any mental disorder	5.2 (4.2 - 6.4)
Mood disorder	0.8 (0.5 - 1.1)
Bipolar Affective Disorder	0.2 (0.1 - 0.4)
Major Depressive disorder	0.6 (0.4 - 1.0)
Neurotic and stress-related disorder	2.8 (2.0 - 3.8)
Phobic Anxiety disorder	1.3 (0.8 - 2.1)
Dissociative Disorder	0.5 (0.3 - 0.9)
Substance Use Disorder	0.6 (0.4 - 1.0)
Any Psychotic Disorder	0.3 (0.2 - 0.6)
Behavioural and Emotional Disorders	1.0 (0.7 - 1.4)
Eating Disorders	0.5 (0.3 - 1.0)
Somatic Symptom Disorder	0.0 (0.0-0.2)

The severity of suicidality with the symptoms of current suicidal thoughts, lifetime suicidal attempt and future likelihood of suicidal attempt were classified as low, moderate and high. The percentage of adult participants with low severity of suicidality was 6.3%, whereas the percentage of participants with moderate and high suicidality was 0.3 % and 0.6%, respectively.

The prevalence of any mental disorder among adolescents was found to be 5.2%. Neurotic and stress-related disorders were most prevalent (2.8%) in this population. However, the prevalence of major depressive disorder was observed to be less than one percent (0.6%) (Table 5).

Table 6. Distribution of Any Mental Disorder as per Socio-Demographic Characteristics among Adolescents Participants.

Characteristics	Percent (95% CI)
Province	
Province 1	11.4 (7.40 -17.1)
Province 2	1.7 (0.5 - 5.9)
Bagmati Province	4.4 (2.9 - 6.6)
Gandaki Province	5.1 (3.5 -7.3)
Lumbini Province	6.1 (4.7 -7.9)
Karnali Province	4.9 (3.4 -7.0)
Sudurpaschim Province	3.9 (2.4 - 6.2)
Gender	
Male	5.0 (3.6 - 6.9)
Female	5.3 (4.2 - 6.7)

Table 7. Prevalence of Suicidality and Suicide Behaviour Disorder among Adolescents.

Suicidality and Suicide Behaviour Disorder	Percent (95% CI)
Suicidality	
Current suicidal thoughts	3.9 (3.1 - 5.0)
Future likelihood of suicidal attempt	0.5 (0.3 - 1.0)
Lifetime Suicide Attempt	0.7 (0.4 - 1.1)
Severity	
Low Suicidality	3.1 (2.4 - 4.0)
Moderate Suicidality	0.3 (0.2 - 0.6)
High Suicidality	0.7 (0.4 - 1.2)
Suicide Behaviour Disorder	0.5 (0.3 - 0.9)

Table 6 displays the prevalence of any mental disorders among adolescents by province and gender. The prevalence of mental disorders was highest among

adolescents residing in Province 1 (11.4%) and among females (5.3%).

From the study, suicidality was observed among 4.1% of the participants. Likewise, 3.9% of adolescents had current suicidal thoughts, and 0.7% of them had attempted suicide in their lifetime. In addition, it was found that 0.5% of adolescents had a future likelihood of committing suicide (Table 7).

DISCUSSION

The NMHS of Nepal is the first comprehensive population-based survey to assess mental disorders in Nepal. The overall weighted lifetime prevalence of any mental disorder among the adult population was found to be 10%, which means that one out of every ten adults in Nepal has one or more mental morbidities. The national prevalence estimate for Nepal is comparable with the findings from the Indian mental health survey (13.7%), where the MINI tool was used to assess the disorders.¹⁰ The World Mental Health Survey (2009) reported a relatively higher prevalence of mental disorders (18.1-36.1%) compared to our finding.¹¹

Our finding of the current prevalence of any mental disorder among adult participants (4.3%) is less than that reported in neighbouring countries of India (10.5%)¹⁰ and China (17.5%).¹² Our prevalence estimate is also less than that of South Africa (16.5%).¹³

This study revealed the lifetime prevalence of mood disorder as 3.0% and current prevalence as 1.4% among adults, which is similar to the findings of Nigeria (3.3%, 1.1%) and China (3.6%, 1.9%), respectively.¹¹ Similarly, our finding of the current prevalence of mood disorder is comparable with that of the National Mental Health Survey of India (2.8%).¹⁰

