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The Prevalence and Pattern of Psychosocial Disorders among Secondary School-Going Students in Urban Areas of Bangladesh

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Abstract **Original Research Article**

***Background*:** Adolescent mental health is a growing concern globally, with anxiety disorders being particularly prevalent. This study aims to explore the prevalence and patterns of anxiety among secondary school-going students by examining the interplay of various psychosocial, familial, and health-related factors. ***Methods*:** This cross-sectional study was conducted with 600 secondary school students using the Generalized Anxiety Disorder-7 (GAD-7) scale. The study assessed the prevalence of anxiety and its correlation with demographic factors (age, gender), living situation, academic performance, health and lifestyle factors (BMI, chronic health conditions, sleep patterns), and family dynamics. ***Results*:** The analysis revealed that 52.67% of participants exhibited none to minimal anxiety symptoms, while 36.33% experienced mild anxiety, 8.00% moderate anxiety, and 3.00% severe anxiety. Age and gender showed no significant correlation with overall anxiety levels. However, living situation, academic performance, and health factors like BMI and sleep patterns were significantly associated with anxiety levels. Family dynamics, including income level and parenting style, also showed a strong correlation with anxiety. Students with severe anxiety were more likely to have lower academic performance, experience psychosocial challenges, and come from less supportive family environments. ***Conclusion*:** The study highlights the multifaceted nature of anxiety disorders in adolescents, which is influenced by a complex interplay of individual, familial, and environmental factors. These findings underscore the need for holistic approaches in addressing adolescent anxiety, involving family-based interventions, academic support, and health promotion strategies. The study contributes valuable insights into adolescent mental health, emphasizing the importance of early identification and comprehensive management of anxiety disorders.

Keywords: Adolescent anxiety, GAD-7 scale, mental health, academic performance, family dynamics, psychosocial factors.

INTRODUCTION

Mental health during adolescence is a critical determinant of health and well-being throughout life. The prevalence and patterns of psychosocial disorders in secondary school-going students, particularly in urban areas of Bangladesh, present a complex interplay of global trends and local socio-cultural dynamics. Globally, the importance of mental health in adolescents cannot be overstated. Adolescence is a period marked by rapid physical, emotional, and social changes, making it a critical time for the development of mental health disorders [1, 2]. Studies have shown that common psychosocial disorders among adolescents include anxiety, depression, and behavioral disorders [3, 4]. These disorders significantly impact the quality of life and can have long-term consequences if not addressed timely and effectively. The global relevance of psychosocial disorders in secondary school students is evident from various studies conducted across different cultural and socio-economic backgrounds. For

instance, a study on the impact of bullying on mental health among secondary school students highlighted the prevalence of physical and psychosocial victimization and its correlation with mental health issues [5]. Similarly, the effectiveness of interventions like cycling programs during the COVID-19 pandemic in improving adolescent mental health underscores the importance of addressing psychosocial well-being in this demographic [6]. Narrowing down to the specific context of urban areas in Bangladesh, the unique socio-cultural and educational dynamics play a crucial role in shaping the mental health landscape. Bangladesh, with its distinct socio-cultural environment, presents unique challenges and opportunities in understanding and addressing adolescent mental health. A study conducted in Dhaka, Bangladesh, revealed significant levels of depression and anxiety among school-going adolescents, with factors such as unsatisfactory sleep and cigarette smoking being associated with these conditions [7]. This finding is crucial in understanding the specific mental health challenges faced by adolescents in urban Bangladeshi schools. Moreover, the existing research gaps, particularly in the context of urban Bangladeshi secondary schools, necessitate a focused exploration. While some studies have provided insights into the prevalence of mental health issues among adolescents in similar urban and developing country contexts, there is a need for more comprehensive research specifically targeting the Bangladeshi demographic [8, 9]. Theories and models explaining the prevalence or patterns of psychosocial disorders in adolescents, such as the association between family dynamics and youth mental health, offer valuable frameworks for this exploration [10]. Additionally, methodological approaches from past research, such as the assessment of knowledge among school teachers regarding handling children with emotional and behavioral problems, provide a foundation for developing effective strategies to address these disorders in the Bangladeshi context [11]. The exploration of health-risk behaviors among adolescents in other developing countries, like China, also offers comparative insights that could be relevant for understanding the situation in Bangladesh [12].

METHODS

This cross-sectional study was conducted at different schools of Dhaka north city corporation, Dhaka, Bangladesh. A structured data collection form was used to initially select a total of 600 participants, focusing specifically on students currently enrolled in grades 9 and 10. The inclusion criteria for the study encompassed both male and female students attending these grades who provided informed consent, with parental consent obtained for participants under 18. Students outside the specified grade levels, those who did not provide consent, and students absent or unavailable during the data collection period were excluded from the study. The data collection form was meticulously designed to gather comprehensive information about the family and school background of the students, crucial for assessing the psychosocial environment and its impact on adolescent mental health. The Generalized Anxiety Disorder-7 (GAD-7) scale, a well-validated tool, was employed to measure the levels of depression and anxiety among the participants [13]. Adhering to the ethical standards of the institutional research committee and the 1964 Helsinki declaration and its later amendments, informed consent was diligently obtained from all individual participants. Data collected from the structured forms and GAD-7 scales were subjected to rigorous statistical analysis. Descriptive statistics were utilized to summarize the demographic characteristics of the study population, and inferential statistics were employed to explore the relationships between depression, anxiety symptoms, and various demographic and background factors.

