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Assessment of Mental Health Problems of School Children Aged 11-17 Years Using Self Report Strength and Difficulty Questionnaire (SDQ)

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Abstract

Introduction: It is now recognized that psychological disorders, among children and adolescents have high prevalence rate. Currently, there is limited data on the prevalence of mental health problems among adolescents especially in the developing country like Nepal. The objective of this study was to investigate the prevalence of mental health issues among school children aged 11-17 years. **Materials and Methods:** The self rated version of Strength and Difficulty Questionnaire (SDQ-YR1) were given to the students and answers were collected and the data was analyzed using SPSS version 16.1. The questions were in the Likert scale 0(not true), 1(somewhat true) and 2(certainly true). The data collected also included parent's educational and occupational status. **Results:** A total of 159 students participated in the study after receiving well informed consent from the parents. There were 96(60%) boys and 63 (40%) girls' participants in the study. Among all the participants in this study 18.6% had a total-Strength and Difficulty Questionnaire (SDQ) score that can be classified as abnormal by published cutoffs. The emotional problems (24.5%) and peer relationship problem (22%) were the two common problems screened as an abnormal SDQ score. Girls were significantly more likely to have emotional problems than boys (p value <0.05) where as boys were significantly more likely to have Hyperactivity/inattention score in SDQ than girls (p value<0.05).Gender difference was also significant statistically as girls had higher abnormal total SDQ score than boys (p value < 0.05). **Conclusion:** There is high prevalence of mental health issues in children but a study in large sample is recommended.

Key words: School children, SDQ, Mental health, emotional problem, ADHD, Conduct disorder.

Introduction

It is now recognized that psychological disorders, among children and adolescents have high prevalence rate. Over the past decades the public health relevance of mental health conditions in children and adolescents has been of growing concern for everyone[1]. In the last century, there had been considerable changes in the nature and pattern of health problems affecting children, and one of the most striking of these changes is the growing importance of mental disorders as a source of childhood morbidity[2]. Currently, there is limited data on the prevalence of mental health problems among adolescents especially in the developing country like Nepal. The Strengths and Difficulties Questionnaire (SDQ) is one of the most commonly used instruments for screening psychopathology in children and adolescents[3]. There is a consensus opinion that children and adolescents living with adversities and the experience of psychosocial difficulties are more vulnerable to have psychological and behavioral problems. But these inferences are mostly taken from the researches done in affluent and developed countries[4,5,6].

Materials and Methods

Participants were School children of grade six, seven, eight and nine, aged 11-17 years from one of the private school in Biratnagar where the medium of instruction was English. Pretested questionnaire were administered to the target students. Data was also collected about the educational and occupational status of both the parents.

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The following tools were used: *The Strength and Difficulties Questionnaire (SDQ).*

The SDQ is an instrument that has been widely used to assess mental health problems, emotional and behavioral problems and strength among children and adolescents[7]. The final conclusion on the presence or absence of mental health problems as measured by SDQ is ideally computed from the combined reports from parents, teachers, and self-report by child[8]. However, self reports may be sufficient screening tool for adolescents aged 11 years or older[9]. The clinical usefulness of SDQ in identifying mental health problems in adolescents has been established, with a reliability and validity that is as good as that of Child Behavior Checklist[10]. The Self rated SDQ possesses 25 items in the following 5-item scales: emotional and conduct problems, hyperactivity/ inattention, peer relationship problems, and pro-social behavior. Each item is scored on a 3-point scale (0 not true; 1 somewhat true; 2 certainly true) and the sum of all answered items in a scale creates its total score (possible range, 0–10), whereas the sum of all answered items in the first 4 scales creates the total overall score (possible range, 0–40). The higher the total score is the larger the difficulties are. The SDQ total scores could be considered as "normal" (range, 0–15), "borderline" (range, 16–19), and "abnormal" (range, 17–40), indicating the presence of general psychopathology. For the subscales, abnormal scores were taken as follows: emotional scale and hyperactivity/inattention range, 7 to 10; conduct problems range, 5 to 10; peer relationship problems range, 6 to 10; and pro-social behavior range, 0 to 4. The abnormal SDQ score in any area indicate substantial risk of clinically significant problem in that area[11].

