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Prevalence of Anxiety Disorders among Urban Adolescents: A Community-Based Cross-Sectional Study

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Abstract

Background: Anxiety disorders are among the most common mental health problems affecting adolescents worldwide and represent a significant public health concern in India. Mental health issues during adolescence often remain unrecognized and untreated, leading to adverse psychological, academic, and social outcomes. Early identification and timely intervention are therefore essential to reduce long-term consequences.

Aim: To determine the prevalence and subtypes of anxiety disorders among urban adolescents and to identify the socio-demographic factors associated with them.

Method: A community-based cross-sectional study was conducted among 270 adolescents aged 10–19 years in the UHTC area, selected through systematic random sampling. Data were collected using a pre-tested questionnaire on socio-demographic and anxiety-related factors. Anxiety was assessed using the validated SCARED tool (score ≥25 indicating anxiety disorder). Data were analysed using Excel and Jamovi, applying Chi-square test and multivariable logistic regression.

Results: The prevalence of overall anxiety disorder among urban adolescents was 29.6% (95% CI: 24.22%–35.43%). Among the subtypes, separation anxiety disorder (43.7%) was the most prevalent, followed by

panic disorder (32.6%), significant school avoidance (31.1%), generalized anxiety disorder (11.1%), and social anxiety disorder (4.4%). Females showed a relatively higher proportion of anxiety compared to males. Socio-demographic factors such as parental education, family structure, and schooling status demonstrated associations with anxiety levels.

Conclusion: Nearly one-third of urban adolescents were affected by anxiety disorder, highlighting the need for routine community-based screening and early intervention programs.

Keywords: Adolescents, Anxiety disorders, Cross-sectional, SCARED tool, Urban

Introduction

Mental health is an integral part of overall health. The World Health Organization defines health as a state of complete physical, mental, and social well-being and not merely the absence of disease.[1] Adolescence (10–19 years) is a crucial developmental stage characterized by rapid physical, emotional, and social changes.[2,3] During this period, individuals experience increased academic pressure, peer influence, identity formation, and exposure to digital media, all of which can affect their psychological well-being.[4] In India, adolescents constitute a significant proportion of the population, making adolescent mental health a major public health priority. [5]

Among mental health disorders, anxiety disorders are the most common in children and adolescents.[6] They are characterized by excessive fear, worry, and related behavioural disturbances that interfere with daily activities.[7] Common types include generalized anxiety disorder, panic disorder, separation anxiety disorder, social anxiety disorder, and school avoidance. National and international studies indicate a considerable burden of anxiety disorders among adolescents. [8,9]

The development of anxiety disorders is influenced by multiple factors. Genetic predisposition and family history of mental illness increase vulnerability.[10] Environmental and psychosocial factors such as stressful life events, academic stress, bullying, poor family support, substance use, poor sleep quality, and excessive internet use also contribute significantly.[11-13] If left untreated, anxiety disorders may lead to poor academic performance, social withdrawal, substance abuse, and long-term mental health problems. [14]

Despite their high prevalence, anxiety disorders are often underrecognized and undertreated due to stigma, lack of awareness, and limited access to mental health services. [15] Early identification using validated tools such as the Screen for Child Anxiety Related Emotional Disorders (SCARED) can facilitate timely intervention.[16,17] Research specifically focusing on the prevalence of anxiety disorders among urban adolescents remains limited.[18] Therefore, this community-based cross-sectional study aims to assess the prevalence of anxiety disorders among urban adolescents and identify associated socio-demographic determinants.

Materials & Methods

A community-based cross-sectional study was conducted in the Urban area, to determine the prevalence and pattern of anxiety disorders among urban adolescents. Adolescents aged 10–19 years who were permanent residents of the area constituted the study population. The study was carried out over a 13-month periods (May 2024 to May 2025). The sample size was calculated using the formula $n = Z^2PQ/L^2$, based on a previously reported prevalence of anxiety disorders of 17% among urban adolescents, with a 95% confidence

