

**Introduction /Background :** Anxiety (AD ) being the most prevalent psychological problem among children and adolescents remain largely unrecognized due to their nature. If untreated AD could lead to many adverse outcomes.

**Objectives :** To assess the prevalence and correlates of anxiety disorders and effectiveness of an intervention to reduce anxiety among children aged 13-15 years attending government Sinhala medium schools in Colombo district, Sri Lanka.

**Methods :**

**Component 1 :** The SCARED Child was culturally adapted , translated to Sinhala and its judgmental validity was ensued. The instrument was validated among 423 children aged 13-15 years in Colombo district by assessing construct validity through confirmatory factor analysis, and criterion validity using the diagnosis made by a consultant psychiatrist as the gold standard, developing clinically validated cut-off values using ROC curve. The reliability was assessed using internal consistency and test-retest assessment.

**Component 11 :** A cross sectional study included 1524 children aged 13-15 years old selected by a multiage stratified cluster sampling from Sinhala-medium government schools in Colombo district. The presence of anxiety disorders and its correlates were assessed using a pre-tested self-administered questionnaire that included validated screen for Child Anxiety Related Disorders (SCARED) Child Sinhala associated factors were analyzed using bivariate and multivariate analysis.

**Component 111 :** A cognitive behavioral therapy (CBT) based universal anxiety prevention package was developed based on research evidence , expert opinion and recipients' values. A cluster randomized controlled trial was conducted involving to schools among 720 children in a randomly selected

Selected educational zone in the Colombo district , randomizing 18 schools each to study and control arm . Outcomes ( level of anxiety using SCARED child depression using DASS-21 and self-esteem using Rosenberg Self Esteem Survey) were compared at baseline, post – intervention and at 3 months follow up, using bivariate analysis followed by multivariate analysis controlling for clustering effect and confounding variables, using marginal linear regression.

**Results :** The five factor model of culturally & translated SCARED Child Sinhala was confirmed. It showed a sensitivity of 85% (95% CI-74.61% -93.25% ) and a specificity of

91.3% ( 95% CI 88.00% - 94.07% ) and high reliability ( Cronbach's alpha 0.87 and test retest correlation -0.74).

The adjusted prevalence of anxiety disorders was 12.3% ( 95% CI 9.8% to 14.9% factors significantly associated with having anxiety disorders at the multivariate analysis included being female ( OR – 3.0 , 95% CI 2.0-4.4p=0.001). residing away from the family (OR -4.6, 95% - 1.2-17.8, p=0.027 ) , Low to moderate Self Esteem ( OR = 1.6, 95%v CI 1.1= -2.5, p =0.022) having stress ( OR =2.3, , 95% , CI 1.5-3.6 , p=0.001) , having depression ( OR = 2.5, 05% CI 14.45 , p=0.001), higher anxiety sensitivity (OR = 6.2, 95% CI 4.3- 9.0 p=0.001. Higher behavior inhibition ( OR = 3.2, 95% , CI 2.1-4.7, 0.001) , attending tuition classes for 5-7 days per week ( OR =2.0, 05% CI=1.9=43, p, 0.001), non –engagement in sports activities (OR -1.6 95% CI 11-2.6,.028 , having a sibling/s less than one year of age ( OR -2.905% CI 1.2-66, p=0.015) , fathers low level of education ( OR=2.0 , 95% CI 1.1-3.8 p=0.044) mother engaged in foreign employment (OR – 5.3, 95% CI 2.0-13.9p= 0.001) having an insecure attachment style (OR 2.7, 95% (CI 1.8-4.0,<0.001 ) , and infavorable maternal tearing behavior ( OR =2.9 , 95%CI 1.7-4.0, maternal p< 0.001) and unfavorable maternal rearing behavior (OR -2.9, 95% CI 1.7-4.9, p<0.001).

In the cRCT , comparing the study and control arms by using marginal regression model with coefficient by Generalized Estimation Equation, anxiety level had no significant difference ( p=0.024, 95% CI -0.055-0.006, p=0.1150 at post intervention, but a statistically significant reduction ( p=0.096, 95% CI -0.186-0.005, p=0.018) with a small effect size at follow up. There was no statistically significant difference in level of depression both at post intervention (OR -0.422, 95% CI 0.177-1.9952). For self esteem level, there was a statically significant increment with a a small effect size at post-intervention (p=0.811, 95% CI 0.314-1.300, p=0.001), but not at the follow up ( 0=–p=0.435, 95% CI 0.276-1.145, p=0.211).

**Conclusion and Recommendations :** The SCARED Child Sinhala is a valid and reliable instrument to assess AD in adolescents and it could be used for screening purposes in the community. The prevalence of AD is high and is associated with multiple personal family and educational factors. The CBT based universal package is effective in reducing anxiety and

increasing self esteem level but not the depression level. This package could be used in Sri Lankan school set up to reduce anxiety and enhance the maternal health capabilities of adolescents.

**Keywords: Anxiety disorders, Children , CBT based universal.**