

Psychiatric Disorders among 14-17 Years School Going Bangladeshi Adolescents

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ABSTRACT

Adolescence is a fertile age for developing psychiatric disorders yet attention to their mental health is not up to the mark in Bangladesh. No prevalence study has yet been carried out on mid adolescents' population in Bangladesh using sound methodology. This study was aimed to delineate the overall and gender prevalence of psychiatric disorders and its subclasses and to find out the relation between socio-demographic variables with psychiatric disorders in a school sample in Dhaka city. This is a two-staged, cross-sectional study. Through purposive sampling, 315 adolescents aged from 14-17 years were given structured questionnaire included socio-demographic variables and validated self-version of Bangla Strengths and Difficulties Questionnaire. In the diagnostic phase, 67 subjects were interviewed with the Development and Well-Being Assessment questionnaire for DSM-5 diagnosis. The boy-girl ratio was 1.5:1. Most of the subjects (82.9%) were in the secondary level education and 94.6% were from middle income group. Nuclear and joint family was 83.8% and 16.2% respectively. Any form of psychiatric disorders was found to be 18.7% (17.46% in boys and 20.63% in girls). Among them, Major Depressive Disorder, Specific Phobia, Social Anxiety Disorder, Oppositional Defiant Disorder, ADHD, Obsessive-Compulsive Disorder, Generalized Anxiety Disorder and Conduct Disorder were more prevalent respectively. Further analysis revealed that girls had more Emotional Disorder and Behavioral Disorder was found more in boys. There were no associations between socio-demographic variables and psychiatric disorders except those who came from joint family and that was significantly higher with psychiatric disorders than nuclear family. Our results support the similar type of previous studies. As adolescents play a vital role in the society, special attention must be provided to them.

Keywords

Adolescents, Bangladesh, Psychiatric disorders.

Introduction

Adolescents play a vital role in any society. They are also at a critical point to develop mental health problems. Most of the psychiatric disorders of adolescence are either continuations of childhood disorders or early manifestations of adult disorders. However, adolescence is not just a blend of childhood and adulthood; it is a stage with unique biological and social characteristics of its own that color both normal and abnormal behavior during teenage years. Here, adolescents are coping up with many things, such as society, biological changes, family, and friends. Adolescent's mental health problems are increasing. A good percentage of people develop at least one psychiatric disorder before late adolescence [1]. Overall, median rate of psychiatric disorders among adolescents is 15%

[2]. In developed countries, the prevalence of psychiatric disorder among the adolescents is ranged from 11 to 27% [3-8].

In developing countries, few representative studies reported the nearly similar range of prevalence of psychiatric disorder in this population which is 13 to 20% [9-12]. A few epidemiological studies on child and adolescent psychiatric disorders were carried out in Bangladesh and the prevalence of psychiatric disorder ranged from 15-20% [13-15] but there is no such study targeting only adolescent population. Increased rate of psychiatric disorders with the increased age have also been reported in these studies. Variation of prevalence rate is mainly due to differences of study design, age range, sampling technique, defining cases, informants, assessment methods and measures, and cross-cultural influence. In addition, time trends are also important issues in overall and specific prevalence of psychiatric disorders [16].

In terms of specific psychiatric disorder, adolescents suffer more from Anxiety Disorder, Major Depression, Conduct Disorder and Social Phobia [7,17]. Further, they have increasingly prone to crime, substance abuse, suicide and eating disorder as they are sensitive to psychosocial circumstances [16]. The result of one survey report of Great Britain found that Conduct Disorder (6.2%), Emotional Disorder (5.6%) and any Anxiety Disorder (4.6%) are most prevalent among 11-15 years old children [8].

Among the adolescents, there is also gender difference of prevalence of psychiatric disorder and its subclasses. Some studies found higher preponderance among boys [8,17], some studies found almost equal in both genders [7] and also found higher among girls [18,19]. It has been observed that the trend of gender differences of prevalence is changed across the ages; higher among boys in early period and that is increased significantly with age among girls. In broad category, Behavioral Disorders were found higher among boys, conversely, Emotional Disorders found higher among girls [17,20]. In terms of specific Psychiatric Disorder, Conduct Disorder and Attention-Deficit/Hyperactivity Disorder (ADHD) were more prevalent among boys [8,20,21]. On the other hand, girls have higher prevalence of Depression, Persistent Depressive Disorder, Somatoform Disorder and Anxiety Disorder [8,12].

