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ORIGINAL RESEARCH

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Relationship between predictive psychiatric disorders and social difficulties among children and adolescents attending pediatric outpatient department of a tertiary hospital in Dhaka

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ABSTRACT

Background: Considerable numbers of children and adolescents in Bangladesh attending in pediatric outpatient department (OPD) suffer from emotional and behavioral disorders. These disorders are associated with social difficulties in term of peer problem and low prosocial behavior.

Objectives: The study had been designed to find out the proportion of predictive psychiatric disorder among the children and adolescents attendees in a pediatric outpatient center and their association with peer problem and social difficulties.

Methods: This cross-sectional study was carried out in pediatric OPD of a tertiary level hospital. Purposive and consecutive sampling technique had been used and sample size was 100. Both male and female children aged 4–18 years were included. Structured questionnaire containing socio-demographic and other relevant clinical information and validated parent version of Bangla Strength and Difficulties Questionnaire for screening psychopathology had been applied to the consented parents or caregivers of the respondents.

Results: Mean age of the children was 8.17 years. Children from 4 to 10 years were 80%. The male–female ratio was 1.3:1. Predictive psychiatric disorder was 12%. Among them, hyperactivity was 9%, emotional disorder 5%, and conduct disorder 5%. Overall, 20% of the cases had peer problem and they were significantly present in the cases with predictive psychiatric disorder. Low prosocial behavior was found among 75% subjects and it was found higher in predictive psychaitric disorder group but not at significant level. Low prosocial behavior was significantly found among the subjects with predictive attention deficit hyperactivity disorder ($P = 0.033$). Furthermore, low Prosocial behavior and high peer problem were significantly found in 77.8% subjects ($P > 0.001$).

Conclusions: This study supports the other findings of high psychiatric disorders among the pediatric outpatient attendees and their adverse impact that would ultimately help in applying suitable screening procedure and early intervention.

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Introduction

Psychiatric disorders of children and adolescents are unquestionably ubiquitous and burdensome. Psychiatric disorders in childhood and adolescence concern with emotional, behavioral, and developmental disorders that arise in the first two decades of life [1]. Current global epidemiological data consistently reports that up to 20% of children and adolescents suffer from a disabling mental illness; and 50% of all adult mental disorders have their onset in adolescence [2]. Representative studies in the developing world generate this prevalence ranged from 1% to 49% [3]. Child and adolescent psychiatric disorders comprised of 7% in a study among attendees at walk in psychiatric clinic [4]. Bangladesh is also a developing country

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with the total population of about 150 million, of whom 5–14 years age group constitutes 26% of the population [5]. Child and adolescent psychiatric disorders among outpatient department (OPD) were found 9% in Institute of Mental Health and Research in 1990 in Bangladesh [6]. In Bangladesh, first child and adolescent mental health screening study reported that predictive prevalence of mental health problem was 17.9%. Of this, any emotional disorder was 10.5%, any conduct disorder was 5.6%, and any hyperkinesis was 3.1% by using Strengths and Difficulties Questionnaire (SDQ) [7]. First methodologically sound epidemiological study conducted among 5–10 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 which were severe enough to result in substantial distress or social impairment [8]. Another large scale community survey showed psychiatric morbidity among children aged 5–17 years was 18% in Bangladesh [9]. A study on psychiatric disorders among children and adolescents attending pediatric OPD of three tertiary hospitals in Dhaka city reported that among the respondents, 18% were found to have any psychiatric disorder. Behavioral disorders, emotional disorders, and developmental disorders were found 9%, 15%, and 0.4%, respectively. Hyperkinetic disorder was the single most frequent (5%) psychiatric disorder [10].

In contrast, child and adolescent mental health services are limited throughout the globe mainly due to lack of resources and awareness including stigma. More recent data from the World Health Organization [11] Mental Health Atlas found that the documented need for child and adolescent mental health services are fully met nowhere in the world. The scenario is comparatively worse in developing country including Bangladesh and massive gap exists between need and service provision.

