Psychosocial Stressors And Predictive Psychiatric Disorders Among Adolescents In Bangla Medium Schools In Dhaka, Bangladesh

Jebun Nahar[*1], Nusrat Jahan Tanzilla[2], Mahabuba Rahman[3], Mohammad Shamsul Ahsan[4]

[1*]*Resident Psychiatrist, National Institute of Mental Health and Hospital, Dhaka, Bangladesh.*
[2]*Child and Adolescent Psychiatrist, Department of Psychiatry, Bangladesh Medical University (Ex-BSMMU), Dhaka, Bangladesh.*
[3]*Assistant Professor, Department of Psychiatry, Medical College for Women and Hospital, Dhaka, Bangladesh*
[4]*Associate Professor, Department of Psychiatry, Bangladesh Medical University (Ex-BSMMU), Dhaka, Bangladesh.*

KEYWORDS

Psychosocial stress, adolescent, psychiatric disorder.

ABSTRACT

Background: Adolescence is a crucial period of human development with various changes in multiple contexts. Psychosocial stress is one of the risk factors for making this age group vulnerable to mental health problems. In Bangladesh there is lack of research that explore the relationship between psychosocial stressors and psychiatric morbidity among adolescents.

Aim of the study: To assess the relationship between psychosocial stressors and predictive psychiatric disorders among adolescents of Bangla medium schools in Dhaka city.

Methods: This was a cross-sectional descriptive study carried out at two Bangla medium schools in Dhaka city during the period of October 2021 to September 2023. In total, 150 adolescents were purposively selected for the study from their schools. After taking their informed written consent and assent, they were interviewed using a semi-structured sociodemographic and relevant information questionnaire along with Bangla versions of Dhaka Stress Scale – Adolescent (DSS-Ad) and Strength and Difficulties Questionnaire Self-Report (SDQ-SR). Interview was carried out in face to-face self-report format using paper and pencil method. Ethical clearance was taken from Institutional Review Board of BSMMU and ethical issues were addressed throughout the study. Data were collected by the researcher and analyzed using SPSS 28.0 software. All comparisons were considered significant if $p< 0.05$.

Result: Among 150 adolescents, common psychosocial stressors included parental pressure for academic performance (82%), academic workload (76%), and low grades (67.3%). Other stressors were excessive internet use (58.6%), discord with parents (44%), upcoming exams (36.6%), harsh teacher behavior (36.6%), lack of recreation (29.3%), parental discord (26%), exam failure (23.3%), and bullying (20%). About 27.3% showed abnormal total SDQ scores. Based on SDQ impact scores, 9.3% had emotional disorders, 10% conduct disorders, and 10.6% hyperactivity disorders. Emotional disorders were significantly associated with severe stress ($X^2=3.58$, $p=0.047$), and

correlated with stress from living conditions (τ=0.269) and education (τ=0.245). Conduct disorders correlated with stress from family life (τ=0.164), living conditions (τ=0.164), interpersonal relations (τ=0.179), and education (τ=0.177).

Conclusion: Around one-fourth adolescents scored in abnormal range in SDQ. Severe levels of stress were found to be associated with emotional problems