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level and 80% power, yielding a required sample size of 270 participants. Participants were selected using a systematic random sampling technique from a complete line listing of adolescents obtained from study area, with the sampling interval calculated as K = N/n; the first participant was selected randomly and every Kth adolescent thereafter was included. Adolescents aged 10–19 years residing in the study area were eligible, while those whose parents or guardians declined informed consent, those who refused assent, and adolescents receiving treatment for diagnosed mental illnesses were excluded. If an adolescent was unavailable after two visits or didn't meet inclusion criteria, the next listed adolescent was selected as a replacement. Following approval from the Institutional Ethics Committee (IECBHR/113-2024) and relevant authorities, written informed consent was obtained from parents or guardians and assent from adolescents prior to enrolment. Data were collected using a pre-tested, self-administered questionnaire in the local vernacular language to measure socio-demographic variables. Anxiety disorders were assessed using the Screen for Child Anxiety Related Emotional Disorders (SCARED) questionnaire, a validated 41-item self-report instrument based on DSM-5 criteria, comprising five subscales for generalized anxiety disorder, panic disorder, separation anxiety disorder, social anxiety disorder, and school avoidance; each item was scored on a 3-point Likert scale, and a total score of ≥25 was used to define the presence of an anxiety disorder. Data were entered into Microsoft Excel and analysed using Jamovi software. Associations between socio-demographic factors and anxiety disorders were examined using the Chi-square test or Fisher's exact test, as appropriate. Variables with a p-value <0.2 in bivariate analysis were included in a multivariable logistic regression model to identify independent predictors, with results reported as odds ratios and 95% confidence intervals. A two-sided p-value <0.05 was considered statistically significant.

Results

Table 1: Prevalence and Distribution of Anxiety Disorders and Their Subtypes among Urban Adolescents

Types of Anxiety Disorders	N	Percentage (CI)
Overall Anxiety Disorder	80	29.6% (24.22%–35.43%)
Panic Disorder	88	32.6% (27.04%–38.54%)
Generalized Anxiety Disorder	30	11.1% (7.61%–15.47%)
Separation Anxiety Disorder	118	43.7% (37.70%–49.84%)
Social Anxiety Disorder	12	4.4% (2.29%–7.58%)
Significant School Avoidance	84	31.1% (25.63%–36.99%)

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In the present study, the overall prevalence of anxiety disorders was 29.6%, indicating that approximately one-third of the study population experienced some form of anxiety disorder. Among the different subtypes, separation anxiety disorder was the most prevalent, affecting 43.7% of participants, reflecting a considerable burden within the group. This was followed by panic disorder at 32.6% and significant school avoidance at 31.1% both of which were also relatively common. On the other hand, generalized anxiety disorder was identified in 11.1% of participants, indicating a lower yet notable prevalence. Social anxiety disorder was the least common subtype, observed in 4.4% of the study population.

Table 2: Association of Socio-demographic Variables with Anxiety Disorders among Urban Adolescents

Variables	Anxiety Disorder N (%)	χ^2 (df)	p-value
Gender			
Male	28 (22.8)	5.11 (1)	0.02*
Female	52 (35.4)		
Age Group (years)			
10–13	28 (28.0)	0.25 (2)	0.88
14–16	25 (29.8)		
17–19	27 (31.4)		
Socioeconomic Class			
Upper	4 (30.8)	3.36 (4)	0.50
Upper middle	16 (29.1)		
Middle	27 (36.0)		
Lower middle	27 (28.4)		
Lower	6 (18.8)		
Schooling Status			
In school	80 (32.0)	9.09 (1)	0.003*
School dropout	0 (0.0)		
Living Status			
With parents	78 (29.2)	2.00 (1)	0.21
Other	2 (66.7)		
Family Type			
Nuclear family	56 (30.4)	0.53 (2)	0.76
Joint family	20 (29.4)		
Three generation family	4 (22.2)		
Family Structure			
Both parents together	74 (29.7)	5.42 (2)	0.08

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Parents separated/divorced	4 (21.1)		
One/both parents dead	2 (100.0)		
Mother's Education			
No formal education	18 (29.5)	4.34 (3)	0.26
Primary education	40 (28.0)		
Secondary education	17 (29.3)		
Higher secondary	5 (62.5)		
Father's Education			
No formal education	3 (11.5)	9.21 (3)	0.02*
Primary education	29 (25.0)		
Secondary education	39 (38.2)		
Higher secondary	9 (34.6)		

Gender was significantly associated with anxiety disorders ($\chi^2 = 5.11$, $p = 0.02$), with a higher prevalence among females (35.4%) compared to males (22.8%). A significant association was also observed with schooling status ($\chi^2 = 9.09$, $p = 0.003$), as anxiety was reported in 32.0% of school-going participants, while none of the dropouts were affected. Among parental factors, father's education showed a significant relationship ($\chi^2 = 9.21$, $p = 0.02$), with higher prevalence among those whose fathers had secondary and higher secondary education. No significant association was observed with age group, socioeconomic status, living status, family type, family structure, or mother's education ($p > 0.05$).