RESULTS

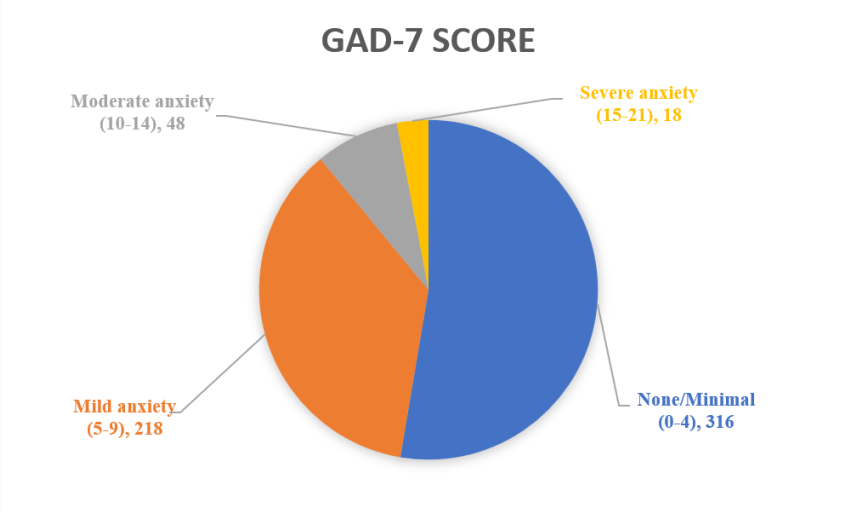

Figure 1: Distribution of participants by GAD-7 Score interpretation (N=600)

The study's analysis of 600 participants using the GAD-7 scale showed that 52.67% (n=316) exhibited none to minimal anxiety symptoms (scores 0-4). Mild anxiety was observed in 36.33% (n=218) of the students (scores 5-9), while 8.00% (n=48) experienced moderate anxiety (scores 10-14). Severe anxiety was present in 3.00% (n=18) of the participants (scores 15-21).

Table 1: Distribution of baseline characteristics among the different anxiety characteristics (N=600)

Variables	GAD Score				p-value
	None/Minimal (n=316)	Mild anxiety (n=218)	Moderate anxiety (n=48)	Severe anxiety (n=18)	
	f (%)	f (%)	f (%)	f (%)	
Age					
13	20 (6.3%)	10 (4.6%)	6 (12.5%)	0 (0.0%)	**0.001**
14	68 (21.5%)	72 (33.0%)	14 (29.2%)	2 (11.1%)	
15	132 (41.8%)	92 (42.2%)	12 (25.0%)	10 (55.6%)	
16	80 (25.3%)	42 (19.3%)	16 (33.0%)	4 (22.2%)	
17	16 (5.1%)	2 (0.9%)	0 (0.0%)	2 (11.1%)	
Gender					
Male	140 (44.3%)	74 (33.9%)	18 (37.5%)	6 (33.3%)	0.102
Female	176 (55.7%)	144 (66.1%)	30 (62.5%)	12 (66.7%)	
Living Situation					
With Parents	310 (98.1%)	216 (99.1%)	42 (87.5%)	16 (100.0%)	**<0.001**
With relatives	6 (1.9%)	2 (0.9%)	4 (8.3%)	0 (0.0%)	
In a hostel	0 (0.0%)	0 (0.0%)	2 (4.2%)	0 (0.0%)	

Table 1 presents the distribution of baseline characteristics among students with different levels of anxiety as measured by the GAD-7 score. Age distribution varied significantly across anxiety levels (p=0.001). Among those with none/minimal anxiety, 41.8% (n=132) were 15 years old, the largest age group in this category. In contrast, the severe anxiety group had a higher proportion of 15-year-olds at 55.6% (n=10). The 14-year-old group showed a higher prevalence of mild anxiety, with 33.0% (n=72) falling into this category. Gender differences were observed, though not statistically significant (p=0.102). In the none/minimal anxiety group, 55.7% (n=176) were female, compared to 66.7% (n=12) in the severe anxiety group, indicating a higher proportion of females in the higher anxiety categories. Living situation showed a significant association with anxiety levels (p<0.001). A vast majority of students with none/minimal anxiety (98.1%, n=310) and severe anxiety (100%, n=16) lived with parents. Notably, 8.3% (n=4) of students with moderate anxiety lived with relatives, and 4.2% (n=2) were in a hostel, indicating a potential link between living arrangements and increased anxiety levels.