INTRODUCTION

Adolescence is a critical phase of human development that bridges childhood and adulthood. It involves significant physical, psychological, and emotional changes that shape future mental health. During this period, key aspects of personality, behavior, and coping skills are formed. According to the World Health Organization (WHO), the Southeast Asia Region (SEAR) has about 362.2 million adolescents, nearly one-fifth of its population. In 2015 alone, around 1.7 million adolescent deaths occurred in SEAR, with suicide being a major contributor [1]. Emerging psychiatric disorders during adolescence are an increasing global concern. The US National Comorbidity Survey reports that nearly 50% of all lifetime mental health disorders begin by age 14 [2]. Yet, many cases remain undiagnosed and untreated, leading to lasting effects. Prospective studies show a strong link between childhood and adult psychiatric conditions, with over half of adult disorders preceded by early-onset psychological issues [3]. Furthermore, recent evidence suggests that the prevalence of common mental disorders among adolescents is rising, with rates ranging between 25% and 45% [4]. Stress, particularly psychosocial stress, has been widely recognized as a major risk factor for the development of adolescent psychiatric disorders. It encompasses environmental and emotional challenges that exceed one's coping ability, triggering a cascade of psychological and biological changes [5,6]. Chronic exposure to stressful life events can lead to emotional dysregulation and is associated with conditions like depression, anxiety, conduct disorders, and attention-related issues [7]. Emotional and behavioral problems are now major contributors to the global disease burden. According to WHO, depression is the fourth leading cause and anxiety the ninth among adolescents aged 15–19. In the 10–14 and 15–19 age groups, ADHD and Conduct Disorder rank second and eleventh, respectively [8]. Adolescents face various stressors, including romantic relationship issues, peer and parental conflict, and exposure to violence, which significantly amplify their stress [9]. Common stressful life events among school children include family disruption, peer rejection, romantic breakups, academic failure, and limited extracurricular opportunities [10]. Furthermore, adolescent loneliness has been positively correlated with increased aggression [11]. The Bangladesh National Mental Health Survey reports that 12.6% of children and adolescents meet the criteria for at least one DSM-5 psychiatric diagnosis, while a systematic review found prevalence rates ranging from 13.4% to 22.9% [12,13]. In response, the Government of Bangladesh has introduced a National Strategy for Adolescent Health (2017–2030), prioritizing mental health as a key focus area [14]. With rising school enrolment, addressing adolescent mental well-being is crucial to achieving Sustainable Development Goal (SDG) 3, which promotes health and well-being for all ages. While school-based mental health programs have grown globally, they remain scarce in Bangladesh. Teachers and school staff, often the first to notice behavioral changes, play a vital role in early detection and support [15]. This study aims to explore the relationship between psychosocial stressors and predictive psychiatric disorders among adolescents of Bangla medium schools in Dhaka city, considering their sociodemographic characteristics.

METHODOLOGY & MATERIALS

This study employed a cross-sectional descriptive design, conducted from October 2021 to September 2023, to investigate stress levels and predictive psychiatric disorders among adolescents. The fieldwork was carried out at two Bangla medium schools in Dhaka city: Udayan Uchcha Madhyamik Bidyalaya and Nilkhet High School, targeting students of either sex in grades IX and X, aged 14 to 17 years. The sample size was calculated by using following formula and prevalence of psychiatric disorders among school students was considered 18.7 % (Mallik and Radwan, 2020) and a purposive sampling technique was utilized to select participants who met the inclusion and exclusion criteria of the study. Written inform consent and assent was obtained from the subject without any influence and copy was supplied to them.

Inclusion Criteria:

Students of either sex of class IX and class X from age 14 -17 years who gave informed consent and assent.

Exclusion Criteria:

Students with serious medical and/or known psychiatric illness.

Students of class IX and class X less than 14 years and more than 17 years of age.

Data Collection

For this study, data collection commenced following Institutional Review Board approval. School authorities were provided with an official request letter and approved study protocol. After obtaining permission, a formal meeting was convened with students and their class teachers, during which the researcher delivered a presentation covering mental health, study aims, methodology, and the administration of the research instruments—the semi-structured sociodemographic questionnaire, the Dhaka Stress Scale-Adolescent (DSS-Ad), and the Strengths and Difficulties Questionnaire (SDQ-SR). Students meeting the inclusion criteria, who provided informed assent, were then administered the questionnaires in a face-to-face, paper-and-pencil format. This process, designed to ensure clarity and minimize participant burden, took approximately 30-40 minutes per participant. To maintain confidentiality, unique identification numbers were assigned, and all data were securely stored. Prior to the main data collection, a pretesting phase involving 10% of the target population was conducted to refine the instruments and methodology, ensuring their applicability and validity within the cultural context.

Statistical Analysis

Data analysis was performed by Statistical Package for Social Science (SPSS), version-28. Descriptive analysis was done to report the frequency and percentage of emotional and behavioral problems among school students. Mean and standard deviation along with mild, moderate and severe stress category was used to report findings from stress scale. Chi-square test and Kendall's Tau correlation test were applied to see the correlation between stress and predictive psychiatric disorder.

A total of 150 adolescents participated in this study. As demonstrated in Table 1, the majority were 15 years old (56.70%), followed by 24.70% aged 14, 15.30% aged 16, and 3.30% aged 17. Gender distribution was equal with 50.00% males and 50.00% females. Most participants (82.00%) were in the 9th grade, while 18.00% were in the 10th grade. Public and private school students were equally represented. A large proportion (82.70%) came from nuclear families. Most had married parents (90.00%), while 5.30% experienced parental separation, 2.00% reported divorce, and 2.70% had a widowed parent. Monthly income exceeded 30,000 BDT in 69.3% of cases and 30.7% earned between 10,000 and 30,000 BDT (Figure 1). Parental pressure for academic performance was the most reported

