

Selected correlates associated with test anxiety among 14-16 year olds in a Colombo district school

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Sri Lanka Journal of Child Health, 2017; **46**(2): 117-121

Abstract

Introduction: Worldwide studies have identified varied correlates associated with test anxiety in school children. Such studies are rare in Sri Lanka.

Objective: To explore the association between test anxiety and selected correlates in a group of 14-16 year old Sri Lankan school children.

Method: All children (n=107) in the 10th grade in a selected school completed a psychometric test-battery which was a part of a larger study. These included the Ravens Standard Progressive Matrices (assesses intelligence), Westside Test Anxiety Scale (assesses test anxiety), and the Personality Assessment Questionnaire (assesses personality maladjustment). The students also completed a socio-demographic questionnaire. Their previous semester academic averages were obtained from the school administration. The Colombo Medical Faculty Ethics Review Committee approved the study.

Results: Personality maladjustment and test anxiety were significantly and positively correlated (Pearson coefficient correlation = 0.438). The students' previous semester academic scores were also analysed in relation to test anxiety using non-parametric methods. Academic averages showed a

significant negative correlation with test anxiety (Spearman coefficient correlations = -0.234) and a significant positive correlation with intelligence (Spearman correlation coefficient = 0.537). The results also showed that the mean scores of test anxiety were significantly higher ($p < 0.05$) in females (mean=2.683) than in males (mean=2.328).

Conclusions: The study indicates that increased personality maladjustment and female gender are associated with test anxiety. It also shows that increased test anxiety is associated with decreased academic performance.

DOI: <http://dx.doi.org/10.4038/sljch.v46i2.8266>

(Key words: Test anxiety, examination stress, personality maladjustment, Sri Lankan school children)

Introduction

Test anxiety is viewed as a context-specific trait, a disposition to react with heightened anxiety in the face of situations that are specifically related to tests and performance¹. Moderate to high levels of test anxiety in school children have been shown to be detrimental to academic success (lowered motivation to learn, impaired learning capacity, increased likelihood of school dropout²), physical health (higher blood pressure, increased general medical illnesses across the lifespan³), and psychosocial functioning (alcohol dependence and social phobia⁴). Studies from several countries have shown that female gender⁵, school grade (test anxiety increases across elementary to middle school grades⁶), ethnicity (African Americans and Asians report more test anxiety than Caucasians⁷), and school environment⁸ impact on test anxiety.

Sri Lankan studies on test anxiety are scarce, with a few reported on the high-stake Year 5-scholarship examination⁹ which is conducted around 10 years of age. Poor performance at this examination appears to be significantly associated with lower self-esteem, impaired social skills and deficits in leadership ability⁹. Local studies in other age groups are limited to one general study indicating that 28% of Sri Lankan school children demonstrate severe levels of anxiety, with the most

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(Received on 25 May 2016: Accepted after revision on 15th July 2016)

The authors declare that there are no conflicts of interest

Project was funded by the Vishwa Parami Foundation
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frequently cited reason for this being fear of examinations¹⁰. Furthermore, 19% of this sample screened positive for major depression, which was deduced to be mostly due to examination stress. The current study aimed to address this gap by exploring selected correlates associated with test anxiety amongst 14-16 year olds. These are young people approaching the next high-stake examination of Ordinary Level. By exploring these correlates, this study aimed to document potential areas of interventions to help Sri Lankan school students. Providing interventions to manage test anxiety will be most beneficial as this will allow young people to perform at their best at examinations, assist them to internalize and utilize techniques so-learned for future examinations, and reduce the impact of the negative effects of test anxiety on important areas of child development. Furthermore, it will lessen the likelihood of students developing a negative bias towards future examinations. A wide Sri Lankan knowledge-base on this subject and culture-specific information is essential if local programmes to combat test anxiety are to be designed. The larger this local research base, the more informed one's decision could be, and policies and programmes could be established based on factual data rather than on findings and assumption from other countries.

Objective

To explore the association between test anxiety and selected correlates in a group of 14-16 year old Sri Lankan school children.

Method

The present data were extracted from a larger study on mindfulness and its effects on psychological parameters of children. All 107 children (46 girls) in grade 10 (14-16 year olds), who were present at a single school on the testing day were invited to participate. On a previous day, their parents were informed of the nature of the (larger) study and written consent was obtained. The children were gathered into a hall within the school properties and were presented with the psychometric test battery and a socio-demographic questionnaire. They were informed what they were required to do and after completing the questionnaires, they were asked to hand it over to one of the researchers and leave the hall. Each participant was given a random anonymity code and the results were entered accordingly. Their previous semester academic averages were collected separately from school records.

The variables tested in this study were intelligence, test anxiety and personality maladjustment. Hence the paper and pencil psychometric test battery was: Ravens Standard Progressive Matrices (for

intelligence¹¹), Westside Test Anxiety Scale (for test anxiety¹²), and the Personality Assessment Questionnaire (for personality maladjustment¹³).

Ravens Standard Progressive Matrices is a widely used culture fair measurement of an individual's ability to make sense and meaning of complex and complicated data, the ability to perceive and understand patterns, and to create them in different constructs to make the complexity of it easier to handle. The test consists of 50 abstract patterns with a missing pattern. The participant is given six to eight possible patterns to choose from to complete the overall pattern. These patterns are divided into five sections with 10 patterns of a similar theme, with the first five patterns of each section being simple and the last five complicated and complex. The participants are not given a time frame to complete the questionnaire.