Table 2: Distribution of Health and Lifestyle Factors Among the different anxiety characteristics (N=600)

Variables	GAD Score				p-value
	None/Minimal (n=316)	Mild anxiety (n=218)	Moderate anxiety (n=48)	Severe anxiety (n=18)	
	f (%)	f (%)	f (%)	f (%)	
BMI					
Underweight	106 (33.5%)	70 (32.1%)	8 (16.7%)	2 (11.1%)	**<0.001**
Normal	178 (56.3%)	108 (49.5%)	26 (54.2%)	14 (77.8%)	
Overweight	25 (7.9%)	36 (16.5%)	12 (25.0%)	0 (0.0%)	
Obesity I	5 (1.6%)	4 (1.8%)	2 (4.2%)	2 (11.1%)	
Obesity II	2 (0.6%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Chronic Health Condition					
Asthma	4 (1.3%)	2 (0.9%)	2 (4.2%)	0 (0.0%)	**<0.001**
Cold-Cough/Recurrent Fever	0 (0.0%)	4 (1.8%)	2 (4.2%)	0 (0.0%)	
Vision Problem	2 (0.6%)	10 (4.6%)	0 (0.0%)	2 (11.1%)	
Allergy	6 (1.9%)	2 (0.9%)	0 (0.0%)	0 (0.0%)	
Gastric	2 (0.6%)	4 (1.8%)	0 (0.0%)	2 (11.1%)	
Migraine	0 (0.0%)	2 (0.9%)	0 (0.0%)	0 (0.0%)	
Anemia	0 (0.0%)	0 (0.0%)	0 (0.0%)	2 (11.1%)	
Skin Disorder	0 (0.0%)	0 (0.0%)	2 (4.2%)	0 (0.0%)	

Variables	GAD Score				p-value
	None/Minimal (n=316)	Mild anxiety (n=218)	Moderate anxiety (n=48)	Severe anxiety (n=18)	
	f (%)	f (%)	f (%)	f (%)	
Others	2 (0.6%)	2 (0.9%)	4 (8.3%)	2 (11.1%)	
No	300 (94.9%)	192 (88.1%)	38 (79.2%)	10 (55.6%)	
Average Sleep Hours					
Severely Low	79 (25.0%)	68 (31.2%)	14 (29.2%)	8 (44.4%)	**0.032**
Low	212 (67.1%)	134 (61.5%)	24 (50.0%)	8 (44.4%)	
Recommended	21 (6.6%)	16 (7.3%)	9 (18.8%)	2 (11.1%)	
Above recommendation	4 (1.3%)	0 (0.0%)	1 (2.1%)	0 (0.0%)	

Table 2 illustrates the distribution of health and lifestyle factors among students with varying levels of anxiety as indicated by their GAD-7 scores. Body Mass Index (BMI) showed a significant association with anxiety levels ($p<0.001$). In the none/minimal anxiety group, 56.3% (n=178) had a normal BMI, while 77.8% (n=14) of students with severe anxiety were in the normal BMI range. Notably, the proportion of overweight students was higher in the mild anxiety group at 16.5% (n=36) compared to 7.9% (n=25) in the none/minimal anxiety group. Obesity I was more prevalent in the severe anxiety group at 11.1% (n=2). Chronic health conditions varied significantly across different anxiety levels ($p<0.001$). Vision problems were more prevalent in the severe anxiety group at 11.1% (n=2), compared to 0.6% (n=2) in the none/minimal anxiety group. Gastric issues and anemia were also notably higher in the severe anxiety group at 11.1% (n=2) for each condition. The majority of students with none/minimal anxiety, 94.9% (n=300), reported no chronic health conditions. Average sleep hours were associated with anxiety levels ($p=0.032$). Severely low sleep hours were reported by 44.4% (n=8) of students with severe anxiety, higher than 25.0% (n=79) in the none/minimal anxiety group. A majority of students with none/minimal anxiety, 67.1% (n=212), reported low sleep hours, while 18.8% (n=9) of those with moderate anxiety reported recommended sleep hours.

Table 3: Distribution of Academic and Extracurricular Profile among the different anxiety characteristics (N=600)

Variables	GAD Score				p-value
	None/Minimal (n=316)	Mild anxiety (n=218)	Moderate anxiety (n=48)	Severe anxiety (n=18)	
	f (%)	f (%)	f (%)	f (%)	
Academic Performance					
Excellent	40 (12.7%)	18 (8.3%)	4 (8.3%)	0 (0.0%)	**<0.001**
Good	216 (68.4%)	144 (66.1%)	26 (54.2%)	8 (44.4%)	
Average	60 (19.0%)	54 (24.8%)	16 (33.3%)	6 (33.3%)	
Below Average	0 (0.0%)	2 (0.9%)	2 (4.2%)	4 (22.2%)	
Participation in Extracurricular Studies					
Yes	54 (17.1%)	58 (26.6%)	10 (20.8%)	4 (22.2%)	0.07
No	262 (82.9%)	160 (73.4%)	38 (79.2%)	14 (77.8%)	
Hours of Self Study (Mean±SD)					
Mean±SD Study Hours	4.58±2.19	4.37±2.25	3.33±1.41	3.22±1.73	**<0.001**