(82.00%). Internet addiction affected 58.60% of participants. Relationship-related issues included falling in love (36.60%), breakups (15.30%), and lack of a romantic partner (14.60%). Upcoming examinations caused stress in 36.60%, and 23.30% reported examination failure. Conflicts with parents (44.00%) and siblings (32.00%) were common. Other stressors included bullying (20.00%), harsh behavior from teachers (36.60%), lack of recreational opportunities (29.30%), and job loss of a parent (10.00%) (Table 2). Severe stress affected 83.30%, moderate stress 10.00%, and mild stress 6.70%. All mild cases were among private school students, whereas severe stress was more prevalent among public school students (Table 3). The mean SDQ difficulties score was 15.89±5.08. Normal emotional, conduct, and hyperactivity statuses were found in 75.30%, 67.30%, and 72.70% respectively. Peer problems were in the borderline range in 47.30% and abnormal in 24.70%. Normal prosocial behavior was found in 86.00% (Table 4). Figure 2 showed that hyperactivity disorder was present in 10.6%, conduct disorder in 10.0%, and emotional disorder in 9.3%. Significant associations were found in Table 5 between stress severity and emotional disorders (p=0.047). Table 6 represented conduct disorder was linked to family, living, and educational stressors; emotional disorder was associated with living and educational stressors. Table 7 revealed significant links between stress severity, grade (p=0.027), and gender (p=0.007). Table 8 showed emotional disorder significantly associated with gender (p=0.008).

Table 1: Sociodemographic characteristics of adolescents participated in the study (N=150)

Variables	Frequency (n)	Percentage (%)
Age group (years)		
14	37	24.70
15	85	56.70
16	23	15.30
17	5	3.30
Gender		
Male	75	50.00
Female	75	50.00
Class (grade)		
9^{th}	123	82.00
10^{th}	27	18.00
School type		
Public	75	50.00
private	75	50.00
Family type		
Nuclear	124	82.70
Extended	26	17.30
Marital status of parents		
Married	135	90.00
Separated	8	5.30
Divorced	3	2.00
Widow/widower	4	2.70

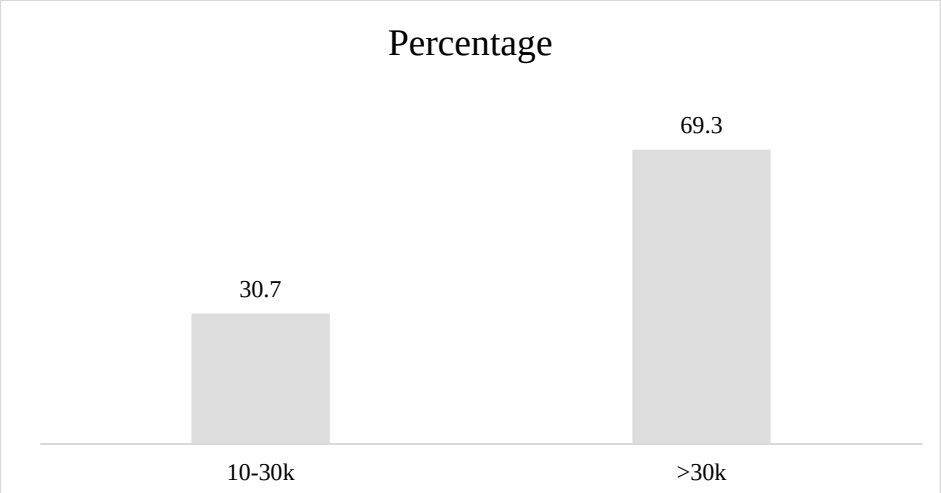

Figure 1: Economic status of the families of adolescents participated in this study (N=150).

Table 2: Frequency of stressful events in last one year according to DSS-Ad scale as reported by adolescents (N=150)

Stressful event	Frequency (n)	Percentage (%)
Death of a parent	4	2.60
Parental pressure for academic performance	123	82.00
Fall in love	55	36.60
Academic workloads	114	76.00
Lower grade	101	67.30
Failed in examination	35	23.30
Upcoming examination	55	36.60
Divorce of parents	3	2.00
Break up of relationship	23	15.30
Internet addiction	88	58.60
Having step parents	1	0.66
Sexual harassment	9	6.00
Failure to get admission	17	11.30
Parental separation	9	6.00
Death of a close family member	9	6.00
Serious illness requiring hospitalization	23	15.30
Serious illness requring hospitalization of sibling	4	2.60
Discord with parents	66	44.00
Trouble with bully	30	20.00
Beginning or ending school	13	8.60
Sex problem	3	2.00
Parental discord	39	26.00
Birth of a sibling	25	16.60
Discord with peer	21	14.00
Serious illness of a family member	7	4.60
Lack of boy or girl friend	22	14.60
Discord with sibling	48	32.00

