

**Prevalence and Correlates of Anxiety Disorders among Higher Secondary School Students: A Cross-Sectional Study****Jigisha Patadiya<sup>1</sup>, Prashant Kariya<sup>2</sup>, Jagdish Mori<sup>3</sup>, Vijay Shah<sup>4</sup>, Vipul Chaudhari<sup>5</sup>**<sup>1</sup>Associate Professor, Department of Pediatrics, Government Medical College, Surat<sup>2</sup>Associate Professor, Department of Pediatrics, Kiran Medical College, Surat,<sup>3</sup>Pediatrician, Surat<sup>4</sup>Senior Pediatrician, Department of Pediatrics, Nirmal Hospital Pvt Ltd, Surat<sup>5</sup>Associate Professor, Department of Community Medicine, Government Medical College, Surat.

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**Abstract:****Objective:** To study the anxiety disorders among higher secondary school students using Screen for Child Anxiety Related Disorders (SCARED).**Methods:** A cross sectional study was conducted with convenient sampling of 1225 students of 11<sup>th</sup> and 12<sup>th</sup> standard from the different four schools of Surat city during Aug-Sept 2015 by Child Anxiety Related Disorders (SCARED) scale.**Results:** More than two fifth (44.8%) of the students had anxiety disorder symptomatology. Students belongs to joint family (18.1%) reported scared score of  $\geq 25$ . Type of family was independently affecting the mental health of children which was found statistically significant. Education of family head (Father) was affecting the mental health of children, which was statistically significant. According to socioeconomic status of the family, upper middle class, (21%) of family have score of  $\geq 25$  on the scale.**Conclusion:** Anxiety is on the rise in the present generation of adolescents; and is an area of increasing concern worldwide. Overall prevalence of Anxiety is high in our study which demands further research in different region or states of the Indian society.**Keywords:** Anxiety, Depression, Children, Adolescent.

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**Introduction**

The global population currently includes a significant cohort of 1.2 billion individuals aged between 10 and 19 years [1]. This age group, encompassing adolescents, constitutes over 20% of the world's total population [2]. Notably, India holds the largest national population of adolescents, with 243 million, followed by China with 207 million, the United States with 44 million, and Indonesia and Pakistan, both with 41 million [3]. In the context of India, adolescents make up 21.4% of the entire population. Recognizing the pivotal role they play as the potential future leaders and stewards of national development, it becomes imperative to make strategic investments in their well-being and development [4].

Anxiety disorders stand out as prevalent conditions among young individuals, impacting 10 to 20 percent of children and adolescents [5]. Notably, these disorders tend to manifest more frequently in females, with a ratio of approximately 2:1 compared to males [6]. While it is normal for observable anxiety behaviors to be part of typical infant development, the emergence of anxiety disorders

during childhood serves as a precursor to a broad spectrum of psychological challenges in adolescence. These challenges include the onset of additional anxiety disorders, panic attacks, and depressive disorders [5].

"Fear" represents a natural and anticipated reaction to an immediate or perceived threat, while "anxiety" involves the apprehension of future dangers [6]. In the context of anxiety disorders, they are defined by the presence of repeated emotional and physiological arousal triggered by an exaggerated perception of potential threats or dangers [5].

Commonly identified anxiety disorders in youth encompass separation anxiety disorder, generalized anxiety disorder, social anxiety disorder, and selective mutism. The diagnosis of each anxiety disorder is established only when the symptoms cannot be attributed to the physiological impact of a substance or medication, another medical condition, or better explained by an alternative mental disorder [6].

The Higher Secondary Examination, commonly referred to as HSC or the 12th board examination, serves as a pivotal centralized assessment for class 12 students in India. This examination is conducted by various educational boards, including the State School Education Boards, CBSE (Central Board of Secondary Education), CISCE (Council for the Indian School Certificate Examinations), and NIOS (National Institute of Open Schooling).