Child psychiatric disorders often present in the context of somatic symptoms and are more common among frequent practice attendees [12]. It is also found that psychiatric disorders are more common in children with both chronic and acute pediatric disorders [13,14] than that in general children population. As a result, child mental health problems are common reasons for consultation in general pediatric clinics. The result of a recent study showed that 20% of children attending pediatric OPD had been suffering from some sort of psychiatric disorders [15]. Moreover in developing countries, family may not appreciate or children may not be able to express psychological distress. They may somatize their symptoms. They and their caretakers hesitate to seek help from mental health professionals; rather they prefer pediatric setting for treatment and support.

The researchers hypothesized that social difficulties in term of peer problem and low prosocial behavior are higher in pediatric population who has physical illness with comorbid psychiatric disorder than that of who has physical illness only. This study was carried out to delineate the predictive proportion of psychiatric disorders, peer problem, and low prosocial behavior among children attending at a pediatric OPD and to see the association between these variables. The information will help to define needs of screening and priorities of this patient group. It will also help to integrate the pediatric and child psychiatric service to deal with such patients more effectively.

Methods

This was a cross sectional, descriptive, quantitative survey type study with one stage design to screen out the positive cases by using a screening instrument. The study was carried out from May 2016 to June 2016 in pediatric OPD of Bangabandhu Sheikh Mujib Medical University (BSMMU) Hospital, a tertiary level teaching hospital. Patents register was the sampling frame. One hundred children and adolescents of eithers sex ranged from 4 to 18 years of age who had some form of physical illness were included in the study through purposive and consecutive sampling. Those who were suffering from serious medical conditions, having impaired consciousness, and not in a position to participate were excluded.

Ethical clearance was obtained from the Ethical Clearance Committee of concerned institution. Prior permission was obtained from the respective department of the hospital. Informed verbal consent was taken before conducting the research. The research instruments were Child Data Sheet (CDS) and SDQ. The CDS is a structured questionnaire developed by the researchers to conduct this study. It contained socio-demographic variables, family history of psychiatric illness, and present medical illness. The SDQ [16–21] is a brief behavioral screening questionnaire that asks about 25 attributes, some positive and some negative. The items, which were selected on the basis of contemporary diagnostic criteria as well as factor analyzes, are divided between five scales of five items each,

generating scores for emotional symptoms, conduct problems, hyperactivity, peer problems, and prosocial behaviors. All items contributing to the first four subscales are summed to generate a Total Difficulties Score. The same questionnaire can be completed in about 5 minutes by parents or teachers of children aged 4–17. There is also a self-report version [17] for those aged 11 and above. An extended version assesses the impact of any psychiatric symptoms in terms of resultant distress, social impairment, or burden for others [18]. The SDQ has been shown to be of acceptable reliability and validity, performing at least as well as the lengthier and longer-established Rutter questionnaires and Child Behavior Checklist [16–18]. The website at www.sdqinfo.com provides more information on the SDQ plus downloadable versions of the questionnaires in many languages. The various versions of the SDQ were translated into Bangla and validated by Mullick and Goodman [7]. The versions of the Bangla SDQ used in the study were the informants and self-report versions including impact supplements, all being scored in the standard manner [16–18]. In the present study, only parent version of Bangla SDQ was administered for all subjects (age range 4–18 years).

Firstly, informed consent was obtained from the caregivers of the respondents. Then Socio-demographic Data Sheet was applied by one of the researchers through face to face interview. The answer was recorded accordingly. Instruction was given to the parents by one of the researchers. Then, the parent version of the Bangla SDQ was distributed and field up P-SDQ was collected. For those who were not able to read, the SDQ was read out to them and their answers were record accordingly. After that, data was cleaned and processed. Version 20 of the SPSS had been used for statistical analysis.