Table 3 presents the distribution of academic performance and extracurricular activities among students with different anxiety levels, as indicated by their GAD-7 scores. Academic performance showed a significant correlation with anxiety levels ($p<0.001$). In the none/minimal anxiety group, 68.4% (n=216) of students were rated as having 'good' academic performance, compared to 44.4% (n=8) in the severe anxiety group. Notably, none of the students in the severe anxiety category were rated as 'excellent', and 22.2% (n=4) were rated as 'below average'. Participation in extracurricular activities, although not statistically significant ($p=0.07$), showed a trend where 26.6% (n=58) of students with mild anxiety participated in such activities, higher than the 17.1% (n=54) in the none/minimal anxiety group. The average self-study hours also varied significantly across different anxiety levels ($p<0.001$). Students with none/minimal anxiety reported higher mean self-study hours (4.58±2.19) compared to those with severe anxiety (3.22±1.73).

Table 4: Distribution of Psychosocial Challenges and Experiences among the different anxiety characteristics (N=600)

Variables	GAD Score				p-value
	None/Minimal (n=316)	Mild anxiety (n=218)	Moderate anxiety (n=48)	Severe anxiety (n=18)	
	f (%)	f (%)	f (%)	f (%)	
Experience of Bullying or Harassment					
Yes	0 (0.0%)	4 (1.8%)	2 (4.2%)	0 (0.0%)	**0.021**
No	316 (100.0%)	214 (98.2%)	46 (95.8%)	18 (100.0%)	
Feelings of Sadness, Anxiety, Depression					
Yes	23 (7.3%)	14 (6.4%)	9 (18.8%)	2 (11.1%)	**0.033**
No	293 (92.7%)	204 (93.6%)	39 (81.3%)	16 (88.9%)	
Challenges in Controlling Temper or Behavior					
Often	16 (5.1%)	32 (14.7%)	18 (37.5%)	12 (66.7%)	**<0.001**
Sometimes	176 (55.7%)	136 (62.4%)	20 (41.7%)	4 (22.2%)	
Rarely	68 (21.5%)	30 (13.8%)	10 (20.8%)	2 (11.1%)	
Often	56 (17.7%)	20 (9.2%)	0 (0.0%)	0 (0.0%)	
Changes in the Child's Mood or Behavior					
Yes	40 (12.7%)	40 (18.3%)	28 (58.3%)	8 (44.4%)	**<0.01**
No	276 (87.3%)	178 (81.7%)	20 (41.7%)	10 (55.6%)	
Changes in Eating Habits or Appetite					
Yes	28 (8.9%)	58 (26.6%)	20 (41.7%)	8 (44.4%)	**<0.01**
No	288 (91.1%)	160 (73.4%)	28 (58.3%)	10 (55.6%)	

Table 4 details the distribution of psychosocial challenges and experiences among students with varying levels of anxiety, based on their GAD-7 scores. The experience of bullying or harassment showed a significant association with anxiety levels (p=0.021). While none of the students with none/minimal anxiety reported bullying, 4.2% (n=2) of those with moderate anxiety experienced it. However, no cases of bullying were reported in the severe anxiety group. Feelings of sadness, anxiety, or depression were more prevalent in students with higher anxiety levels (p=0.033). While 7.3% (n=23) of students with none/minimal anxiety reported these feelings, the prevalence increased to 18.8% (n=9) in the moderate anxiety group. Challenges in controlling temper or behavior varied significantly across anxiety levels (p<0.001). A substantial 66.7% (n=12) of students with severe anxiety often faced these challenges, compared to only 5.1% (n=16) in the none/minimal anxiety group. Changes in mood or behavior were also significantly associated with anxiety levels (p<0.01). While 12.7% (n=40) of students with none/minimal anxiety reported such changes, the percentage rose dramatically to 58.3% (n=28) in the moderate anxiety group. Similarly, changes in eating habits or appetite were significantly correlated with anxiety (p<0.01). In the severe anxiety group, 44.4% (n=8) reported changes in eating habits, compared to 8.9% (n=28) in the none/minimal anxiety group.