As the adolescence is more critical period of life related with transition to adults and also associated with turmoil, they are vulnerable group of developing psychiatric disorders and its continuity throughout the adulthood that have serious adverse impact on their life. Early identification and intervention of the disorders could prevent or minimize this impact. Farther, identification of risk and resilient factors will help in preventing the disorders. There is limited data on epidemiological study of psychiatric disorder among the late teens over the Globe and no such data in Bangladesh has yet been reported. We hypothesized that Psychiatric Disorder is highly prevalent in adolescents and there are higher prevalence of Behavioral Disorders among boys and Emotional Disorders among girls. Therefore, the aim of the study was to determine the prevalence, types of Psychiatric Disorders among 14 to 17 years school going adolescents in a school sample, to compare these findings by gender, and to find out the any possible association between socio-demographic variables and Psychiatric Disorders.

Methods

This was a two-staged, cross-sectional study carried out among adolescents in a school in Dhaka city. The school was located in a moderately prosperous urban residential area where most families were of medium socioeconomic status, and adolescents of targeted age group usually attended school. Both boys and girls were available for recruitment as it was coeducational school and had up to 12 grade educational facilities. It was chosen after informal local consultation at least as one of the representative schools of that area. All available 9 to 12 grade boy and girl students aged between 14 to 17 years were included in the study. There were no exclusion criteria. Informed consent was obtained from the parents

and subjects. Table 1 shows the recruitment process and ultimate number of subjects recruited in the two phases of this study. In total, 322 students were recruited and the participation ratio was 97.8%. Therefore, data of 315 students was available for analyses.

	Boy	Girl	Total
All available students	193	129	322
Full information obtained	189	126	315
Participation rate	58.75%	39.13%	97.82%
Screen positive (all to diagnostic phase)	30	37	67
Proportion screen positive	15.87%	29.36%	21.27%
Screen negative randomly selected for diagnostic phase	21	17	38
Total participation in diagnostic phase	51	54	105
Proportion of screening phase participants who were assessed in Diagnostic phase	27%	42.86%	33.33%

Table 1: Sample recruitment into screening and diagnostic phase of the study.

In screening stage, structured questionnaire included socio-demographic variables and validated Bangla Strengths and Difficulties Questionnaire (SDQ) by Mullick and Goodman [13] as screening measure of psychopathology were given to all subjects. SDQ had three versions (parent, teacher and self). The SDQ consists of 25 attributes some of them are positive and some are negative. The items cover emotional symptoms, conduct problems, hyperactivity, peer problems, and prosocial behaviors. A brief impact supplement asks whether the respondent thinks that he/she has a problem, and if so, inquires further about overall distress, social impairment, burden and chronicity [22]. The informant version of the SDQ can be completed in about five minutes by parents or teachers of children aged 4 to 16 [23] that may be extended to 17 years. The SDQ has been shown to be of acceptable reliability and validity [13,22,23]. Only the self-version was used in this study. Subjects were considered as screen positive when they were found 'probable' psychiatric cases from SDQ cut-offs algorithm.

All screening positive cases and randomly selected screen negative cases which were 50% of screen positive cases and stratified for sex were included in the diagnostic stage. Number of screen positives was 67 and that of screen negatives was 38. In total, 105 (both screen positive and screen negative cases) were interviewed using the Development and Well-Being Assessment (DAWBA) questionnaire. DAWBA is a validated and internationally well accepted research instrument for the research assessment of psychiatric disorder developed by Goodman et al [24]. It is a novel package of questionnaires, interviews, and rating techniques designed to generate both ICD and DSM psychiatric diagnoses among children and adolescents of 5 to 16 years (extended up to 18 years). It has parent, teacher and self versions. The self-version of DAWBA is applicable only for children above 11 years. This instrument has been translated in Bangla and standardized and validated [14]. Only self version DAWBA was administered as an interview to students by the researchers and verbatim accounts

of any reported problems were recorded. An international rater of DAWBA who is an experienced child and adolescent psychiatrist in Bangladesh, subsequently reviewed both the verbatim accounts and the answers to structured questions and did the clinical rating and assigned diagnoses according to DSM-5 criteria [25].

Results

A total of 315 subjects were considered for analyses. Their age ranged from 14 to 17 years. Mean age of the subjects was 15.59 ± 1.05 years. Table 2 shows sociodemographic characteristics of the subjects. It depicts that boy-girl ratio was 1.5:1. Most of the subjects (82.9%) were in the secondary level and rest 17.1% were in higher secondary level education. Ninety six percent were Muslims and majority were from middle income group (94.6%). Nuclear and Joint family percentage was 83.8% and 16.2% respectively.