Results

A total of 100 children and adolescents aged 4–17 years attending the pediatric OPD of BSMMU were taken in the study. Table 1 shows Socio-demographic characteristics of the study population. It shows that their age ranged from 4 to 17 years with a mean of 8.17 (standard deviation = 2.8) years. The majority of the subjects were of 4–10 years age group which was 80% and rest were of 11–17 years age group which was 20%. Boy–girl ratio was 1.3:1. Most of the subjects (60%) were in the primary level education followed by preschool 29%, and Secondary level 11%. Urban–rural distributions were 64% and 36%, respectively. Majority (94%) of the subjects was Muslim and 6% were Hindu. Most of the subjects (32%) were from lower income group and middle and higher income group were 58% and 10%, respectively.

Table 1. Socio-demographic characteristics of the study population (n = 100).

Socio demographic and other variables	Frequency and Percentage
Age (in year)	
4–10 years	80
11–17 years	20
Mean = 8.17 (±2.8) years	
Sex	
Male	56
Female	44
Educational level	
Pre-school	29
Primary level	60
Secondary level	11
Habitat	
Rural	36
Urban	64
Income group	
Lower	32
Middle	58
Higher	10
Religion	
Islam	94
Hinduism	6

The proportion of predictive psychiatric disorders among the respondents presented in the Figure 1 shows that any form of predictive psychiatric disoder was 12% of the children and adolscents. Figure 2 shows the proportion of broad categories of predictive psychiatric disorders, peer problem, and low prosocial behavior among the respondences. It indicates that 9% had attention deficit hyperactivity disorder (ADHD), 5% had emotional disorder, and 5% had conduct disorder.

Peer problem was found among 20% of the cases (Fig. 2). Of these peeer problem, six cases was with predictive psychiatric disorder group that means half of the patients with psychiatric disorder have had peer problem. In contrast, 14 cases had peer problem without being in psychiatric disorder group (13.9%). The difference was significant ($p > 0.005$). Of the cases of peer problem with psychiatric disorder, 4% was with emotionl disorder, 2% was with conduct disorder, and the rest of 3% was with hyperactivity. These diferences were not significant at 5% level ($P = 0.295$).

Low prosocial behavior was found among 9% of the cases (Fig. 2). Table 2 shows the distribution of the subjects according to categories of prosocial

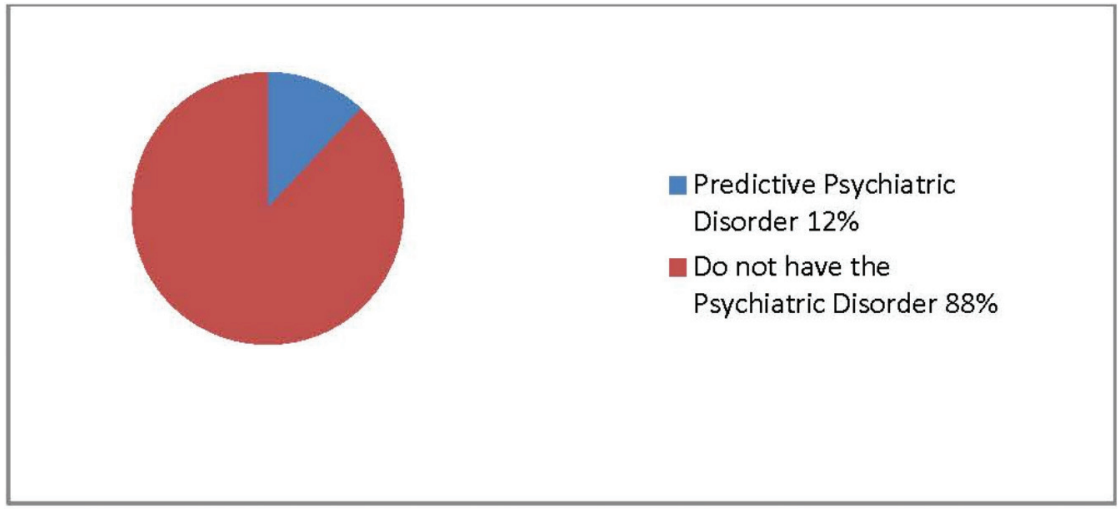

Figure 1. Proportion of predictive psychiatric disorders among the respondents (n = 100).