The diagnostic predilection: The information provided by respondents is used to predict how likely a young person is to have emotional, behavioral or concentration problems severe enough to warrant a diagnosis according to the ICD-10 or DSM-IV classifications. For each diagnostic grouping, there are three possible predictions: 'low risk', 'medium risk' and 'high risk'. In general, these predictions agree fairly well with what an expert would say after a detailed assessment of the young person. Around 25-60% of young people who are rated as 'high risk' do turn out to have the relevant diagnosis according to experts. So do around 10-15% of 'medium risk' young people but only about 1-4% of 'low risk' young people.

All adolescents were informed about the aims and procedures of the study. Those participants who were 16 years and older signed consent forms whereas the younger participants got their consent form signed by their parents and returned to the data collector.

Results

General Sample Characteristics

A total of 159 children and adolescent participated in the study and successfully completed the self rated Strength and Difficulty Questionnaire with impact supplement (YRS). The mean age of the participant was 14.11 years with minimum age of 11 years and maximum of 17 years. There is preponderance of male students 96 (60%) and female participants were 63 (40%). Regarding employment status 93% of fathers were employed where as 28% of mothers were unemployed.

Table 1: Characteristics of the sample population:

Variables	N=159(100%)
Gender	
Male	96(60.4%)
Female	63(39.6%)
Grades of students	
Grade six	13(8%)
Grade seven	48(30%)
Grade eight	14(9%)
Grade nine	30(19%)
Grade ten	54(34%)
Employment status of mother	
Employed	44(28%)
Unemployed	115(72%)
Employment status of Father	
Employed	148(93%)
Unemployed	11 (7%)

Self rated mental health status

A mean of 26.4% of all the adolescents, in this study, had a total-Strength and Difficulty Questionnaire (SDQ) score that can be classified as abnormal by published cutoffs. There was statistically significant gender difference noted across the domain of impact of the difficulties in young person's life, where girls were significantly more likely to have impact of difficulties (p value < 0.05). The percentage of students having an abnormal SDQ score across emotional problem domain was 24.5 while it was 22%, noted across peer relationship problem area.

Girls were significantly more likely to have emotional problems than boys (p value <0.05). In contrast to this, boys were significantly more likely to have Hyperactivity/inattention score in SDQ than girls (p value<0.05). Gender difference was also significant statistically in terms of girls having high abnormal total SDQ score. The gender difference was not statistically significant in the domain of conduct problem, peer relationship problem and pro-social behavior.

The data was analyzed using official online software to find out the predicting capacity of the SDQ to meet mental health diagnosis meeting DSM-IV criteria. The prediction of having any mental health diagnosis in the study population was 20.1%, which means there is a 25-60% chance of them receiving any of the DSM-IV mental health diagnosis if evaluated by an expert.

Discussion

This study investigated the prevalence of mental health illnesses in the school children and adolescents aged 11-17 years using the Strength and Difficulty questionnaire. Our study population comprised of 60% boys and 40% girls. The percentage of fathers who were employed was ninety three but only twenty eight percentages of mothers were employed.

As it was a pilot study in a relatively small sample size, it has its limitations to generalize its finding to the whole population; still the findings of this study are worth discussing as there is no such study done in Nepal to look at mental health status of school children. This study has clearly indicated that there is high prevalence (25%) of mean value of abnormal total-Strength and Difficulty Questionnaire (SDQ) score as per cut off set by different studies. Olyanka et al evaluated the prevalence, pattern, and socio-demographic correlates of self-reported mental health problems among a pilot sample of adolescents from 5 developing countries. In that study the prevalence of mean abnormal total difficulty score was 10.5%(5.8-15) and this value was lower than the findings of our study where it is 25%[12].

