

Prevalence of Perceived Stress among Adolescent School Children in Colombo District

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Introduction

Stress is a commonplace experience. Selye defined stress as a physiological non-specific reaction to external or internal demands (Selye, 1973). Whilst some level of stress is beneficial, high levels of stress can result in negative outcomes. Several health models assume psychosocial stressors of adverse impact to physical health as well as psychological well-being (Rusch et al., 2009). Once the human existence is challenged by stresses, it subsequently leads to failure of stress coping mechanisms (Celik et al., 2009). Stress induces illnesses like hypertension, atherosclerosis, insulin-resistance, dyslipidemia syndrome, certain disorders of immune function, cardiomyopathy (Agid et al., 2000), psychiatric illnesses (Muirhead and Locker, 2008) and so on.

Students' experience of stress has become a major concern among health professionals. It is one of the many risk factors for depression among students. Stress impedes academic performance. The detrimental effect of stress has been reported more frequent than viral infections, sleep disturbances, concerns about family members and friends, and relationship problems (American College Health Association, 2003, 2009).

Having to manage multiple demands has made the lives of students stressful. The transition from adolescence to early adulthood involves being more socially active, managing life's demands triumphantly and meeting personal goals (Dyson and Renk, 2006).

The presence of a stressor does not necessarily cause stress. It's not the properties of the stressor that matters but a person's interpretation of the stressor or the stimulus and emotional reaction towards it (Lazarus, 1966). Students who believe that they have a limited ability to manage their stress successfully are highly vulnerable to adverse impacts of stress (Campbell-Sills et al., 2006). High levels of perceived stress have been associated with physical symptoms, psychological distress, emotional exhaustion, and burnout in students (Humphris et al., 2002, Rodway et al., 2003).

It has been learnt that demographic correlates have a relationship with stress in students. Gad & Johnson (1980) assessed the relationship between adolescent life stress in relation to socioeconomic status and race. The findings suggested that adolescents from lower socioeconomic groups regardless of their race experienced higher levels of stress through negative life changes (Gad and Johnson, 1980). Goodman & colleagues studied the American society and found an association between having a low socioeconomic status (SES) and minority race/ethnicity and chronic stress. Further, those factors put adolescents at a social disadvantage and which hence influences the stress.

Gender was also found to be related to the stress in adolescents. Meten & colleagues in 1990 revealed higher level of stress and depressive symptoms in female adolescents in comparison to male adolescents. Another research conducted in 1990 led to similar findings. Female adolescents re-

ported more recent stressful events. Stress had no strong relationship with the age factor (Allgood-Merten et al., 1990).

Objectives

1. To study the prevalence of Perceived Stress
2. To identify the correlates of Perceived Stress in adolescents

Method

This study was conducted in Colombo. It is the capital and the most populated district in Sri Lanka. Colombo encompasses both urban and rural areas. There are approximately 350,000 students studying in more than 400 schools in this district.

Research Design

A cross sectional descriptive study was performed among school attending adolescents from Colombo district. Perceived stress level was treated as the independent variable. Gender, Ethnicity, Advanced level subject stream and previous term test marks were treated as dependant variables.

Sampling Strategy

Grade 10 and 12 students were selected for this study. Grade 10 students were included in order to have students with lower academic performance who would proceed to higher levels after the barrier exam in grade 11 (ordinary level). Students of grades 11 and 13 had to be excluded since they were preparing for their exams GCE [General Certificate of Education] ordinary level and advanced level respectively).

In this study, a cluster is defined as 30 students. It is the approximate number of students in a classroom in majority of the schools in Sri Lanka. The database of all the students to be used in sampling was obtained from the Ministry of Education in Sri Lanka. The database comprised a stratification of schools based on multiple factors such as resources, number of students, number of teachers, and academic and nonacademic performance of students. Proper representation from all the strata in this classification was achieved by probability proportionate to size technique.

Participants

A representative sample of 6000 school children studying in grade 10 and 12 in Colombo district was selected by multi-staged Stratified random sampling. Both male and female participants were recruited irrespective of their religious and ethnic backgrounds. Age range was 14 to 19 years.

Materials

1. Information sheet

The anonymous information sheet included the demographic details such as gender, age and other

information such as previous term test marks, whether ordinary level or advanced level, advanced level subject stream.

2. Perceived Stress Scale (Cohen, 1983)

The Perceived Stress Scale (PSS) is a widely psychological instrument to measure the perception of stress. It measures the degree to which situations in one's life are appraised as stressful. Items seek to identify how unpredictable, uncontrollable, and overloaded respondents find their lives. In addition, the scale also includes a number of direct queries about current levels of experienced stress.