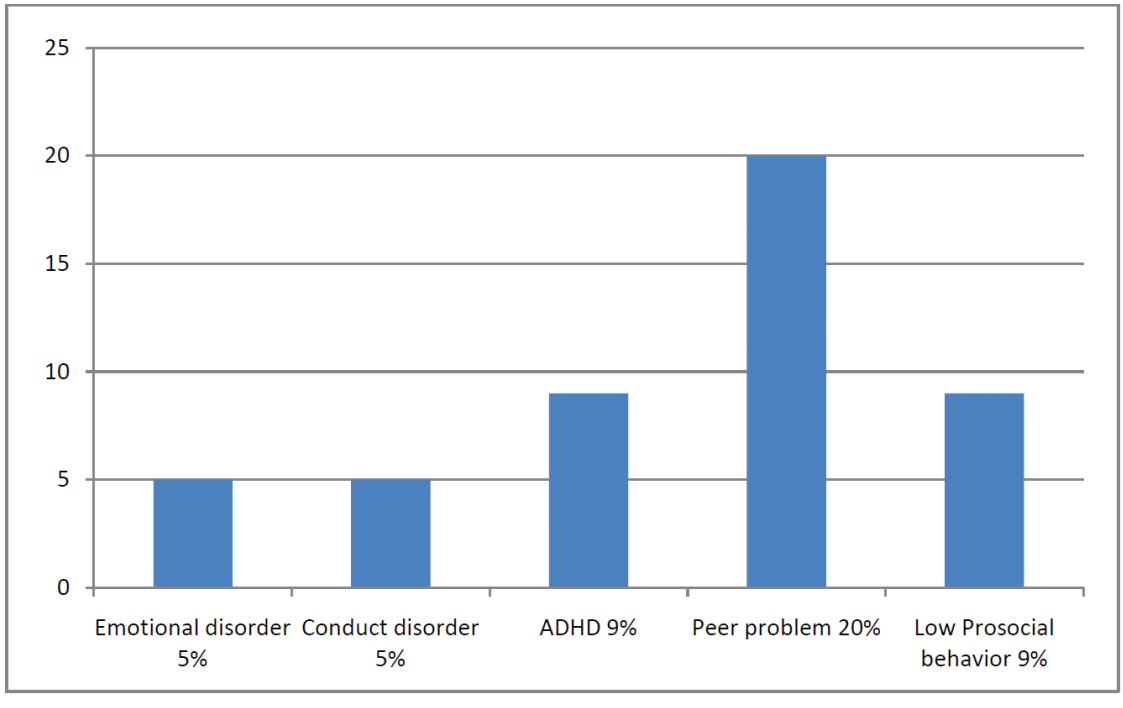

Figure 2. Proportion of categories of predictive psychiatric disorder, peer problem, and low prosocial behavior (n = 100).

Table 2. Distribution of the subjects according to the category of prosocial behavior.

Category of prosocial behavior	Subjects with predictive psychiatric disorder		Subjects without predictive psychiatric disorder		*P* value
	N = 12	%	*N* = 88	%	
High	9	75.0	82	93.2	0.074
Low	3	25.0	6	6.8	

Table 3. Distribution of the subjects according to the relationship between prosocial behavior and peer problem.