During the period from August to September 2015, this study involved the participation of four prominent educational institutions: Jeevan Bharti Higher Secondary School, Lourdes Convent High School Athwalines, Kaushal Vidhyabhavan Nana Varacha, Surat & Delhi Public School, Surat

These schools played a role in the comprehensive examination process during the specified timeframe

### Materials and Methods

**Table 1: Socio demographic profile of study population and the levels of anxiety disorder symptomatology.**

	Students have no Anxiety (Scared score <25)	Students have Anxiety (Scared score ≥25)	P
<b>Students</b>	676(55.2%)	549(44.8%)	
<b>1.Age in year</b>			
15	120(17.8%)	67(15.3)	<b>0.000</b>
16	387(57.2%)	274(54%)	
17	160(13.1%)	190(15.5%)	
18	09(0.7%)	18(1.5%)	
<b>2.Gender</b>			
Male	351(28.7%)	258(21.1%)	<b>0.085</b>
Female	325(26.5%)	291(23.8%)	
<b>3.Class</b>			
11	396(32.3%)	305(24.9%)	<b>0.287</b>
12	280(22.9%)	244(19.9%)	
<b>4.Medium</b>			
Gujarati	590(48.2%)	506(41.3%)	<b>0.006</b>
English	086(7.0%)	43(3.5%)	
<b>5.Religion</b>			
Hindu	611(49.9%)	508(41.5)	<b>0.122</b>
Muslim	43(3.5%)	33(2.7%)	
Christian	22(1.8%)	08(0.7%)	

In this study, a SCARED score of less than 25 was considered indicative of the absence of anxiety disorder symptomatology. The findings revealed that 44.8% of students exhibited symptoms of anxiety disorder, while 55.2% did not show such symptoms. Notably, the age of the students emerged as an independent factor significantly influencing the mental health of children. The study reported that 54% of 16-year-old students had a SCARED score of  $\geq 25$ .

Furthermore, the medium of instruction also emerged as a statistically significant factor

The study was designed as a cross-sectional investigation, employing a convenient sampling technique to gather data from a sample size of 1225 students enrolled in the 11th and 12th standards across four schools in Surat. The study duration spanned from August to September 2015. To assess anxiety levels, well-established and validated scoring systems such as the Screen for Child Anxiety Related Emotional Disorders (SCARED) were utilized.

The collected data were meticulously entered into Microsoft Excel 2007, and subsequent analysis was conducted using Epi\_info version 6.04 software. This approach ensures the reliability and comprehensiveness of the study findings through a systematic and validated methodology.

### Results

impacting the mental health of children. Specifically, among Gujarati medium students, 41.3% exhibited a SCARED score of  $\geq 25$ . It's essential to note that the majority of participants in the present study belonged to the Gujarati medium. However, caution is warranted in generalizing these results beyond the study population due to the sample composition. The findings underscore the importance of considering both age and medium of instruction in understanding and addressing mental health concerns among students.

**Table 2: Distribution of the study population according to the place of residence and type of family with the levels of Anxiety.**

	Students have no Anxiety (Scared score <25)	Students have Anxiety (Scared score ≥25)	P
<b>Students</b>	676(55.2%)	549(44.8%)	
<b>1. Place of residence</b>			
1.Rural	55(4.5%)	35(2.9%)	<b>0.240</b>
2.Urban	621(50.7)	514(42%)	
<b>2.Type of family</b>			
1.Nuclear	318(26.0%)	218(17.8%)	<b>0.000</b>
2.Extended	57(4.7%)	109(8.9%)	
3.Joint	301(24.6%)	222(18.1%)	

The study revealed that the type of family structure was an independent factor significantly influencing the mental health of children, and this association was found to be statistically significant. Specifically, among participants belonging to joint families, 18.1% of children exhibited a SCARED

score of  $\geq 25$ . This suggests that family dynamics, as indicated by the type of family structure, play a noteworthy role in the mental well-being of children, emphasizing the need for a comprehensive understanding of familial influences on mental health outcomes.

