

## A STUDY ON THE PREVALENCE OF ANXIETY RELATED DISORDERS AMONG ADOLESCENTS IN RURAL KERALA

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### ABSTRACT

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#### BACKGROUND

Anxiety disorders are the most common psychiatric problem in school going children worldwide.

#### OBJECTIVE

This study was done to find the prevalence and risk factors for anxiety disorders in adolescents in rural Kerala.

#### METHODS

A school based survey was done among children of 10 to 13 years using SCARED anxiety scale. Specific items in the SCARED scale were used to assess panic disorder, generalised anxiety disorder, separation anxiety disorder, social anxiety disorder and school avoidance, detailed assessments of various sociodemographic variables were also done.

#### RESULTS

A total of 250 children were studied – 147 girls and 103 boys. Anxiety disorders were found to be highly prevalent in the study population (45.6% affected) and girls were disproportionately more affected (53.4% vs. 40.1%,  $p = 0.0389$ ). It was present among all socio-economic strata.

#### CONCLUSION

These findings call for urgent remedial measures involving the students, parents, teachers, school management, policy makers and the media.

#### KEYWORDS

Anxiety Disorder, Adolescents, Prevalence, Psychiatric Disorder.

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**HOW TO CITE THIS ARTICLE:** Manuel D, John M, Rekha NS. A study on the prevalence of anxiety related disorders among adolescents in rural Kerala. J. Evid. Based Med. Healthc. 2016; 3(58), 3077-3079. DOI: 10.18410/jebmh/2016/670

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**INTRODUCTION:** The term anxiety is usually defined as a diffuse, vague, very unpleasant feeling of fear or apprehension.<sup>1</sup> Anxiety disorders are the most common psychiatric diagnosis in school going children worldwide, with an estimated overall prevalence rate of 8% (ranging 4 to 25%).<sup>2</sup> An Indian study reported the incidence of childhood psychiatric disorders as 18/1000/year.<sup>3</sup> However, very few Indian studies have been conducted to assess the various types of anxiety disorders among school children. Research indicates that adolescents with anxiety disorders have lower academic achievement, problems with peer and parental relationships, poor vocational adjustment, negative self-perception, poor self-esteem and an increased likelihood of psychiatric disorders later in life.<sup>2</sup>

**MATERIALS AND METHODS:** This study was conducted from April to November 2015 at Muriyad grama panchayath, Thrissur district, Kerala, among school going children in the age group of 10 to 13 years. The aims of the study were to identify the prevalence of anxiety related disorders among early adolescents and to find out any association between anxiety related disorders and socio-demographic variables.

'SCARED' anxiety scale was used to diagnose anxiety disorder. It is a 41 item score developed by a team from University of Pittsburgh<sup>4</sup>. Each item can have 3 responses. Not True or Hardly Ever True = 0, Somewhat True or Sometimes True = 1, and Very True or Often True = 2. A score above 30 was needed for the diagnosis. Specific items in the SCARED scale was used to assess panic disorder, generalised anxiety disorder (GAD), separation anxiety disorder, social anxiety disorder and school avoidance; the cut-off scores being 7, 9, 5, 8 and 3 respectively. Address, sex, education of father and mother, occupation of father and mother were selected as variables under socio demographic data. The schools were classified as government, aided and CBSE schools. Statistical analysis was done using student's t test for parametric variables and Chi-Square test for non-parametric variables. A p value of <0.05 was considered significant.

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*Financial or Other, Competing Interest: None.*

*Submission 11-07-2016, Peer Review 15-07-2016,*

*Acceptance 18-07-2016, Published 21-07-2016.*

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**RESULTS:** A total of 250 children were studied – 147 girls and 103 boys. Anxiety disorder was seen in 45.6% of the study population. It was seen in 53.4% of girls and 40.1% of boys. Girls were having a statistically significant higher risk for anxiety disorder (Odd's ratio 1.71, 95% CI 1.03 to 2.84,  $p = 0.0389$ ). The extreme form of the disorder was found in 3 children (1.2% of the total population), all of whom were girls. Anxiety disorder was reported relatively less commonly in government schools. Among government school children, 38.46% were affected. But 46.67% were affected in CBSE schools and 47.71% in aided schools. However, the difference was not statistically significant. Prevalence was not found to be affected by the maternal or paternal education.

In the case of panic disorder, 60% of girls and 47% of boys were affected. Severe form was seen in 3.6% (66.6% were girls). It was less common in CBSE school children (44.44% vs. 54.15%), also no extreme form was found in CBSE. Extreme form incidence was higher in government schools. However, these differences were not statistically significant. It was not found to be affected by the maternal or paternal level of education.

Generalised Anxiety Disorder was found in 41% of girls and 32% of boys. But no child had extreme symptoms. It was less common in government schools (25% vs. 62.23%). But the difference did not reach statistical significance ( $p = 0.07$ ). It was more prevalent in children with high education status of mother.

Separation anxiety had high prevalence and it was seen in 81% girls and 64% boys. Severe form was seen in 16.8%

(52% of whom were girls). It was less common in government schools and severe form of separation disorder symptoms was more common in CBSE schools. But again, it was not to a statistically significant level. It was more prevalent in children with high education status of mothers. Social disorder was seen in 42% girls and 23% of boys. Severe form was found in 7.6% (52% of whom were girls). It was less common in government schools (21.15% vs. 33.33%) and also no children with severe form in government schools. This again did not reach statistically significant level. It was more prevalent in children with high education status of mothers.