Loss of academic year	8	5.30
Serious illness requiring hospitalization of parent	2	1.30
Harsh behavior of teacher	55	36.60
Loss of job of a parent	15	10.00
Lack of recreational facilities	44	29.30
Brother or sister living home	9	6.00
Change of school	12	8.00
Outstanding personal achievement	23	15.30
Theft of personal belongings	34	22.60
Change in personal habit	15	10.00
Relocation of family	12	8.00
Lack of school attendance	20	13.30
Change in family role	2	1.30
Minor violation of law	39	26.00
Outstanding achievement of a sibling	24	16.00

Table 3: Distribution of adolescents according to stress severity (N=150) as per DSS-Ad scale.

Group	Public Sch. n (%)	Private Sch. n (%)	Total	Chi-square	P Value
Mild	-	10 (100)	10 (6.7)	10.56	0.005
Moderate	10 (66.7)	5 (33.3)	15 (10)		
Severe	65 (52)	60 (48)	125 (83.3)		

Table 4: Distribution of SDQ scores and the prevalence of abnormal, borderline and normal scores as per SDQ-SR scale.

Scales	Mean score	Standard deviation	Normal, n (%)	Borderline, n (%)	Abnormal, n (%)
Total SDQ difficulties score (range 0–40)	15.89	5.08	72 (48)	37 (24.7)	41 (27.3)
Emotional problems	3.77	2.24	113 (75.3)	21 (14)	16 (10.7)
Conduct problems	3.02	1.52	101 (67.3)	21 (14)	28 (18.7)
Hyperactivity problems	4.57	1.68	109 (72.7)	20 (13.3)	21 (14)
Peer problems	4.53	1.49	42 (28)	71 (47.3)	37 (24.7)
Prosocial behaviors	7.5	1.97	129 (86)	9 (6)	12 (8)

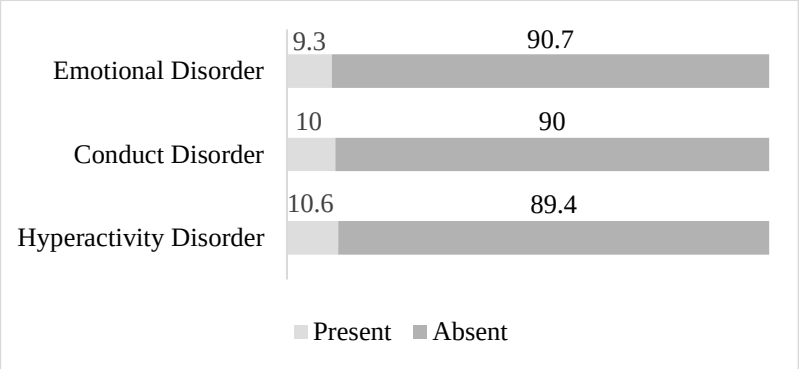

Figure 2: Prevalence of predictive psychiatric disorders in adolescents

Table 5: Association of stress level with emotional, conduct and hyperactivity disorders in adolescents (N=150)

Stress level	Normal score/Borderline score, n (%)	Abnormal score, n (%)	Chi-square	P Value
Emotional Disorder				
Mild	10 (100)	-	3.58	0.047
Moderate	15 (100)	-		
Severe	109 (87.2)	16 (12.8)		
Conduct Disorder				
Mild	9 (90)	1 (10)	1.13	0.568
Moderate	11 (73.3)	4 (26.7)		
Severe	102 (81.6)	23 (18.4)		
Hyperactivity Disorder				
Mild	9 (90)	1 (10)	0.15	0.925
Moderate	13 (86.7)	2 (13.3)		
Severe	107 (85.6)	18 (14.4)		

Table 6: Association between stressor types and predictive psychiatric disorders

Stress type	Emotional disorder	Conduct Disorder	Hyperactivity disorder
Conjugal	-0.108	0.021	0.036
Family	-0.117	0.164	0.074
Living circumstances	0.269	0.164	0.07
Interpersonal	0.029	0.179	0.087
Educational	0.245	0.177	0.126
Legal	-0.056	0.134	0.022
Physical illness/injury	0.203	0.167	0.044
Others	0.179	0.162	0.056

Table 7: Association of sociodemographic variables with stress level (N=150)