**Table 3: Distribution of the study population according to their parent's education and the levels of Anxiety.**

	Students have no Anxiety (Scared score <25)	Students have Anxiety (Scared score ≥25)	P
<b>Students</b>	676(55.2%)	549(44.8%)	
<b>1. Mother education</b>			
1.Illiterates	5(.4%)	8(0.7%)	<b>0.000</b>
2.Primary school	19(1.6%)	25(2.0%)	
3.Middle school	182(14.9%)	89(7.3%)	
4.High school	191(15.6%)	236(19.3)	
5.Post High school diploma	19(1.6%)	39(3.2%)	
6.Graduate/post graduate	239(19.5%)	143(11.7%)	
7.Professional	21(1.7%)	09(0.7%)	
<b>2. Education of family head (Father)</b>			
1.Illiterates	00(0.0%)	03(0.2%)	<b>0.000</b>
2.Primary school	8(0.75)	19(1.6%)	
3.Middle school	64(5.2%)	72(5.9%)	
4.High school	236(19.3%)	205(16.3%)	
5.Post High school diploma	28(2.3%)	43(3.5%)	
6.Graduate/post graduate	281(22.9%)	170(13.9%)	
7.Professional	59(8.7%)	37(6.7%)	

The study demonstrated that the level of maternal education had an independent and statistically significant impact on the mental health of children. Specifically, it was observed that children whose mothers had an educational attainment up to the high school level showed a higher prevalence of a SCARED score  $\geq 25$ , with 19.3% falling into this category. Similarly, the study found a similar trend

for paternal education, where children with fathers having education up to high school exhibited a SCARED score  $\geq 25$  at a rate of 16.3%. These findings highlight the potential influence of parental education levels on the mental well-being of children, emphasizing the importance of considering family factors in the assessment and support of children's mental health

**Table 4: Distribution of the study population according to the occupation and the socioeconomic status of the family with the levels of Anxiety.**

	Students have no Anxiety (Scared score <25)	Students have Anxiety (Scared score ≥25)	P
<b>Students</b>	676(55.2%)	549(44.8%)	
<b>1.Occupation of family head</b>			
1.Unemployed	4(0.3%)	12(1.0%)	<b>.000</b>
2.Unskilled	3(0.2%)	00(0.0%)	
3.Semi-skilled	36(2.9%)	24(2.0%)	
4. Skilled worker	333(27.3%)	158(12.9%)	
5.Clerical/shop owner / farmer	88(7.2)	108(8.8%)	
6.Semi-professional	59(4.8%)	161(13.1)	
7. Professional	153(12.5%)	86(7.0%)	
<b>Socio-economic classification</b>			
1.Upper	147(11.2%)	80(6.5%)	<b>.000</b>
2.Upper middle	365(29.8%)	257(21.0%)	
3.Lower middle	137(11.2%)	104(8.5%)	
4.Upper lower	16(1.3%)	85(6.9%)	
5. <5 lower	21(1.7%)	23(1.9%)	

The study indicated that the occupation of the family head had an independent and statistically significant impact on the mental health of children. Specifically, among children whose family head had a semi-professional occupation, 13.1% exhibited a SCARED score of  $\geq 25$ . This suggests that the professional status of the family head plays a role in influencing the mental well-being of children.

Similarly, the socioeconomic status of the family also emerged as a statistically significant factor affecting the mental health of children. In the present study, it was observed that among students belonging to the upper-middle class, 21% of children had a SCARED score of  $\geq 25$ . This underscores the importance of considering not only the occupation of the family head but also the overall socioeconomic context in understanding and addressing mental health outcomes in children.

### Discussion

Anxiety disorders stand out as the most prevalent psychiatric conditions in children and adolescents, as evidenced by our study where 44.6% of students exhibited various anxiety disorder symptoms. This finding aligns with research conducted by Malhotra [7], indicating that disorders of emotions specific to childhood, as per the ICD-10 classification system, were highly prevalent (82%) in the adolescent age group. Another study by Margoob [9] further supported this trend, revealing that anxiety disorders were notably more common (80%) within the adolescent age group.

This heightened prevalence in adolescence could be attributed to escalating scholastic demands and expectations placed on the child. The resultant stress from academic pressures may contribute significantly to increased anxiety levels during this developmental stage. Recognizing and addressing

these factors becomes crucial in promoting the mental well-being of adolescents amidst the challenges they face in their academic and personal lives.