School avoidance was reported in 22% girls, 17% boys and the extreme form was seen in 0.8% (all girls). No significant difference was seen between different types of schools. Maternal and paternal education has no effect on the incidence pattern.

All the students in the sample were from rural area. Maternal and paternal occupation had no statistically significant association with any of the anxiety disorders. Children with high anxiety scores also had significantly higher scores for panic, GAD and separation disorders, showing the close association between these disorders.

	Anxiety disorder		Total
	Yes	No	
Girls	55	48	147
Boys	59	88	103
<b>Total</b>	<b>114</b>	<b>136</b>	<b>250</b>

**Table 1: Sex-wise Prevalence of Anxiety Disorder**

School	SCARED scale score								Total
	<=24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	
Aided	53	27	28	20	16	7	1	1	<b>153</b>
CBSE	16	8	7	8	4	2	0	0	<b>45</b>
Govt.	24	8	3	11	4	1	1	0	<b>52</b>
<b>Total</b>	<b>93</b>	<b>43</b>	<b>38</b>	<b>39</b>	<b>24</b>	<b>10</b>	<b>2</b>	<b>1</b>	<b>250</b>

**Table 2: School-wise Distribution of SCARED Anxiety Scale Scores**

	Panic	GAD	Separation anxiety	Social anxiety	School avoidance
Anxiety disorder	0.808	0.817	0.793	0.66	0.438

**Table 3: Coefficients of Correlation among various Anxiety Disorder Scores**

**DISCUSSION:** The primary aim of this study was to find the prevalence of anxiety disorders in children in rural Kerala. 45.6% of prevalence has been found in this sample. In 2013, a study was conducted in the frequency and types of anxiety related emotional disorders in a secondary school –Urban population in India using SCARED questionnaire.<sup>5</sup> The prevalence rate was 36.7% in that study. But 19.3% prevalence has been reported by Deb et al in a 2010 study.<sup>6</sup> Another review of Indian studies about prevalence of anxiety reported a median prevalence of 8% with range of 2-24%.<sup>7</sup> The differing results of these investigations reflects different methodologies used in these studies. Here in this study, high

prevalence rate was seen and the severe forms were also not rare. This may be because of the biological variation, stress of parents, excessive academic pressure by teachers and the social and economic situation of Kerala. Such high prevalence for anxiety even in a rural population is indeed a warning signal. A high level of anxiety in students is likely to have a significant impact in academic performance, personality development and in future employment.

This study adds to the existing literature by its finding of gender difference in reported anxiety among schoolchildren, with girls reporting higher anxiety on all anxiety subscales than boys. Also girls tended to have the

more severe forms of anxiety disorder, panic disorder, separation anxiety, social disorder and school avoidance.

Kerala is one of the few states in India with a favourable female: male ratio. So the significant increase in prevalence of anxiety in females compared to males in this study is all the more noteworthy. These findings are consistent with many of the previous studies.<sup>8,9,10</sup> However, another Indian study at Kolkata found a contrasting significant higher anxiety in boys (20.1%) as compared to girls (17.9%).<sup>6</sup> This could be due to variation in the samples under study, higher aged sample (13 to 17 years), and due to different tools like STAI for assessment of anxiety used in the latter study.

Several explanations have been proposed for the observed gender difference in anxiety symptoms among children. These include both biological and environmental factors. Some important environmental factors are gender roles, gender role stress, social relationships, and gender differences in exposure to social adversity and socialisation process.<sup>9</sup> Contrary to the theory of environmental influences Lewinsohn et al demonstrated that controlling for 15 psychosocial did not eliminate the sex difference in anxiety symptoms and disorders.<sup>11</sup> Based on his finding, he concluded that female vulnerability to anxiety is associated with some type of genetic or biological difference between girls and boys rather than being purely determined by environmental factors.

There was no gross difference in anxiety disorder symptoms between aided, government, and CBSE schools. But government schools were found to have lesser prevalence of anxiety disorders, generalised anxiety disorders, separation anxiety and social disorder. This could be attributed to less academic pressure and less economic disparity in between the students in government schools. It is found that this disorder is not influenced by the education of the father. But GAD, separation anxiety and social disorder were more in the mothers of higher educational groups. This could be attributed to higher academic expectations in mothers with higher education, resulting in more academic stress to the child.<sup>12</sup> Also such parents tend to be more controlling resulting in less freedom for the child. No pattern of relationship can be seen between the occupation of mother and father with the prevalence of anxiety disorders. This indicates that all economic strata are at risk.

A limitation of this study is the relatively small size. So caution must be exercised in extrapolating the results to the general society. Also, though extensively used for epidemiologic studies, the questionnaire-method of assessment has its own limitations.

**CONCLUSION:** The high prevalence of anxiety in children across the entire socio-economic spectrum as found in this study calls for urgent corrective steps. Steps should be taken to provide counselling services by trained clinical psychologists in all schools. Special training and sensitisation programs should be provided to teachers. Awareness classes

should be provided to parents to make them understand the magnitude of the problem and the measures to tackle it. Also the print and electronic media too should play an active role in highlighting this problem.

**CONTRIBUTORS:** All co-authors of this article were substantively involved in the study and/or the preparation of the article. No undisclosed groups or persons have had a primary role in the study and/or in preparation of the article.

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