Prevalence of psychiatric disorder is shown in the Figure 1. It shows that prevalence of any form of psychiatric disorder was found to be 18.7%. The prevalence of Psychiatric Disorders among boys and girls were 17.46% in and 20.63% respectively. This higher preponderance among girls failed to reach the level of significance.

Figure 1: Prevalence of any Psychiatric Disorder

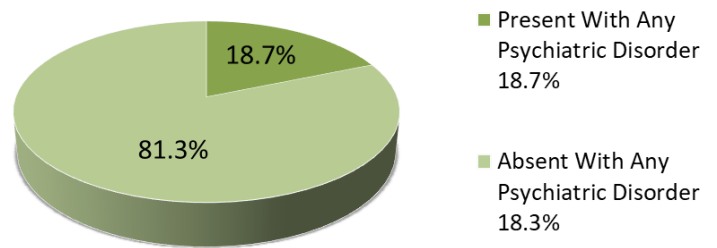


Table 2 shows the weighted prevalence of broad category of Psychiatric Disorders and specific Psychiatric Disorder by gender with 95% confidence interval. In a broad category, any Emotional Disorder was found 14.90% and any Behavioral Disorder (including ADHD) was found 6.30%. Emotional Disorders were more prevalent among the girls (19.84%) than among boys (11.64%) which was highly significant ($P=0.034$). In contrast, any form of Behavioral Disorder was more prevalent among boys (6.35%) than that in girls (2.38%) and the difference was statistically significant ($P=0.013$).

DSM-5 Diagnosis		Prevalence (95% confidence interval)		
		Boy	Girl	Total
Any Disorder		17.46% (12.66-23.59%)	20.63% (14.41-28.65%)	18.7% (14.77-23.45%)
Any Emotional Disorder Boy=11.64% (7.77-17.09%) Girl=19.84% (13.73-27.79%) Total=14.9% (11.38-19.32%)	Separation Anxiety	1.09% (0.26-4.17%)	1.59% (0.39-6.18%)	1.3% (0.47-3.35%)
	Specific Phobia	2.12% (0.79-5.53%)	3.97% (1.65-9.24%)	2.9% (1.49-5.42%)
	Social Anxiety Disorder	3.17% (1.42-6.92%)	3.17% (1.19-8.21%)	3.2% (1.71-5.82%)
	Panic Disorder	0.53% (0.07-3.70%)	0.79% (0.11-5.49%)	0.6% (0.12-2.52%)
	Obsessive-Compulsive Disorder	1.59% (0.51-4.84%)	3.17% (1.19-8.21%)	2.2% (1.06-4.60%)
	Agoraphobia	Absent	0.79% (0.11-5.49%)	0.3% (0.04-2.24%)
	Generalized Anxiety Disorder	1.06% (0.26-4.17%)	3.97% (1.65-9.24%)	2.2% (1.06-4.60%)
	Other Specific Anxiety Disorder	1.59% (0.51-4.84%)	0.79% (0.11-5.49%)	1.3% (0.47-3.35%)
	Posttraumatic Stress Disorder	0.53% (0.07-3.70%)	1.59% (0.39-6.18%)	1% (0.31-2.93%)
	Adjustment Disorder	Absent	0.79% (0.11-5.49%)	0.3% (0.04-2.24%)
	Major Depressive Disorder*	2.12% (0.79-5.53%)	6.35% (3.19-12.24%)	3.8% (2.17-6.61%)
	Persistent Depressive Disorder	0.53% (0.07-3.70%)	0.79% (0.11-5.49%)	0.6% (0.16-2.52%)
Any Behavioural Disorder Boy=8.99% (5.65-14.03%) Girl=2.38% (0.76-7.18%) Total=6.3% (4.12-9.66%)	Attention Deficit Hyperactivity Disorder	4.23% (2.12-8.27%)	0.79% (0.11-5.49%)	2.9% (1.49-5.42%)
	Oppositional Defiant Disorder	3.7% (1.77-7.59%)	1.59% (0.39-6.18%)	2.9% (1.49-5.42%)
	Conduct Disorder	2.65% (1.09-6.23%)	0.79% (0.11-5.49%)	1.9% (0.85-4.19%)

Table 2: Psychiatric Disorder by gender.