Variable	Level	Mild n (%)	Moderate n (%)	Severe n (%)	Chi-square	P value
Class (grade)	9th	10(8.1)	9 (7.3)	104 (84.6)	7.23	0.027
	10th	-	6 (22.2)	21 (77.8)		
Gender	Female	3 (4)	13 (17.3)	59 (78.7)	10.05	0.007
	Male	7 (9.3)	2 (2.7)	66 (88)		
Family type	Nuclear	9 (7.3)	10 (8.1)	105 (84.7)	3.21	0.201
	Extended	1 (3.8)	5 (19.2)	20 (76.9)		
Monthly income	10-30	2 (4.3)	8 (17.4)	36 (78.3)	4.36	0.113
	>30	8 (7.7)	7 (6.7)	89 (85.6)		
Marital status of parents	Married	8 (5.9)	13 (9.6)	114 (84.4)	4.72	0.58
	Separated	1 (12.5)	1 (12.5)	6 (75)		
	Divorced	-	-	3 (100)		
	Widow	1 (25)	1 (25)	2 (50)		

Table 8: Association of Sociodemographic Variables with Emotional, Conduct, and Hyperactivity Disorders among Children (N=150)

Variable	Level	Emotional disorder		P value	Conduct Disorder		P value	Hyperactivity disorder		P value
		Normal n (%)	Abnormal n (%)		Normal n (%)	Abnormal n (%)		Normal n (%)	Abnormal n (%)	
School type	Public	68 (90.6)	7 (9.4)	0.777	60 (80)	15 (20)	0.506	65 (86.7)	10 (13.4)	0.801
	Private	66 (88)	9 (12)		62 (82.7)	13 (17.3)		64 (85.3)	11 (14.7)	
Class (grade)	9th	109 (88.6)	14 (11.4)	0.738	101 (82.1)	22 (17.9)	0.592	107 (87)	17 (14)	0.539
	10th	25 (92.6)	2 (7.4)		21 (77.8)	6 (22.2)		22 (81.5)	5 (18.5)	
Gender	Female	62 (82.7)	13 (17.3)	0.008**	58 (77.3)	17 (22.7)	0.295	65 (86.7)	10 (13.3)	1
	Male	72 (96)	3 (4)		64 (85.3)	11 (14.7)		64 (85.3)	11 (14.7)	
Family type	Nuclear	111 (89.5)	13 (10.5)	1	101 (81.5)	23 (82.1)	1	106 (85.5)	18 (14.5)	1
	Extended	23 (88.5)	3 (11.5)		21 (80.8)	5 (19.2)		23 (88.5)	3 (11.5)	
Monthly income	Oct-30	42 (91.3)	4 (8.7)	0.777	38 (82.6)	8 (17.4)	1	38 (82.6)	8 (17.4)	0.45
	>30	92 (88.5)	12 (11.5)		84 (80.8)	20 (19.2)		91 (87.5)	13 (12.5)	
Marital status of parents	Married	121 (89.6)	14 (10.4)	0.462	110 (81.5)	25 (18.5)	0.324	114 (84.4)	21 (15.6)	0.438
	Separated	6 (75)	2 (25)		5 (62.5)	3 (37.5)		8 (100)	-	
	Divorced	3 (100)	-		3 (100)	-		3 (100)	-	
	Widow	4 (100)	-		4 (100)	-		4 (100)	-	