The Sri Lankan version of the Westside Test Anxiety scale consists of 10 brief statements to be ranked on a Likert scale of one to five (1- not at all /never true; 2-slightly / seldom true; 3 -moderately /sometimes true; 4-highly/usually true; 5-extremely/ always true). This scale was designed to recognize students who develop impaired anxiety in stressful situations causing their performance to be limited in comparison to their initial potential.

The Sri Lankan version of the Personality Assessment Questionnaire presents 42 statements to the participant. The participant is required to read these statements and mark their responses on a Likert scale which reads as: 4 - almost always true of me; 3 - sometimes true of me; 2 - rarely true of me; 1- almost never true of me. Amongst these 42 statements, six items each are used to test seven behavioural dispositions. These are: hostility and aggression, dependency, negative self-esteem, negative self-adequacy, emotional unresponsiveness, emotional instability and negative world view. The psychometric properties of the test battery have been shown to range from adequate to good.

The Colombo Medical Faculty granted ethics approval for this study.

Results

The personality maladjustment scores (which were normally distributed) positively and significantly correlated with test anxiety (Pearson correlation coefficient = 0.438). The previous semester academic averages were not normally distributed and hence non-parametric measures were used in its analysis. This analysis indicated that test anxiety negatively and significantly correlated with academic averages (Spearman correlation

coefficient = -0.234). Further, the academic averages were positively and significantly correlated with intelligence scores (Spearman correlation coefficient = 0.537). The test anxiety scores were also used in a mean comparison between male and female participants, which indicated that females had significantly more test anxiety than males ($P < 0.05$).

Discussion

The present study aimed to explore the association between test anxiety and selected correlates in a group of Sri Lankan school children. Results indicated that the two variables, test anxiety and personality maladjustment, are significantly and positively correlated, though the correlation coefficient is not strong. Causality cannot be established with this study. However, previous research has shown that individuals with higher levels of test anxiety have an increased incidence of psychological diagnoses across their lifespan, when compared to individuals with lower test anxiety. Additionally, individuals who left school early due to high levels of test anxiety are more likely to have a lifetime prevalence of social phobia and alcohol abuse⁴. Personality maladjustment encompasses facets such as hostility and aggression, dependency, negative self-esteem, negative self-adequacy, emotional unresponsiveness, emotional instability, and negative world view¹³. Hence it could be hypothesised that as a student's personality gets more maladjusted, it could lead to increases in other related psychological constructs such as test anxiety. Future research with stronger research designs could explore the causality of these findings.

Results also indicated that the two variables, test anxiety and previous semester academic averages, were significantly and negatively correlated. One could hypothesise that as academic performance improves, test anxiety decreases (or vice versa), which has been shown in previous studies¹². In fact, test anxiety has been shown to impair attention and working memory capacity which negatively impacts upon the ability to learn, understand and solve academic problems². High levels of test anxiety have also demonstrated a significant decrease in student motivation to learn¹⁴ resulting in a negative bias towards school and the classic social phobia symptom of avoidance of testing situations and school. Due to this, the presence of high levels of test anxiety have been shown to cause an increase in levels of drop-out from secondary and tertiary education¹⁵. The results indicate that there was a non-significant correlation between test anxiety and intelligence. This may be

due to the nature of the construct of intelligence. It is considered to be one of the most difficult variables to measure and predict within human behaviour. In fact, an individual with a high intelligence score may develop test anxiety or even have more test anxiety than an individual with a lower intelligence score.

The present study also indicated that academic averages and intelligence are significantly and positively correlated. Intelligence is a complex concept and is commonly considered as the ability to learn, understand and deal with new or trying situations. In contrast, academic averages portray one's knowledge and skills and test papers are meant to assess a student's knowledge and their ability to apply learnt theories in multiple situations. Results on the association between intelligence and academic achievement are inconclusive. Whilst some have shown no association¹⁶, others have indicated that the association between intelligence and academic achievement is about 50 percent¹⁷. The reason for this non-existent to average association is twofold: intelligence tests assess a more 'abstract' ability which school tests may not capture, and school tests include items which tap culture specific information which intelligence tests do not assess. Hence, at best, intelligence predicts academic achievement at about 50 percent (i.e. explains only 50% of the variability), whilst other factors such as personality and motivation also contribute to academic grades. Hence, in this study, we could conclude that the association between academic averages and intelligence, though positive and significant, is not an absolute. This means that school authorities, which tend to focus on academic achievement, could include student personality strengthening and motivation programmes to help increase test score. These programmes would also have the indirect benefit of increasing the psychological health of students. The results also showed that females had significantly more test anxiety than males. Previous research too has reported so. It has been suggested that this difference is due to girls being more willing to report experiencing anxiety^{5,18}.

A main limitation of the study is that it was from a single school. Therefore, further studies, with more robust research designs in a cross-section of schools could explore this topic further. This study, one of the few of this nature in Sri Lanka, may inform school authorities on potential areas for interventions - such as that school programs to strengthen the personality and increase motivation in students may lead to lesser test anxiety and better academic performance.

Conclusions

The present study indicates that increased personality maladjustment and female gender are associated more with test anxiety. It has also shown that increased test anxiety is associated with decreased academic performance.

Acknowledgments

The authors thank Vishwa Parami Foundation for funding the present study.

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