Of the psychiatric disorders (18.7%), most prevalent disorders from higher to lower order were Major Depressive Disorder, Social Phobia, ADHD, Social Anxiety Disorder, Oppositional Defiant Disorder, Obsessive-Compulsive Disorder, Generalized Anxiety Disorder and Conduct Disorder. Major Depressive Disorder was found 2.12% among boys and 6.35% among girls and the difference was significant at higher level ($P=0.054$). Social Phobia, Obsessive Compulsive Disorder and Generalized Anxiety Disorder were more prevalent among the girls (3.97%, 3.17%, and

3.97%, respectively) than in the boys but the differences were not statistically significant. In contrast, ADHD (4.23%), Oppositional Defiant Disorder (3.7%) and Conduct Disorder (2.65%) were more prevalent in boys than that in the girls and the differences just failed to reach the significant level.

Table 3 shows the number of Psychiatric diagnosis among the subjects. It reveals that 7.6% subjects had two or more Psychiatric diagnoses. However, single diagnosis was most prevalent among

the subjects.

Number of Diagnosis	Frequency	Percent
None	256	81.3%
Single	35	11.1%
Two	22	7.0%
Three	02	0.6%

Table 3: Number of psychiatric diagnosis among the subjects.

The subjects were divided into two groups: cases with and without Psychiatric Disorders. Then sociodemographic and relevant variables were compared between two groups to find out any possible association. There was no significant difference between socio-demographic variables and psychiatric disorder except the family type. Subjects who came from joint family were more prevalent to psychiatric disorder (31.37%) whereas that was found 16.37 % in nuclear family. This difference was highly significant ($P=0.013$).

Discussion

To delineate the prevalence of Psychiatric Disorders of 14-17-year old school adolescents, prevalence was found 18.7% (14.77% to 23.45%) according to DSM-5 criteria. We did not find any prevalence study conducted solely on the similar age group of our studies. Nevertheless, study findings on prevalence of Psychiatric Disorders among the adolescents were closely resembles with the prevalence rate reported in our study. Prevalence of Psychiatric Disorders was found 21.5% in national sample of Dutch adolescents of 13-18 years [7]. In a national survey in Great Britain, DAWABA based prevalence rate was found 11.2% among 11-15-year old [8]. Further, DWABA/DSM-IV based prevalence was found 9.8% among 10-14-year adolescents in Italy [18]. Similar types of studies in USA based on DSM-III-R with impact criteria shows that prevalence was 10% among 14-18-year old [26], 18.6% among 6-17 years old [27], and 10.6% among 9-17-year old [6]. Prevalence of child and adolescent psychiatric disorders was 9.49%–16.2% in China [28-30], 14.8%–22.7% in Taiwan [31], 16.4% in Hong Kong [32], and 9–11% among 15-16 years in Japan [11]. High prevalence was found in found in North India 20.39% among 11-16-year old [12], and 21.2% for Bangladeshi 12-17 years old [15].

Comparing above findings, it can be viewed that prevalence of Psychiatric Disorders among children has been reported to be lower than that of adolescent population. This is reflected in DAWABA-based prevalence of 8% for British 5-10-years old [8]; 7% and 13% for two different surveys of Brazilian 7-14 years old [10], 15% for Russian 7-14 years old [33] and 15% for Bangladeshi 5-10 years old [14].

There is no straight forward comparative data of the prevalence among adolescents in Bangladesh also. In Bangladesh, the first child and adolescent mental health screening study reported a predictive prevalence of mental health problems of 17.9% among 4-16 years old using the self-reported Strengths and

Difficulties Questionnaire [13]. The first methodologically sound epidemiological study conducted among 5 to 10 years old children in rural, urban, and slum areas of Bangladesh, estimated that around 11-21% of children and adolescents had Emotional and Behavioral disorders that were severe enough to result in substantial distress or social impairment [14]. Another large-scale community survey showed psychiatric morbidity among 5-17 years old was 18% [15]. As Psychiatric Disorder is increased in late adolescence, it can be assumed that prevalence estimate in our study has reflected the state of burden of Psychiatric Disorders in this age group.