DISCUSSION

Emotional and behavioural problems of adolescents are the leading cause of disease burden in young population [16]. This study explored the association between psychosocial stressors and the likelihood of developing psychiatric disorders among adolescents aged 14 to 17 years from Bangla medium schools. This section presents the major findings based on data from 150 participants, comparing them with existing literature and offering possible explanations for the observed outcomes. The mean age of participants was approximately 15 years, aligning with the National Education Policy 2010, which sets the minimum age for Class IX admission at 14 [17]. The male-to-female ratio was 1:1, consistent with national trends in secondary education enrollment [18]. Most adolescents (82.7%) lived in nuclear families, a trend attributed to increased education, employment opportunities, urbanization, and access to social development services [19]. Parental marital separation, divorce, or widowhood was reported in 10% of cases, consistent with rising national divorce rates [20]. A striking 83.3% of adolescents reported severe stress, while 10% had moderate and 6.7% had mild stress. These findings contrast with those of Mullick et al., who reported 60% with mild, 28% with moderate, and 16% with severe stress using the DSS-Ad scale [21]. Common stressors in this study included academic pressure, exam-related anxiety, family conflict, romantic relationships, excessive internet use, bullying, and harsh teacher behavior. Similar stressors were noted in Indian adolescents, where 63.5% reported academic stress, and in a Bangladeshi study where romantic breakups, family disruptions, and school failures were prominent [10,22]. The American Psychological Association (2022) also identified academic and social pressures, sexual development, and life transitions as key adolescent stressors [23]. Psychiatric screening revealed 9.3% of adolescents had emotional disorders, 10% had conduct disorder, and 10.6% had hyperactivity disorder. These rates are comparable to Indian studies reporting prevalence from 23.33% to 31.6% [24-26]. In Bangladesh, Jesmin et al. found 18% of children and adolescents had psychiatric disorders, with 9% showing behavioral and 15% emotional disorders [27]. The GSHS reported 11% of students felt lonely and 4.9% had considered suicide [28]. Another study found 18.7% of 14–17 year olds had psychiatric disorders, with emotional problems more common in girls [29]. WHO also identified depression (4%) and anxiety (3%) as common issues among Bangladeshi youth [18]. This study found emotional problems were significantly associated with severe stress. Previous studies linked stress in adolescents to anger and depression, anxiety, poor peer relationships, and poor sleep [11,30]. Stress can disrupt communication and emotional regulation, heightening conflict and reducing empathy [31-33]. However, no significant association was observed between stress and either conduct or hyperactivity disorders. Risk factors for conduct disorder include childhood abuse, neglect, poor parenting, low intelligence, poverty, and maternal psychopathology, with early onset often before age 10 [34,35]. The genetic basis of conduct and hyperactivity disorders may explain the lack of association with stress in this age group [36,37]. Gender and school-type analyses revealed that females were more likely to report moderate stress, consistent with earlier findings [38]. While other studies reported higher stress among private school students, this study found mild stress more common in private school students, with no significant school-type differences for moderate or severe stress [39]. Grade IX students reported more mild stress, possibly due to lower academic pressure compared to SSC-focused Grade X students. A significant correlation was found between psychosocial stressors and psychiatric disorders. Emotional problems were associated with stress from living conditions (τ=0.269) and education (τ=0.245), while conduct problems correlated with family issues (τ=0.164), living circumstances (τ=0.164), interpersonal relations (τ=0.179), and educational stress (τ=0.177). These findings reject the null hypothesis and confirm the presence of meaningful associations. Academic stress, family dynamics, peer pressure, and future concerns can cause chronic emotional distress [40]. Interpersonal and family problems can also lead to conduct issues due to impaired social coping [41].

In summary, the study underscores a clear relationship between psychosocial stressors and predictive psychiatric disorders, particularly emotional problems, in adolescents. These insights highlight the need for school-based mental health screening and early intervention strategies.

Limitations of the study:

- Purposive sampling technique to select study participants and unequal number of participants from both grades might arise selection bias.
- Long-term studies are better suited for identifying causal relationships, whereas this study's cross-sectional design might restrict the ability to establish causality.
- The study relied on self-reported data, which might subject to self-desirability, response and memory biases. Moreover, screening tool can only predict a disorder but can't diagnose confirmly.
- Additionally, as adolescents were selected only from Bangla medium schools in Dhaka city, the results might not be generalized for other population.
- Lastly, it was challenging to find comparable studies with similar designs and tools for comparison.

CONCLUSION AND RECOMMENDATIONS

Majority of the adolescents (83.3%) reported severe level of stress in this study. Findings also suggested 9.3% of adolescents had emotional disorder, 10% Conduct Disorder and 10.6% had hyperactivity disorder. Most of them were female adolescents. Positive associations were found between stress level and development of emotional disorders in adolescents. This study reveals a significant correlation between psychosocial stressors and predictive psychiatric disorders. Specifically, emotional problems were notably associated with stresses related to living circumstances and education, while conduct problems showed links with family life, living circumstances, interpersonal relationships and education. These findings underscore the importance of addressing these stressors to mitigate the risk of psychiatric disorders in this vulnerable population.

Recommendations:

- Implementation of stress management programs in educational institutions and community settings to help adolescents to cope up their stress.
- Periodic screening programs to identify and intervene early in schools and healthcare settings.
- Providing parenting education programs that focus on effective communication, emotional support and promoting a positive family environment.
- Collaboration between education and mental health sectors involving teachers and school staffs.
- Lastly, further research to explore the causal relationship and other additional factors contributing to stress and mental health problems in adolescents is required.

Funding: No funding sources

Conflict of interest: No conflict.