Table 5: Distribution of Family Dynamics of Participants with Depression/Anxiety among the different anxiety characteristics (N=600)

Variables	GAD Score				p-value
	None/Minimal (n=316)	Mild anxiety (n=218)	Moderate anxiety (n=48)	Severe anxiety (n=18)	
	f (%)	f (%)	f (%)	f (%)	
Family income categorized					
Low Income	58 (18.4%)	30 (13.8%)	2 (4.2%)	4 (22.2%)	**<0.001**
Lower Middle Income	144 (45.6%)	124 (56.9%)	20 (41.7%)	10 (55.6%)	
Upper Middle Income	82 (25.9%)	64 (29.4%)	26 (54.2%)	4 (22.2%)	
High Income	32 (10.1%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Parenting Style					
Authoritative	114 (36.1%)	68 (31.2%)	4 (8.3%)	2 (11.1%)	**<0.001**
Supportive	74 (23.4%)	90 (41.3%)	26 (54.2%)	8 (44.4%)	
Mild	124 (39.2%)	60 (27.5%)	16 (33.3%)	8 (44.4%)	
Disinterested	4 (1.3%)	0 (0.0%)	2 (4.2%)	0 (0.0%)	

Variables	GAD Score				p-value
	None/Minimal (n=316)	Mild anxiety (n=218)	Moderate anxiety (n=48)	Severe anxiety (n=18)	
	f (%)	f (%)	f (%)	f (%)	
Family Environment					
Very supportive	135 (42.7%)	62 (28.4%)	12 (25.0%)	6 (33.3%)	**<0.001**
Supportive	174 (55.4%)	140 (64.2%)	24 (50.0%)	8 (44.4%)	
Average	4 (1.3%)	16 (7.3%)	12 (25.0%)	2 (11.1%)	
Not supportive	3 (0.9%)	0 (0.0%)	0 (0.0%)	2 (11.1%)	
Family History of Mental Health Issues					
Yes	0 (0.0%)	7 (3.2%)	4 (8.3%)	0 (0.0%)	**0.001**
No	316 (100%)	211 (96.8%)	44 (91.7%)	18 (100%)	
Child's History of Psychological or Psychiatric Treatment					
Yes	8 (2.5%)	0 (0.0%)	4 (8.3%)	4 (22.2%)	**<0.001**
No	308 (97.5%)	218 (100.0%)	44 (91.7%)	14 (77.8%)	

Table 5 explores the distribution of family dynamics among students with different anxiety levels, as indicated by their GAD-7 scores, in a cohort of 600 participants. Family income showed a significant correlation with anxiety levels ($p<0.001$). A higher percentage of students with severe anxiety (22.2%, n=4) fell into the low-income category compared to 18.4% (n=58) in the none/minimal anxiety group. Notably, none of the students in the high-income category reported severe anxiety. Parenting style was significantly associated with anxiety levels ($p<0.001$). In the severe anxiety group, 44.4% (n=8) reported a supportive parenting style, while only 8.3% (n=4) reported an authoritative style. This contrasts with the none/minimal anxiety group, where 36.1% (n=114) experienced authoritative parenting. The family environment also varied significantly across different anxiety levels ($p<0.001$). While 42.7% (n=135) of students with none/minimal anxiety reported a very supportive family environment, this percentage decreased to 33.3% (n=6) in the severe anxiety group. An average or not supportive family environment was more prevalent among students with moderate and severe anxiety. A family history of mental health issues was more common in students with moderate anxiety, with 8.3% (n=4) reporting such a history, compared to none in the none/minimal anxiety group ($p=0.001$). The child's history of psychological or psychiatric treatment was significantly associated with anxiety levels ($p<0.001$). In the severe anxiety group, 22.2% (n=4) had a history of treatment, markedly higher than 2.5% (n=8) in the none/minimal anxiety group.

Table 6: Correlation Analysis of Psychosocial Factors and GAD-7 Scores among Affected Participants (N=600)

Correlations		Age	Gender	Living Situation	Academic performance	Experience of Bullying or Harassment	Feelings of Sadness, Anxiety, Depression	Family Environment	Challenges in Controlling Temper or Behavior	Total GAD
Age	Pearson Correlation	1	-.323**	-.178**	0.074	.100*	-0.031	-0.032	-0.029	-0.057
	Sig. (2-tailed)		**<0.001**	**<0.001**	0.069	**0.014**	0.45	0.435	0.475	0.164
Gender	Pearson Correlation	-.323**	1	0.032	-.081*	-.081*	-0.063	-0.06	-.156**	.103*