In this study, Emotional and Behavioral Disorders were found 14.9% and 6.3% respectively. First screening study among 4-16 years old school children in Bangladesh reported that Emotional Disorders was 10.5% and any Behavioral Disorders was 8.7% [13]. Emotional Disorders are more frequently observed (6.5%) than Behavioral Disorders (1.2%) among adolescents in Italy [18]. This is more or less similar to our findings. Major Depressive Disorder was most prevalent (3.8%) among the subgroup and second most (3.2%) was the Social Anxiety Disorder. In one study, prevalence of Major Depressive Disorder and Anxiety Disorder was 2.2% and 2.4% respectively [1]. In present study among 14-17 years old school children, Oppositional Defiant Disorder and Conduct Disorder were found 2.9% and 1.9% respectively. These findings are more or less similar with the findings of other studies among adolescents. In these studies, Oppositional Defiant Disorder and Conduct Disorder were found 0.7% and 5.6% [7], 2.7 and 2.7 % [1] and 1.2% and 0.6% [28] respectively. ADHD was found 2.9% in the present study. In the representative community-based studies ADHD was found 1.3% among 13-18 years old [7] 1.0% among 14-16 years old [1], 8.3% among 12-17 years old [21], and 3.02% among 11-16 years urban school children [12]. In a report of survey in Bangladesh, ADHD was found 3.1% among 4-16 years old school children [13].

In the present study, prevalence of Psychiatric Disorders was higher among the girls (20.63%) than the boys (17.46%). This finding more or less matches with the findings of other studies. In the Ontario Child Health Study, children aged 12-16 years prevalence of Psychiatric Disorders among boys and girls was 18.8% and 21.8% respectively [20]. In a similar school-based study in North India, the result showed Psychiatric Disorders among female was 24.12% and male was 17.50% [12]. Significantly higher rate of Emotional Disorders among girls and Behavioral Disorders among boys were found in this study. Similar report was in different representative studies [8,10,11,13-15,17].

Considering gender difference, significantly higher preponderance of Major Depressive Disorder was also found in girls (6.35%) in our study. This result is also consistent with the finding other studies; in North India 6.40% female were suffering from Depression [12]. In another study, 7.6% girls were diagnosed with Major Depressive Disorder [33]. Excess of any specific type of Anxiety Disorder was found higher among girls in our study though the differences did not reach the level of significance. In a representative study among 11-15 years old, any Anxiety Disorder was found 5.3% in girls [8].

In our study, higher rate of Oppositional Defiant Disorder (boys vs. girls: 3.7% & 1.6%) and Conduct Disorder (boys vs. girls: 2.65% & 0.8%) were found among boys. This result simulates with the findings of other studies among adolescents [8,20]. In a representative study among 11-15 years old, conduct disorder was found 8.6% in boys and 3.8% in girls [8]. ADHD was found higher among boys (4.23%) than girls (0.8%) in the present study, which matches with the other studies [33,34].

In the present study, these who had Psychiatric Disorders, 11% had single diagnosis. Prevalence of two and three diagnosed disorder was 7.0% and 0.6% respectively. Similar type of result was found in another study conducted in Lebanon [35]. Subjects with one diagnosis were 14.1%, 8.0% with two diagnosis, 3.1% with three diagnoses and 0.8% with four or more diagnosis [35].

In this study, significantly higher prevalence of psychiatric disorder was found in the subjects from joint family than that of nuclear family. This might be due to increase number of family members, poor caregivers' supervision and loss of parental authority blended with cultural factors. No other variable was found significantly associated with psychiatric disorder. It has been reported that living with a single parent, low level of maternal education, low family income, physical abuse and dysfunctional family were found to be associated with higher rate of psychiatric disorders in adolescents [4,18,36]. Possible explanation of lack of such association in our study could be due to small sample size from a single school. Further studies are required taking large representative sample with inclusion of all relevant variables to explore the correlates of disorders in this population.

There are some limitations in the present study. Relatively small sample size and involving only one urban school with students mainly coming from middle income group may not be representative of that population. Only self-version of the screening and structured instruments was used that may effect on measuring actual psychopathology. Thus, generalization of the findings of the study is limited. Subsequent broad based multi centered studies using multi informants are required to confirm the findings of the study.

Despite of these limitations, this study is the first to explore the prevalence of psychiatric disorder among this age group in Bangladesh having strong methodological foundation. The findings will provide baseline data in this aspect for service development and sound methodology for further studies in this area.

Conclusion

Our results support the findings of similar type of previous studies. As adolescents play a vital role in the society, special attention must be provided to them. There should have provision of adolescent mental health services including school mental health service for screening, identification, management along with appropriate referral system. Building awareness among parents, teachers and society is another task as part of broader preventive measures.

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