Table 3: Multivariable Logistic Regression Analysis of Predictors of Anxiety Disorders among Urban Adolescents

Predictor	UOR (95% CI)	AOR (95% CI)	p-value
Gender			
Female vs Male*	1.86 (1.09–3.22)	1.93 (1.11–3.38)	0.02*
Father's Education			
Primary vs No formal*	2.56 (0.81–11.32)	3.05 (0.95–13.68)	0.09
Secondary vs No formal	4.75 (1.52–20.94)	5.27 (1.67–23.41)	0.01*
Higher secondary vs No formal	4.06 (1.03–20.43)	4.79 (1.20–24.44)	0.03*

This table presents the findings of a binomial logistic regression analysis assessing the relationship between sociodemographic factors and the presence of anxiety disorder among urban adolescents. Variables with a p-value less than 0.2 in the univariate analysis were included in the final model. The overall model was statistically significant ($\chi^2 = 15.4$, $df = 4$, $p = 0.004$), indicating that the selected predictors collectively contribute to explaining the likelihood of anxiety disorder. Gender emerged as a significant predictor, with female adolescents having nearly twice the odds of experiencing anxiety disorder compared to males (AOR = 1.93), suggesting a meaningful gender-based difference in mental health outcomes. Paternal education also showed a graded relationship with anxiety risk. Adolescents whose fathers had secondary education

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(AOR = 5.27, p = 0.01) and higher secondary education (AOR = 4.79, p = 0.03) demonstrated significantly increased odds of anxiety disorder. This pattern suggests that higher paternal education levels may be associated with greater vulnerability to anxiety among adolescents in this study population.

Discussion

The present community-based cross-sectional study assessed the prevalence and determinants of anxiety disorders among urban adolescents and found that 29.6% of participants were affected. This highlighting a substantial mental health burden in urban settings. This finding is comparable to other Indian studies, such as Swapna et al., who reported a prevalence of 22.7% [2], though slightly lower than the present study. The higher prevalence observed in this study may be attributed to urban stressors such as academic pressure, lifestyle changes, and increased exposure to digital media. [6,10]

In terms of subtype distribution, separation anxiety disorder (43.7%) emerged as the most common, followed by panic disorder (32.6%) and school avoidance (31.1%). This pattern is consistent with findings from studies such as Amudha et al., where separation anxiety was also highly prevalent.[19] Similar trends were observed in studies by Jayashree et al., where panic disorder and separation anxiety were among the leading subtypes.[20] In contrast, social anxiety disorder was least prevalent (4.4%) in the current study, which differs from some studies reporting higher social anxiety prevalence. [2,19] These differences may be due to variation in socio-cultural context and assessment tools.

Gender differences were significant in this study, with female adolescents having higher odds of anxiety (AOR = 1.93) compared to males. This finding is consistent with several studies, including those by Swapna et al.[2] and Zhang et al. [21], which reported higher prevalence among females.

An important finding in the present study is the association between father's education and anxiety, where higher paternal education levels were linked with increased odds of anxiety. Similar observations were noted in studies like Jayashree et al.[20], where higher parental education was associated with increased anxiety, possibly due to greater academic expectations and pressure.

No significant association was observed with age group, socioeconomic status, family type, or mother's education. This is consistent with findings from certain studies where these variables were not independently associated with anxiety.[15,20] However, broader literature suggests that psychosocial factors such as peer relationships, family environment, and life stressors play a crucial role in the development of anxiety disorders. [13,22]

The multivariable logistic regression model in this study was statistically significant (χ^2 = 15.4, p = 0.004), indicating that the included predictors meaningfully explain variability in anxiety disorders. Gender and father's education remained independent predictors, reinforcing their importance in adolescent mental health. Overall, the findings of this study are consistent with existing literature and emphasize that adolescent anxiety is multifactorial, influenced by biological, psychological, and socio-environmental determinants. [10,22]

Conclusion

Nearly one-third of urban adolescents were found to be affected by anxiety disorders, indicating a substantial and often underrecognized mental health burden. Gender and paternal education emerged as significant determinants, highlighting the influence of socio-

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demographic factors on adolescent mental health. The findings emphasize the need for early identification through community-based screening and school-level interventions. Strengthening awareness and providing accessible mental health services are essential to reduce long-term psychological consequences.

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