	Sig. (2-tailed)	**<0.001**		0.441	**0.047**	**0.046**	0.121	0.145	**<0.001**	**0.012**
Living Situation	Pearson Correlation	-.178**	0.032	1	.161**	-.181**	0.04	.131**	0.02	.113**
	Sig. (2-tailed)	**<0.001**	0.441		**<0.001**	**<0.001**	0.325	**0.001**	0.631	**0.006**
Academic performance	Pearson Correlation	0.074	-.081*	.161**	1	-0.031	0.022	.222**	-.214**	.215**
	Sig. (2-tailed)	0.069	**0.047**	**<0.001**		0.453	0.582	**<0.001**	**<0.001**	**<0.001**
Experience of Bullying or Harassment	Pearson Correlation	.100*	-.081*	-.181**	-0.031	1	-0.03	-.104*	.115**	-.095*
	Sig. (2-tailed)	**0.014**	**0.046**	**<0.001**	0.453		0.469	**0.011**	**0.005**	**0.02**
Feelings of Sadness, Anxiety, Depression	Pearson Correlation	-0.031	-0.063	0.04	0.022	-0.03	1	0.078	-0.016	-0.062
	Sig. (2-tailed)	0.45	0.121	0.325	0.582	0.469		0.058	0.688	0.128
Family Environment	Pearson Correlation	-0.032	-0.06	.131**	.222**	-.104*	0.078	1	-.174**	.250**
	Sig. (2-tailed)	0.435	0.145	**0.001**	**<0.001**	**0.011**	0.058		**<0.001**	**<0.001**
Challenges in Controlling Temper or Behavior	Pearson Correlation	-0.029	-.156**	0.02	-.214**	.115**	-0.016	-.174**	1	-.385**
	Sig. (2-tailed)	0.475	**<0.001**	0.631	**<0.001**	**0.005**	0.688	**<0.001**		**<0.001**
Total GAD	Pearson Correlation	-0.057	.103*	.113**	.215**	-.095*	-0.062	.250**	-.385**	1
	Sig. (2-tailed)	0.164	**0.012**	**0.006**	**<0.001**	**0.02**	0.128	**<0.001**	**<0.001**	

Table 6 presents a correlation analysis of various psychosocial factors with GAD-7 scores among 600 participants. Age showed a negative correlation with gender (r=-.323, p<0.001) and living situation (r=-.178, p<0.001), but these correlations were not significant with total GAD scores (r=-0.057, p=0.164). Gender was significantly correlated with challenges in controlling temper or behavior (r=-.156, p<0.001) and mildly with total GAD scores (r=.103, p=0.012). Living situation had a significant positive correlation with academic performance (r=.161, p<0.001) and total GAD scores (r=.113, p=0.006). Academic performance showed significant negative correlations with challenges in controlling temper or behavior (r=-.214, p<0.001) and a positive correlation with total GAD scores (r=.215, p<0.001). Experience of bullying or harassment was negatively correlated with family environment (r=-.104, p=0.011) and positively with challenges in controlling temper or behavior (r=.115, p=0.005). It showed a negative correlation with total GAD scores (r=-.095, p=0.02). Feelings of sadness, anxiety, or depression did not show significant correlations with most variables, including total GAD scores (r=-0.062, p=0.128). Family environment was negatively correlated with challenges in controlling temper or behavior (r=-.174, p<0.001) and positively with total GAD scores (r=.250, p<0.001). Challenges in controlling temper or behavior showed the strongest negative correlation with total GAD scores (r=-.385, p<0.001).

DISCUSSION

The analysis of 600 participants by using the GAD-7 scale in this study revealed a nuanced picture of anxiety prevalence among adolescents. A significant 52.67% exhibited none to minimal anxiety symptoms, while 36.33% experienced mild anxiety. Moderate and severe anxiety were observed in 8.00% and 3.00% of the participants, respectively, aligning with evidence that a substantial proportion of adolescents experience some form of anxiety, reflecting a critical public health concern [14, 15]. The variation in anxiety levels across different ages, particularly the higher prevalence of severe anxiety among 15-year-olds (55.6%), suggests a potential developmental aspect of anxiety disorders during adolescence. This age-specific vulnerability could be attributed to puberty-related changes, academic pressures, and social dynamics typical of mid-adolescence [16, 17]. Gender differences, though not statistically significant, revealed a higher proportion of females in the severe anxiety category (66.7%), consistent with literature reporting higher rates of anxiety disorders among adolescent females, possibly due to biological, psychological, and social factors [17, 18]. The living situation's significant association with anxiety levels, with a majority of students in both the none/minimal (98.1%) and severe (100%) anxiety groups living with parents, highlights the importance of family dynamics in adolescent mental health. This finding underscores the need for further exploration of family relationships, support systems, and individual coping mechanisms [19, 20]. The significant association between BMI and anxiety levels, particularly the higher prevalence of overweight in the mild anxiety group (16.5%) and obesity in the severe anxiety group (11.1%), suggests a link between physical health and mental well-being. Chronic health conditions, such as vision problems and gastric issues, were more prevalent in the severe anxiety group, emphasizing the need for comprehensive health assessments. The association between severely low sleep hours and higher anxiety levels further underscores the critical role of sleep in adolescent mental health [21, 22]. Academic performance's significant correlation with anxiety levels, with only 44.4% of students in the severe anxiety group having 'good' academic performance, underscores the detrimental effect of high anxiety on academic achievement. This trend suggests that severe anxiety may not only affect emotional well-being but also impede academic potential. The trend observed in extracurricular activities participation raises interesting considerations, indicating that mild levels of anxiety may motivate some students to engage more in such activities, possibly as a coping mechanism [15, 17, 23]. The significant association between bullying or harassment and anxiety levels, particularly in the moderate anxiety group, aligns with existing research indicating that bullying can be both a cause and a consequence of anxiety. The increased prevalence of feelings of sadness, anxiety, or depression in students with higher anxiety levels further emphasizes the interconnected nature of these emotional states. The substantial challenges in controlling temper or behavior observed in the severe anxiety group highlight the behavioral impact of severe anxiety, suggesting that interventions should also address associated behavioral issues [18, 19]. The findings on family dynamics reveal the significant role of socio-economic and familial factors in adolescent anxiety. The higher percentage of students with severe anxiety in the low-income category suggests that socio-economic stressors might exacerbate anxiety symptoms. The association between parenting style and anxiety levels, with a higher prevalence of supportive parenting in the severe anxiety group, indicates the complexity of family dynamics in relation to adolescent mental health. The family environment's significant variation across different anxiety levels further emphasizes the role of familial support and stability in adolescent mental health [21, 24, 25]. The correlation analysis offers a comprehensive view of the relationships between various psychosocial factors and anxiety levels. The negative correlation between age and gender, and their lack of significant correlation with total GAD scores, suggests that anxiety in adolescents might be more influenced by other psychosocial factors than by age or gender alone. Gender's significant

