Common Mental Disorders and Substance Use in School Children of Eastern Nepal

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Abstract

Introduction: *School mental health is one of the important areas where early detection can lead to appropriate early intervention and burden of disease can be minimized. There is dearth of prevalence studies of common mental disorders on school going adolescents in Nepal. Considering this we aimed to study the prevalence of common mental health problems and substance use in school going adolescents.*

Material And Method: *We evaluated 240 students for common mental disorders (depression and anxiety) using translated version of PHQ-4 and substance use single validated question after taking consent from school authorities and assent from students.*

Results: *It was seen that 68.8 % students had psychological distress. 22.9 % and 27.5% of students had anxiety and depression respectively on screener and 23.3% students had use of substance at least once within a year. When compared male had significantly higher number of substance use as compared to female but no difference in PHQ-4 scores were seen when compared between gender and history of substance use.*

Conclusion: *The study shows the current scenario of school going adolescents in Nepal and highlights the need of prevalence data on more generalizable setting.*

Keywords: School Mental Health, Prevalence, Nepal

INTRODUCTION

Child and adolescent mental health problems are a major contributor to global burden of disease and health-related disability of disease.[1] Half of the cases of mental disorders develop by the age of 14 years, although most remain undetected and untreated until later in life.[2] Investigating the global and country-level burden attributable to mental and substance use disorders in children and youth is important from both epidemiological and global health policy standpoint, particularly given the large proportion of children and youth living in lower and middle income countries (LMICs).[3] South-East Asian Region with one quarter of the world's population has a significant burden of mental illness but low priority is given in most countries of the region.[4] In Nepal, around 40% of the total population is 16 years or younger.[5]

When we look at the prevalence data, mental health problems affect 10–20% of children and only 10% of such trials come from low-income and middle-income countries.[6] Nepal lacks national level prevalence data on mental disorders.[7] Another significant problem in school children is substance use. Although not well studied in lower income countries like Nepal, substance use is often initiated in adolescence and accounts for a substantial proportion of the disability burden faced by adolescents.[8] It is a well-known fact that delivering mental health services through the school system can address key financial and structural barriers that often prevent children from receiving services.[9] Considering the dearth of data in Nepal regarding school mental health, we aim to study the prevalence of mental health problems

(depression and anxiety) and substance use in a school of Eastern Nepal using screening questionnaires.

MATERIAL AND METHOD

We undertook a cross-sectional study in government schools of Inaruwa municipality of Sunsari district of Nepal. All the schools of the said municipality were listed and three schools were selected randomly via lottery method. For sample size, we used the formula: Sample Size (N) = $(Z^2 \times p \times q)/ M^2$; where, p = estimated prevalence q = 1- p, M = Margin of Error (0.05), Z = constant value = 1.96. The estimated prevalence of 11% was taken from the recently published pilot study of Nepal.[10] The calculated sample size was 150 but we wanted to include all the available adolescent students from these schools, hence, 240 students were taken. The students who were busy in school assessments were not taken. The information about the study was provided to all the students and any student not willing to participate were excluded. The identity of participants was kept confidential. However, basic awareness session of ten minutes was given to all the students about mental illnesses and drug use and were suggested to visit a mental health professional if they had significant problem. All of the students in class 9, 11 and 12 were willing to take part in the study. Whole of class 10 was excluded as they were busy in schools' assessment. The permission for the study was taken from the principal of each school. Assent was taken from the students. The ethical clearance was taken from the departmental research unit under institutional review committee of B.P. Koirala Institute of Health Sciences, Dharan, Nepal. The data collection was conducted between the periods of 12th December 2017 to 24th December 2017.

Tools Used:
i. *Demographic Profile*: Basic demographic details like age, gender, religion, education etc. were taken using the semi-structured proforma.
ii. *PHQ-4*: This four-item scale consists of two core criteria each for depressive disorder and generalized anxiety disorder and is regarded as ultra-brief tool for detection of depression and anxiety.[11] PHQ-4 total score ranges from 0 to 12, with categories of psychological distress being: None: 0-2; Mild: 3-5; Moderate: 6-8; Severe: 9-12. On each depression and anxiety subscale, a score of 3 or greater is considered positive for screening purposes. Study from general population support the reliability and validity of this scale.[12] It also has good reliability and validity in young adults and has a potential to be used as a mass screener for depression and anxiety in this group.[13]

iii. *Drug Use question*: This is a single question asked to the participants. "How many times in the past year have you used an illegal drug or used a prescription medication for nonmedical reasons?" A response of at least 1 time is considered positive for drug use.[14] This single question has been found to be effective in accurately identifying drug use especially in primary care.[15] In our study we described to the students while taking consent that use of any kind of substance like tobacco, alcohol, cannabis or opioids should also be taken as drug use. This was enlisted in the Nepali version of questionnaire as well.