This study revealed the prevalence of alcohol use disorder as 4.2% and other substance use disorders (excluding tobacco) as 0.2% among adults, which are approximately similar to the findings of South African Studies.¹³ It is important to note that the prevalence of tobacco use is high in Nepal, and in this study, tobacco use disorder was not included. According to the STEPS survey conducted in 2019 in Nepal, among 15-69 years of population 28.9% had used tobacco in the past year.¹⁴ From this study, the prevalence of current panic disorder, generalized anxiety, social anxiety disorder, agoraphobia disorder, and post-traumatic stress disorder were reported as 0.4%, 0.8%, 0.1%, 0.2%, and 0.6%, respectively. These findings contradict that of African

studies, where the prevalence of these disorders are relatively higher.¹³ The prevalence of current neurotic and stress-related disorders were observed to be 3%. This finding approximately coincides with the findings of India (3.7%).¹⁰

In this study, the prevalence of any mental disorder among adolescents was observed to be 5.1% which contradicts the findings of the study conducted in the Goa state of India. The prevalence was much lesser (1.8%) than observed in Nepal. This difference may be due to variation in the time frame considered while obtaining prevalence rate from the data.¹⁵

This study findings revealed that about 7.2% of the Nepalese adults have suicidality phenomenon in their lifetime, which is higher than that of India, which reports the prevalence of suicidality phenomenon in any form during the past month as 5.1%.¹⁶ This might be due to the variation in time frame considered while obtaining data. However, the prevalence is lower than the cross-national lifetime prevalence of suicidal ideation, which was carried out in 17 countries of different regions of WHO.^{16,17} Overall, suicidality was higher among female (9.2%) as compared to male (4.8%). It is similar with the data of Nigeria and India on suicidality as reported by National Mental Health survey of respective countries.^{16,17} The prevalence of suicidality was higher (9.1%) among the 50-59 years aged population as compared to India, where it is most prevalent among 40-49 years (6.0%).¹⁶ Additionally, the prevalence of low, moderate and high levels of suicidality were obtained as 6.3%, 0.3% and 0.6%, respectively, which is lower than the suicidal severity reported by Mental Health Survey of India where the prevalence of low, moderate and high suicidal severity is 3.5%, 0.7% and 0.9% respectively.¹⁶

Among adolescents, the prevalence of suicidality was found to be 4.1%, 3.9% had current suicidal thoughts, and 0.7% of them had attempted suicide in their lifetime. On the contrary to this finding, the study conducted in Mexico, showed the life time prevalence of suicidality as 11.5%, and suicidal attempt as 3.1% which is much higher than observed in this survey. This difference might be due to the variation in the time period considered for data collection.¹⁸ Phobic anxiety disorder among adolescents was observed to be 1.3%. Contrary to this finding, a study conducted in India showed higher prevalence (7.9%).¹⁹

Among the provinces, the prevalence of mental disorders was found to be lowest in Province 2, which we believe grossly underreported because of different

reasons which need to be explored in further studies. As a result of this, the national prevalence was found lower than that of pilot-study in Nepal⁶ as well as Indian mental health survey where MINI tool was used to assess the disorders.¹⁰

One of the key strengths of the survey was the use of a standardized survey tool. Apart from that, the large representative sample from all seven provinces, stringent training of research assistants before fieldwork, quality assurance in the form of monitoring by supervisors were other strengths of this study.

There are a few limitations to this study. No formal translation of the questionnaire was done in the local language of Nepal except Nepali, which could be one of the reasons for low prevalence rate in province 2 where the local language is spoken more than Nepali. Also, the institutionalized population of homeless and prisoners were not taken into consideration. One major limitation for the generalizability for all ages is the exclusion of children below 13 years of age.

CONCLUSIONS

This is the first comprehensive survey to assess mental disorders and suicidality in Nepal, which has remained as the “submerged portion” of the iceberg. This survey clearly indicated that mental health problems are the major public health problem. The lifetime prevalence of mental disorders and suicidality is higher among adult participants. This baseline information would be of great value to develop multisectoral suicide prevention strategies and for mental health reforms in the country.

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