Ethical approval: The study was approved by the Institutional Ethics Committee.

REFERENCES

1. World Health Organization. Mental health status of adolescents in South-East Asia: Evidence for action. InMental health status of adolescents in South-East Asia: evidence for action 2017.
2. Kessler RC, Berglund P, Demler O, Jin R, Merikangas KR, Walters EE. Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. Archives of general psychiatry. 2005 Jun 1;62(6):593-602.

3. Kim-Cohen J, Caspi A, Moffitt TE, Harrington H, Milne BJ, Poulton R. Prior juvenile diagnoses in adults with mental disorder: developmental follow-back of a prospective-longitudinal cohort. Archives of general psychiatry. 2003 Jul 1;60(7):709-17.
4. Patton GC, Coffey C, Romaniuk H, Mackinnon A, Carlin JB, Degenhardt L, Olsson CA, Moran P. The prognosis of common mental disorders in adolescents: a 14-year prospective cohort study. The Lancet. 2014 Apr 19;383(9926):1404-11.
5. Holtzman CW, Trotman HD, Goulding SM, Ryan AT, Macdonald AN, Shapiro DI, Brasfield JL, Walker EF. Stress and neurodevelopmental processes in the emergence of psychosis. Neuroscience. 2013 Sep 26;249:172-91.
6. Holder MK, Blaustein JD. Puberty and adolescence as a time of vulnerability to stressors that alter neurobehavioral processes. Frontiers in neuroendocrinology. 2014 Jan 1;35(1):89-110.
7. March-Llanes J, Marqués-Feixa L, Mezquita L, Fañanás L, Moya-Higueras J. Stressful life events during adolescence and risk for externalizing and internalizing psychopathology: a meta-analysis. European child & adolescent psychiatry. 2017 Dec;26:1409-22.
8. World Health Organization. Invest in mental health. Geneva: WHO. 2003.
9. Parikh R, Sapru M, Krishna M, Cuijpers P, Patel V, Michelson D. "It is like a mind attack": stress and coping among urban school-going adolescents in India. BMC psychology. 2019 Dec;7:1-9.
10. Yesmin R, Kabir AN, Begum A, Tasnim S. Stressful Life Events and Risk of Illness among Urban Adolescents in Bangladesh. Open Journal of Depression. 2022 Mar 9;11(1):1-3.
11. Dey BK. Loneliness and Aggression of the Adolescents in Chittagong. Chittagong University Journal of Biological Sciences. 2019:153-66.
12. Alam MF, Ahmed HU, Alam MT, Sarkar M. National Mental Health Survey. Dhaka: National Institute of Mental Health; 2019.
13. Hossain MD, Ahmed HU, Chowdhury WA, Niessen LW, Alam DS. Mental disorders in Bangladesh: a systematic review. BMC psychiatry. 2014 Dec;14:1-8.
14. Ministry of Health and Family Welfare Bangladesh. National Strategy for Adolescent Health 2017-2030 [Internet]. Dhaka: Ministry of Health and Family Welfare; 2016 [cited 2025 Apr 5]. Available from: https://stage-adolescent-health.dnet.org.bd/uploads/policy_guideline/1617867478_NationalPlanofActionforAdolescentHealthStrategy20172030F.pdf
15. Weist MD, Rubin M, Moore E, Adelsheim S, Wrobel G. Mental health screening in schools. Journal of school health. 2007 Feb;77(2):53-8.
16. Sawyer MG, Arney FM, Baghurst PA, Clark JJ, Graetz BW, Kosky RJ, Nurcombe B, Patton GC, Prior MR, Raphael B, Rey JM. The mental health of young people in Australia: key findings from the child and adolescent component of the national survey of mental health and well-being. Australian & New Zealand Journal of Psychiatry. 2001 Dec;35(6):806-14.
17. Ministry of Education. Education Policy 2010 [Internet]. Dhaka: Government of Bangladesh; 2010 [cited 2025 Apr 5]. p. 86. Available from: https://reliefweb.int/sites/reliefweb.int/files/resources/02.NationalEducation-Policy-2010-English.pdf.
18. United Nations Children's Fund. Bangladesh Education Fact Sheet 2020 [Internet]. New York: UNICEF; 2020 [cited 2025 Apr 5]. Available from: https://data.unicef.org/wp-content/uploads/2021/05/BangladeshEducation-Fact-Sheets_V7.pdf
19. Samad M. Marriage in changing family pattern of Bangladesh: The present trends. International Journal of Social Work and Human Services Practice. 2015 Oct 3;3(4):155-61.
20. The Financial Express. Rising trend of divorce in Bangladesh [Internet]. 2023 [cited 2025 Apr 5]. Available from: https://thefinancialexpress.com.bd/views/opinions/rising-trend-of-divorce-in-bangladesh.
21. Mullick MS, Algin S, Islam M, Phillipson A, Nahar JS, Morshed NM, Chowdhury HR, Shahid SF. Dhaka stress scale-adolescent: A scale for assessing psychosocial stressors among adolescents. Bangabandhu Sheikh Mujib Medical University Journal. 2019 Dec 23;12(4):167-76.
22. Deb S, Strodl E, Sun H. Academic stress, parental pressure, anxiety and mental health among Indian high school students. International Journal of Psychology and Behavioral Science. 2015;5(1):26-34.
23. American Psychological Association. How to help children and teens manage their stress. American Psychological Association. Retrieved September. 2019;22:2022.
24. Malhotra S, Patra BN. Prevalence of child and adolescent psychiatric disorders in India: a systematic review and meta-analysis. Child and adolescent psychiatry and mental health. 2014 Dec;8:1-9.