Both the tools were translated into Nepali language using the WHO method[16] consisting of (a) establishment of a bilingual group of experts, (b) examination of the conceptual structure of the instruments by the experts, (c) translation, (d) examination of the translation by the experts, (e) examination of the translation by a monolingual group, (f) blind back- translation and (g) examination of the blind back-translation by the experts.

RESULT

As seen in table 1, the mean age for the participants was 16.66 years (SD = 1.79 years). Among the students, majority (61.7%) were male. Maximum number of students (96.3%) followed Hinduism. 90, 93 and 57 students were in class 9, 11 and 12 respectively. The PHQ-4 scores showed around half (49.6%) students to have mild symptoms and 16.7% and 2.5% had moderate and severe symptoms respectively. 22.9 % of students were screen positive for anxiety and 27.5% were screen positive for depression. Among the students 23.3% had a history of drug use. When compared between males and females, it was seen that the history

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of drug use was significantly more in males as compared to females (p=0.01). However, the PHQ-4 scores compared between male and female using Mann-Whitney U test showed no difference (p=0.60). Similarly, there was no difference in PHQ-4 scores when compared between drug users and non-users.

Table 1: Socio-demographic Profile, PHQ-4 and Substance Use

Age (years)	16.66 (SD= 1.79)
Gender	
Male	148 (61.7%)
Female	92 (38.3%)
Religion	
Hindu	231 (96.3%)
Muslim	8 (3.3%)
Christian	1 (0.4%)
Education	
Class 9	90 (37.5%)
Class 11	93 (38.8%)
Class 12	57 (23.8%)
PHQ4	
Normal	75 (31.3%)
Mild	119 (49.6%)
Moderate	40 (16.7%)
Severe	6 (2.5%)
Drug Use	
Yes	56 (23.3%)
No	173 (72.1%)
Didn't report	11 (4.6%)
Screening	
Anxiety	55 (22.9%)
Depression	66 (27.5%)

Table 2 : Gender Differences in Substance Use

Gender	Substance Yes	Substance NO	Fisher's Exact Significance
Male	44	103	P=0.01*
Female	12	70	

Table 3: Association Of Gender and substance use with PHQ-4 Score

Variables	Mean Rank for PHQ4 score	Mann-Whitney U Test
Gender		
Male	122.31	U=6539.5, Z= -0.519
Female	117.58	P=0.60
Drug use		
Yes	117.20	U=4721, Z= -0.288
No	114.29	P=0.78

DISCUSSION:

The mean age of the school children of 16.66 years was seen with preponderance of male students. Though the census data suggest male and female ratio to be comparable (1.02)[5], the female being less in number suggests less literacy rate and higher drop outs as compared to male. The PHQ-4 data suggests total of 68.8% of the students had some psychological distress, however among them majority 49.6% had mild distress. This data is higher than prevalence data from big and robust studies[17, 18] which used tools for diagnosis rather than tools for screening. It is a well-known fact that the prevalence of anxiety and depression accounts for around half of the psychiatric diagnosis in adolescent group of population[19], our study using PHQ-4 has screened these two common mental health problems. The important fact to be taken into account is that we have used only the screening instrument for depression and anxiety rather than the diagnostic tools. Though the study shows the prevalence of 22.9% of anxiety and 27.5 % of depression; the real prevalence is likely to be lower due to possibility of high false positive rate in absence of confirmation of diagnosis. The finding that 23.3% were screened positive for some kind of drug use using the "drug use question" is comparable to the studies done in Iran and Turkey[20, 21] but it was less than the study done in Nigeria.[22] There was significant difference between male and female in substance use i.e. percentage of male were more as compared to female in using substance and this finding is similar to the studies done in other high school

students.[20, 23] When we looked at PHQ-4 scores there was no differences between the genders. The majority of studies show that the substance use and psychiatric illnesses have higher rate of comorbidity[24, 25], however, no difference in the PHQ-4 scores with substance use was seen in our study.

This is one of the very few studies from Nepal in school going adolescents. There are some limitations to this study. The major limitation is the use of PHQ-4 in adolescents. Though the tool has been used in young adults it has not been used among school going adolescents. The questionnaires are also not validated in the school population of Nepal. Similarly, a cross sectional application of screening instruments doesn't give a diagnosis. The school of a municipality in eastern Nepal might not be representative of all the schools of country. However, the study could play an important role in laying foundation for further studies as the findings here give some idea about the problem statement.

CONCLUSION:

The problems of mental health and substance use in school going children of Nepal is comparable to other countries worldwide. The methodology of our study could be replicated in screening the common mental disorders (anxiety and depression) and use of substance. The school mental health programs that are need of lower income countries could be initiated on the base of prevalence data like ours in future.

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