correlation with challenges in controlling temper or behavior, and its mild correlation with total GAD scores, highlights potential gender differences in the expression and impact of anxiety. The positive correlation between living situation and academic performance, and their association with total GAD scores, underscores the importance of a stable and supportive living environment for academic success and mental well-being [1, 2, 3].

In conclusion, the study's findings highlight the complex and multifaceted nature of anxiety disorders in adolescents, involving a range of psychosocial factors including academic performance, family dynamics, and personal experiences. These insights underscore the need for a holistic and integrated approach to addressing adolescent anxiety, encompassing educational, familial, and individual interventions.

Limitations of the Study

The study was conducted in a single hospital with a small sample size. So, the results may not represent the whole community.

CONCLUSION

The current study has provided critical insights into the prevalence and multifaceted nature of anxiety disorders among this demographic. The findings reveal that a significant proportion of adolescents experience varying degrees of anxiety, with notable implications for their academic performance, psychosocial well-being, and family dynamics. The study underscores the complex interplay between individual, familial, and environmental factors in shaping adolescent mental health. It highlights the need for holistic and integrated approaches to address adolescent anxiety, emphasizing the importance of supportive family environments, tailored educational interventions, and awareness of physical health's impact on mental well-being. This research contributes to the growing body of knowledge on adolescent mental health and underscores the urgency of addressing mental health issues in this vulnerable population, paving the way for more targeted and effective interventions.

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REFERENCES

1. National Academies of Sciences E, Division H and M, Education D of B and SS and, Board on Children Y, Applications C on the N and S behavioral S of AD and I, Backes EP, et al. Adolescent Development. In: The Promise of Adolescence: Realizing Opportunity for All Youth [Internet]. National Academies Press (US); 2019 [cited 2024 Mar 4]. Available from: https://www.ncbi.nlm.nih.gov/books/NBK545476/
2. Fisher, J., Cabral de Mello, M., Izutsu, T., Vijayakumar, L., Belfer, M., & Omigbodun, O. (2011). Adolescent Mental Health in Resource-Constrained Settings: A review of the evidence of the nature, prevalence and determinants of common mental health problems and their management in primary health care. *The International journal of social psychiatry*, *57*, v–vii, 9.
3. Wei, C., Cummings, C. M., Villabø, M. A., & Kendall, P. C. (2014). Parenting behaviors and anxious self-talk in youth and parents. *Journal of Family Psychology*, *28*(3), 299–307.
4. Cederbaum, J. A., Gilreath, T. D., Benbenishty, R., Astor, R. A., Pineda, D., DePedro, K. T., ... & Atuel, H. (2014). Well-being and suicidal ideation of secondary school students from military families. *Journal of Adolescent Health*, *54*(6), 672-677.
5. Ahmed Abd Elhamid, G., Mohamed Mourad, G., & Mohamed Ahmed, F. (2021). Assessment of Bullying and its Effect on Mental Health among Secondary School Students. *Journal of Nursing Science Benha University*, *2*(2), 739–54.
6. Dementyev, F., Fish, B., Opoku, N. Y. S., Tesfaye, L., Chan, J., Ortiz, L., ... & Wilson, S. M. (2023). Middle school cycling program is associated with improved mental health and wellbeing in adolescents during COVID-19. *Frontiers in Sports and Active Living*, *5*. Available from: https://www.frontiersin.org/articles/10.3389/fspor.2023.1255514
7. Islam, M. S., Rahman, M. E., Moonajilin, M. S., & van Os, J. (2021). Prevalence of depression, anxiety and associated factors among school going adolescents in Bangladesh: Findings from a cross-sectional study. *PLoS One*, *16*(4), e0247898.
8. Herbell, K., Breitenstein, S. M., Ault, S., & Eisner, M. (2022). Prevalence and Correlates of Anxiety, Depression, Perceived Stress, and Post-Traumatic Stress Symptoms in Parents with Adolescents in Residential Treatment. *Residential Treatment for Children & Youth*, *39*(3), 312–30.
9. Uleanya, N., Aniwada, E., Okeke, C., Nwoha, S., & Obionu, C. N. (2018). Pattern and predictors of psychosocial disorders among overweight and obese children in Enugu, Southeast Nigeria. *SAJCH South African Journal of Child Health*, *12*, 3–9.
10. Khan, J. R., Muurlink, O., Hu, N., Awan, N., & Lingam, R. (2023). Pregnancy, spousal connectedness, and young married women's mental