Our study found that female students exhibited a higher anxiety score at 23.8%, compared to 21% in male students. This aligns with the findings of several previous studies, including those conducted by Campbell and Rapee (1994), Costello et al. (2003), and Last et al. (1996) [10,11,12]. Similar trends were also observed in Indian studies. Chadda and Saurabh (1994) reported that anxiety symptoms were more prevalent in the female population (1.55%) compared to males (0.77%) [13]. Joshi et al. in 2013 found a higher occurrence of anxiety symptoms in females [14].

Moreover, Margoob's study (1996) conducted in Kashmir revealed a higher prevalence of anxiety disorders (80%) among girls [9]. These consistent findings across various studies emphasize the gender-based differences in the manifestation of anxiety symptoms, suggesting a need for gender-sensitive approaches in understanding and addressing anxiety-related issues among students.

The majority of students in our study were from urban areas, constituting 42.00% of the sample. This finding is consistent with the study by Margoob (1996), where 80% of patients with anxiety disorders were from urban areas, as well as the study by Joshi et al. [9], which reported that 69.08% of patients with anxiety disorders were from urban areas. It is noteworthy that the prevalence of urban residents in Joshi et al.'s study could be influenced by the location of the child and adolescent psychiatry clinic, which was situated in an urban area (Lucknow), potentially introducing a referral bias [14].

In our study, among the various anxiety disorders, panic disorder was the most common at 45.3%, followed by separation anxiety disorder (31.9%), school avoidance (15.6%), social anxiety disorder (11.9%), and generalized anxiety disorder (4.8%). In contrast, a previous Indian study conducted by the Indian Council of Medical Research in 2001 [15] found that specific phobias were the most common

anxiety disorders in children and adolescents, with prevalence rates of 2.9% in Bangalore centers and 1.98% in Lucknow centers. These variations in prevalence highlight the importance of recognizing regional and contextual differences in the manifestation of anxiety disorders among young individuals.

**Table 5: Type of anxiety disorder in various study population**

Type of anxiety Disorder	Present study (%)	JOSHI et al. (2013) (%) Mumbai(n=450)	S. MAHAPATRA et al. (2013) Lucknow
Generalized anxiety disorder	4.8(%)	14.41(%)	14.29(%)
Social anxiety disorder	11.9(%)	25.56(%)	9.52(%)
Panic disorder	45.3(%)	37.11(%)	7.14(%)
Separation anxiety disorder	31.9(%)	61.33(%)	7.14(%)
School avoidance	15.6(%)	14.00(%)	-

The prevalence of generalized anxiety disorder in our study was found to be 4.8%. This finding is consistent with an epidemiological study conducted by the Indian Council of Medical Research at two centers, Bangalore and Lucknow, as well as a study by Joshi et al. in Mumbai, both reported in 2001 [15]. The study by the Indian Council of Medical Research included both community-based and clinic-based studies, with anxiety disorders being more common in the Bangalore center (3.93%) compared to the Lucknow center (2.32%).

The relatively low frequency of generalized anxiety disorders in the child and adolescent age group, as observed in these studies, may be attributed to cultural factors. In Indian society, emotional disorders in children are often less readily recognized and treated. Children experiencing such issues are frequently taken to indigenous healers, and parents may not immediately identify these problems as emotional disorders, leading them to seek alternative forms of treatment [16]. Understanding these cultural nuances is crucial for a comprehensive assessment of anxiety disorders in the Indian context

#### Conclusion:

The increasing prevalence of anxiety in the current generation of adolescents is a growing concern worldwide, and our study has highlighted a high overall prevalence of anxiety. This emphasizes the need for further research across different regions or states of Indian society. Exploring the variations in anxiety prevalence in diverse geographical and cultural contexts can provide valuable insights into the factors contributing to the rising rates.

Understanding the nuances of anxiety within different demographic and cultural settings can help tailor interventions and support systems that are more effective and relevant to the specific needs of distinct populations. It also underscores the importance of developing comprehensive strategies for mental health promotion and intervention to

address the evolving challenges faced by adolescents in the contemporary world. Continued research in this area will contribute to a more nuanced understanding of anxiety disorders and inform targeted approaches for prevention and treatment

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