Category of peer problem	Category of prosocial behavior				*P* value
	High		Low		
	N = 91	%	*N* = 9	%	
High (*N* = 20)	13	14.3	7	77.8	0.000
Low (*N* = 80)	78	85.7	2	22.2	

behavior. It indicates that out of the nine cases, three (25%) cases were with predictive psychaitric disorder group. In contrast, six (6.8%) cases had low prosocial behavior without being in psychiatric disorder group. Though low prosocial behavior was higher among subjects with psychiatric disorder group, the difference was not succeded to reach the significant level (p = 0.074). Furthermore, analysis of prosocial behavior among the catagories of predictive psychiatric disorder revealed that low prosocial behavior was significantly found among the subjects with predictive ADHD (P = 0.033). Though the low prosocial behavior was found high in conduct disorder followed by emotional disorder, the differences did not reach the level of signifiance (P = 0.038 and P = 0.063, repectively).

Relationship between prosocial behavior and peer problem is shown in the Table 3. It reveals that 77.8% had low prosocial behavior and high peer problem which was highly significant (P > 0.001).

Discussion

Out of 100 patients of pediatric OPD, overall proportion of predictive psychiatric disorder was 12% in this study. The result compares closely with rates (20%) obtained in the previous studies [10,22–24]. Similar nature of study in three tertiary hospitals in Dhaka reported 18% respondents were found to have any psychiatric disorder [10]. However, this result is rather lower (28%) than that of a previous UK study [22] but is found higher (1%–8% and 5%) than Goldberg et al. [25,26] studies. In the present study, researchers used one-stage screening instruments. This inconsistent finding might have been due to different study design, instruments, and diagnostic criteria (International Classification of Diseases-9) of these studies. It could be speculated that the proportion of psychiatric disorder would be higher in a pediatric OPD where more sick children accumulate with physical symptoms and chronic illness. The present study finding (12%) is almost equal with the overall prevalence of child and adolescent psychiatric disorder (11%–21% and 18.4%) in Bangladesh [7,8]. This might be due to the selection biasness of the study place in the present study. This is a prime tertiary hospital of Dhaka city where selective group of patients with preponderance of city population were the respondent. Furthermore, children and adolescents with general medical condition needed better management were referred to this department after initial assessment and visible psychiatric problems were probably referred to the relevant facilities.

In the study, proportion of ADHD was found highest (9%) than any of the groups of predictive psychiatric disorders among the subjects. The result is highly consistent with the findings (8%) of other studies in the Western countries [26,27]. In a similar study in Dhaka city, ADHD was the single most frequent (5%) psychiatric disorder. On the other hand, the rate is much higher than the overall prevalence (1%) of ADHD in Bangladesh [8]. One possible explanation of higher proportion of ADHD among the subjects is the adverse effect of existing acute or chronic physical disorder. This needs to be confirmed by large scale studies further; it may be due to urban predominance of the respondents of this study who were more exposed to risk factors (like parental expectations, attitudes to and tolerance of behavior, adverse social condition, academic pressure, lead exposure, and certain additives in food).

In the present study, predictive emotional disorder was found 5%. The study of Jesmin et al. [10] in Dhaka, reported 15% emotional disorder. In the first community based study in Bangladesh, Mullick and Goodman [7] study found 8.1% of emotional disorder. However, the proportion of emotional disorder more or less matched with earlier community based Western studies [28,29].

In this study, researchers found that 5% had predictive conduct disorder that simulates with the study of Jesmin et al. [10] with the 4% oppositional defiant/conduct disorder. In the first community based study in Bangladesh, Mullick and Goodman [7] study also found 8.9% of oppositional defiant/conduct disorder. This can be explained by particular study place of slum area of that study. The depicted lower prevalence of present study may also be due to ignorance of the family members to recognize the oppositional/conduct problems.

Overall, social difficulties were found 29% in this study (Peer problem 20% + low prosocial behavior 9%). These subscales had been used in a few SDQ based screening studies on child psychopathology but lack clear analyzes. In a community sample of, 10–19 year olds psychosocial problems were found to be 48% [30]. This high rate is certainly due to crucial adolescence period demanding significant adjustment in physical and social changes. By any means, the significantly high proportion of social difficulties is associated with psychiatric disorder as found in the present study.