25. Harikrishnan U, Arif A, Sobhana H. Assessment of mental health status among school going adolescents in North East India: A cross sectional school based survey. Asian journal of psychiatry. 2017 Dec 1;30:114-7.
26. Pathak R, Sharma RC, Parvan UC, Gupta BP, Ojha RK, Goel NK. Behavioural and emotional problems in school going adolescents. The Australasian medical journal. 2011 Jan 31;4(1):15.
27. Jesmin A, Mullick MS, Rahman KM, Muntasir MM. Psychiatric disorders in children and adolescents attending pediatric out patient departments of tertiary hospitals. Oman medical journal. 2016 Jul;31(4):258.
28. Choudhury KN, Agarwal N, Hakim F, Zaman MM. Ministry of Health & Family Welfare Report of first Global School-based Student Health Survey (GSHS) Bangladesh, 2014.
29. Mallik CI, Radwan RB. Psychiatric disorders among 14-17 years school going Bangladeshi adolescents. International journal of psychiatry research. 2020;3(1):1-6.
30. Islam MS, Rahman ME, Moonajilin MS, van Os J. Prevalence of depression, anxiety and associated factors among school going adolescents in Bangladesh: Findings from a cross-sectional study. Plos one. 2021 Apr 1;16(4):e0247898.
31. Dissing AS, Jørgensen TB, Gerds TA, Rod NH, Lund R. High perceived stress and social interaction behaviour among young adults. A study based on objective measures of face-to-face and smartphone interactions. PloS one. 2019 Jul 26;14(7):e0218429.
32. Rued HA, Hilmert CJ, Strahm AM, Thomas LE. The influence of stress on attentional bias to threat: An angry face and a noisy crowd. Psychonomic bulletin & review. 2019 Jun 15;26(3):943-50.
33. Wahjudi JW, Findyartini A, Kaligis F. The relationship between empathy and stress: a cross-sectional study among undergraduate medical students. Korean journal of medical education. 2019 Aug 26;31(3):215.
34. Murray J, Farrington DP. Risk factors for conduct disorder and delinquency: Key findings from longitudinal studies. The Canadian Journal of Psychiatry. 2010 Oct;55(10):633-42.
35. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders. 5th ed. Arlington (VA): American Psychiatric Publishing; 2013.
36. Silberg J, Moore AA, Rutter M. Age of onset and the subclassification of conduct/dissocial disorder. Journal of Child Psychology and Psychiatry. 2015 Jul;56(7):826-33.
37. Faraone SV, Larsson H. Genetics of attention deficit hyperactivity disorder. Molecular psychiatry. 2019 Apr;24(4):562-75.
38. Ghosh SM. Academic stress among government and private high school students. The International Journal of Indian Psychology. 2016;3(2):119-25.
39. Thenmozhi P. Comparison of academic stress between government and private school higher secondary students. The International Journal of Indian Psychology. 2020;8:545-51.
40. Hosseinkhani Z, Hassanabadi HR, Parsaeian M, Karimi M, Nedjat S. Academic stress and adolescents mental health: A multilevel structural equation modeling (MSEM) study in northwest of Iran. Journal of research in health sciences. 2020 Oct 31;20(4):e00496.
41. Sajadi S, Raheb G, Maarefvand M, Alhosseini KA. Family problems associated with conduct disorder perceived by patients, families and professionals. Journal of education and health promotion. 2020 Jan 1;9(1):184.