There are few studies around the world where higher prevalence rates of abnormal total SDQ scores have been reported and our study has findings comparable to those studies. In a study done in Brazil, a total abnormal SDQ score prevalence was 18% and In Iran it was 20%.[13'14]There was another study done in Andhra Pradesh, India where 22.43%of children had abnormal SDQ at least in one domain[15].

We noted high abnormal SDQ scores across the two domains of emotional problems (24.5%) and peer relationship problem (22%).There is statistically significant gender difference noted in case of abnormal rating in the area of emotional problem and total abnormal SDQ score, as girls rating higher than the boys (p value<0.05). Dutch girls had significantly higher values on the emotional symptoms and pro-social behavior subscale, while boys scored higher on the conduct problems scale[16]. Similarly, in a study done in Finland where girls of grade 7th and 9th scored much higher than boys on emotional symptoms and pro social behavior[17].

Table 2: Gender wise Distribution of Clinical Ranges of (SDQ) Scores among Participants

SDQ Clinical Ranges (Dichotomized)	Gender Distribution (n =159)		
	Male	Female	*p* value
Emotional problem score			
Normal/borderline (n 120; 75.5%)	78 (81%)	38 (51%)	<0.05*
Abnormal (n 39; 24.5%)	18 (19%)	18 (49%)	
Hyperactivity/inattention score			
Normal/borderline (n 131; 82.4%)	74 (84%)	57 (90.5%)	<0.05
Abnormal (n 28; 11.6%)	22 (16%)	6 (9.5%)	*
Conduct problem score			
Normal/borderline (n 133; 83.6%)	81 (84%)	57 (90.5%)	0.27
Abnormal (n 26; 16.4%)	15 (16%)	6 (9.5%)	
Peer relationship problem score			
Normal/borderline (n 124; 78%)	78 (81%)	46 (73%)	0.22
Abnormal (n 35; 22%)	18 (19%)	17 (27%)	
Pro-social score			
Normal/borderline (n 147; 92.4%)	86 (89.5%)	61 (97%)	0.09
Abnormal (n 12; 7.6%)	10 (10.5%)	2 (3%)	
Difficulty with young person's life			
Normal/borderline (n 121; 76%)	78 (81%)	43 (68%)	0.06
Abnormal (n 38; 24%)	18 (19%)	20 (32%)	
Total score			
Normal/borderline (n 119; 69%)	79 (87.5%)	40 (56%)	<0.05
Abnormal (n 40; 25%)	17 (12.5%)	23 (44%)	*

*p value<0.05 indicates significant at CI of 95%.

In our study the boys have rated higher than girls in the domain of hyperactivity and inattention which is statistically significant (p value <0.05). These findings are similar to the findings from a study done in Pakistani school children where boys had higher estimates of behavior or externalizing problems but emotional problems were found more amongst girls[18]. This finding of gender differences in the prevalence of mental health problem in children and adolescent is different from the findings in other studies[19]. Ravens-Sieberer et al reported that gender differences in the prevalence rates of mental health problems among children depend on children ages, with differences more apparent in the younger age groups[20].

This study highlights that there is a need to screen school children and adolescent for mental health problems, not identifying and addressing these problems may have detrimental effect on their academic performance and on potential adult life. In developing country like Nepal mental health disorders can be a product of disadvantaged societies, poverty, political unrest, violence of all kinds and adverse living condition of the vulnerable children and adolescent.[14]

Conclusion

This pilot study has demonstrated that there is high prevalence of mental health problems in school going children and adolescents. As there was small sample size in this study, question can be raised about its external validity. Hence further research with adequate sample size using appropriate tools is recommended.

Limitations: A major limitation to this study is that the reports from parents and teachers were not taken and the sample population was not very representative as well. There is a need for some systemic studies that will explore the prevalence of mental health problems in Nepal, which will help to guide our future mental health planning.

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