In the present study, peer problem was found among 20% of the cases that indicates significant number of children and adolescents attended in the pediatric OPD had social difficulties. That could be due to impact of the existing acute and chronic physical problem combined with mental health problem. Furthermore, half of the patients (50%) with psychiatric disorder had peer problem in comparison with 15% patients without in psychiatric disorder group and the difference was highly significant. It might be the fact that some of the cases with peer problem may be in the without psychiatric disorder group may had developmental problems including autism spectrum disorder as these problems are usually not be screened well with the SDQ. Furthermore, research is needed to investigate possible explanations of these findings. This area need to be explored for better understanding.

In this study, low prosocial behavior in SDQ subscale was found 9% of cases and that was higher among subjects with psychiatric disorder group though the difference was not succeded to reach the significant level (p = 0.074). It can be speculated that it would be statisticaly significant in the larger and representative sample size. Simlilar report was found SDQ prosocial behavior analyzes of 4–16-year-old normative population in a Danish National Survey [31]. However, whether it is due to the consequences of emotional or behavioral problems are less clear in a number of empirical studies. The finding is very much indicative of lower strength of children and adolescents having psychiatric disorders. Furthermore, possible explannation may be that it is due to distress and impairment of the effected children and adolscents. Furthermore, study is needed to confirm this finding. Low prosocial behavior was highly significant among the subjects with predictive ADHD (P = 0.033) which is very much indicative of causal factor and devastating impact over the effected children.

In the present study, it can be viewed that higher association exists between psychiatric disorders with physcal illness and social difficulties than only with psychiatric disorders and social difficulties. As only screening questionnire was used in this study to delineate broad categories of psychiatric disorders, specific type of psychiatric disorders certainly have significant contribution in such association. Mood disorder can be expressed through emotional, conduct, and hyperactive symptoms. Pediatric bipolar disorder and unipolar disorder share common symptomatic and functional impairments including social difficulties. More abnormalities have been documented in the brains of children and adolescents with bipolar disorder than unipolar disorder. Reductions in the volume of basal ganglia and the hippocampus appeared more specific for pediatric unipolar disorder, whereas reduced corpus callosum volume and increased rates of deep white matter hyperintensities were more specific for pediatric bipolar disorder [32]. Whether this type of relation is responsible for the higher preponderance of psychiatric disorders among the pediatric population with physical disorder can only be understood by conducting broad based studies with larger samples from greater number of randomly chosen pediatric outpatients' facilities with the aim of exploring specific psychiatric disorders and their neuropathological & psychosocial relations with specific physical illness.

In the present study, 77.8% had low prosocial behavior and high peer problem and relationship between them was highly significant (P > 0.001). This finding is very much indicative that main indicators of social difficulties related to child and adolescent psychiatric disorders are expressed through peer problem and low prosocial behavior and they influences each other in negative direction.

This study has certain limitations. The study was conducted in a tertiary hospital of Dhaka city with relatively small sample size. Furthermore, smaller samples were used for subgroup analyzes. The study population is not representing the whole child and adolescent population. The Researchers used only parent version for screening measure due to lack of feasibility in this type of facility setup where people comes almost all corners of the country. Moreover, researchers did not perform diagnostic assessment using structured measures of child psychopathology. These limit generalization of the results. However, the results have strong predictive value as culturally adopted and validated screening tool was used in this study.

Conclusions

This study explores and supports the existence of wide magnitude of the problems of children and adolescents psychiatric disorders in pediatric settings in Bangladesh. Hyperactivity is of high preponderance among them. Psychiatric disorders are frequent in pediatric OPD as they are associated with enhanced reporting of physical symptoms. Overall, the distress and impairment for psychiatric disorders is significant particularly in the field of social difficulties evident in peer problem and

low prosocial behavior. Thus, it echo the need for effective hospital based pediatric–psychiatric liaison service as well as similar combined approach at root level. Furthermore, broad based and in-depth research should be carried out to address the issue.

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