health: an analysis of the Bangladesh adolescent health and wellbeing survey. *Arch Womens Ment Health*, *26*(2), 235–44.

11. Anil, K., Laishram, D., & Lakshmi, D. (2024). A Study to Assess the Knowledge Regarding Handling of Children with Emotional and Behaviour Problem in order to Prepare a Self Instruction Module among the Selected Primary School Teachers in Bangalore South. *International Journal of Recent Innovations in Medicine and Clinical Research*, *2*(3), 27–35.
12. Guo, L. (2016). Health-Risk Behaviors among adolescents in China.
13. Spitzer, R. L., Kroenke, K., Williams, J. B. W., & Löwe, B. (2006). A Brief Measure for Assessing Generalized Anxiety Disorder: The GAD-7. *Archives of Internal Medicine*, *166*(10), 1092–7.
14. Victor Mbanuzuru, A., Uwakwe, R., Sochukwu Anyaoku, C., Okwudili Ojimba, A., Chinyere Mbanuzuru, M., Ezenyeaku, C. A., ... & Prosper Okonkwo, U. (2023). Generalized anxiety disorder screening using gad-7 among in-school adolescents of anambra state, nigeria: a comparative study between urban and rural areas. *Child and Adolescent Psychiatry and Mental Health*, *17*(1), 91.
15. Mossman, S. A., Luft, M. J., Schroeder, H. K., Varney, S. T., Fleck, D. E., Barzman, D. H., ... & Strawn, J. R. (2017). The Generalized Anxiety Disorder 7-item (GAD-7) scale in adolescents with generalized anxiety disorder: signal detection and validation. *Annals of clinical psychiatry: official journal of the American Academy of Clinical Psychiatrists*, *29*(4), 227-234A.
16. Ferri, J., Bress, J. N., Eaton, N. R., & Proudfit, G. H. (2014). The impact of puberty and social anxiety on amygdala activation to faces in adolescence. *Developmental neuroscience*, *36*(3-4), 239-249.
17. Deardorff, J., Hayward, C., Wilson, K. A., Bryson, S., Hammer, L. D., & Agras, S. (2007). Puberty and gender interact to predict social anxiety symptoms in early adolescence. *Journal of Adolescent Health*, *41*(1), 102-104.
18. McLean, C. P., Asnaani, A., Litz, B. T., & Hofmann, S. G. (2011). Gender differences in anxiety disorders: prevalence, course of illness, comorbidity and burden of illness. *Journal of psychiatric research*, *45*(8), 1027-1035.
19. Behere, A. P., Basnet, P., & Campbell, P. (2017). Effects of family structure on mental health of children: A preliminary study. *Indian journal of psychological medicine*, *39*(4), 457-463.
20. Hunsley, J. (1991). Anxiety Disorders and the Family. *Can Fam Physician*, *37*, 421–7.
21. Blake, M. J., Trinder, J. A., & Allen, N. B. (2018). Mechanisms underlying the association between insomnia, anxiety, and depression in adolescence: Implications for behavioral sleep interventions. *Clinical Psychology Review*, *63*, 25–40.
22. Balázs, J., Miklósi, M., Keresztény, A., Hoven, C. W., Carli, V., Wasserman, C., ... & Wasserman, D. (2018). Comorbidity of physical and anxiety symptoms in adolescent: Functional impairment, self-rated health and subjective well-being. *International journal of environmental research and public health*, *15*(8), 1698.
23. Gilman, R. (2001). The Relationship between Life Satisfaction, Social Interest, and Frequency of Extracurricular Activities among Adolescent Students. *Journal of Youth and Adolescence*, *30*(6), 749–67.
24. Mance, G. A., Grant, K. E., Roberts, D., Carter, J., Turek, C., Adam, E., & Thorpe Jr, R. J. (2019). Environmental stress and socioeconomic status: Does parent and adolescent stress influence executive functioning in urban youth?. *Journal of prevention & intervention in the community*, *47*(4), 279-294.
25. Reiss, F., Meyrose, A. K., Otto, C., Lampert, T., Klasen, F., & Ravens-Sieberer, U. (2019). Socioeconomic status, stressful life situations and mental health problems in children and adolescents: Results of the German BELLA cohort-study. *PloS one*, *14*(3), e0213700.