Procedure

After the approval was taken from the Ethical Review committee of Faculty of Medicine, University of Colombo, the study was instigated as part of the tobacco and illicit substance surveillance study with the of Ministry of Education and Information sheet and Perceived Stress Scale were administered respectively. A standardized procedure was incorporated to collect data. Data collection was carried by medical doctors or third- and fourth-year medical students from the Colombo Medical Faculty. With a brief prior training in research, survey procedures, and ethics, including confidentiality in research prior to data collection. Class teachers were not present in the classroom while the questionnaires were administered. To minimize underreporting, students were assured of anonymity and confidentiality. Students were instructed not to mention any information that could identify them or their schools. Answer sheets were collected into boxes which were unmarked and sealed. They contained answer sheets of several schools.

Returned information sheets and scales with questionable validity were excluded by analytical strategies. Descriptive statistics were carried out to achieve the prevalence of perceived stress among adolescents. Chi-Square and Logistic regression analyses revealed associations of level of perceived stress and demographics.

Results

Duplicate entry and data cleaning was done. Analysis was performed using STATA version 11 (StataCorp, 2009, Stata Statistical Software: Release 11, College Station, TX). Response rate was 94.38% (males: 53.4%).

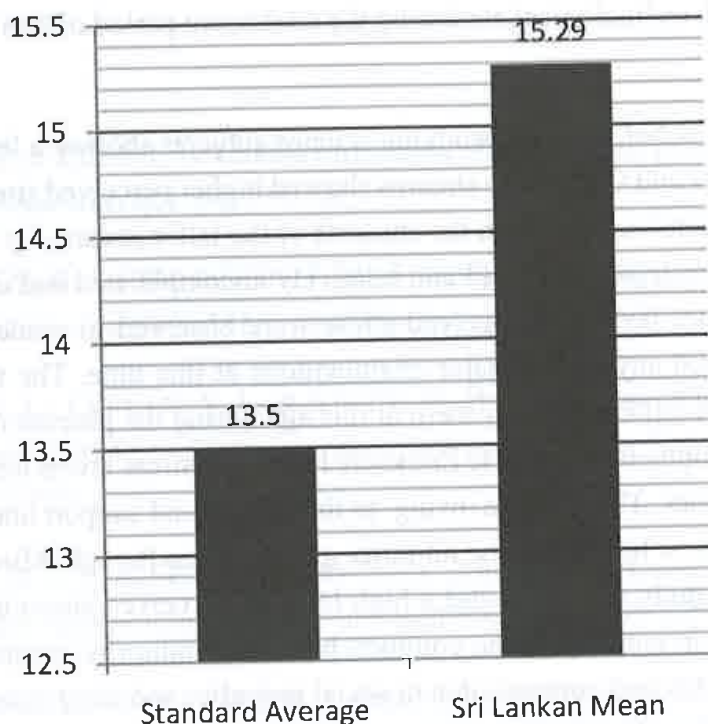


Figure 1: Perceived stress level

Mean Perceived stress score (PSS) was 15.29 (SD=5.34). That was significantly higher ($p<0.001$) than the standard American average PSS (13.5). See figure 1. PSS did not show an association with gender ($p=0.95$). In relation to the ethnicities/races, PSS was higher in students of Tamil ($p=0.002$) and Burger ($p=0.002$) ethnicities in comparison to Sinhalese. When compared to a student in grade 10, students following Advanced Level (AL) mathematics ($p<0.001$) and biology ($p<0.001$) were less likely to have a higher PSS score. AL students following commerce, arts streams and grade 10 students had similar PSS s. Students' participation in sports did not have a significant effect in PSS ($p=0.08$). Students who had 60-69 and <59 marks for the previous term test had a higher PSS when compared to students who had >90 marks.

Conclusion

The study results demonstrate that level of perceived stress experienced by Sri Lankan adolescents of Colombo district of age 14-19 is significantly higher than the standard American average of perceived stress. There is a significant association between perceived stress levels and ethnicity/race, Advanced Level subject stream, studying in grade 10 and students' previous test marks. Similar trend has been found in some studies done around the globe. The findings are discussed in the light of the limitations of the study hence requires further research in to the area.

Discussion

Among adolescents in Colombo district, we report higher levels of perceived stress. This could be due to few grounds. Higher demands have been made by the competitive standards imposed by the education system and society as a whole on the students. Meeting the standards might have been stressful. It also could be attributed to stressors such as socioemotional, academic, economical,

cultural, sexual, political, technological etc during the adolescent period of transition from the childhood to the adulthood.

Contrary to the common belief, students studying science subjects showed a lesser perceived stress levels and students of Arts and Commerce streams showed higher perceived stress levels. This could be due to the higher expectations made on the students of the latter streams by society based on the assumption that latter have lesser workload and relatively uncomplicated and undemanding subject contents. Moreover, higher levels of perceived stress were observed in grade 10 students. Grade 10 students have not faced any of the major examinations at this time. The finding could be explained by the uncertainty experienced by them at this age during the process of identity formation in the psychosocial development as per Eric Erickson. Perceived stress levels were higher among the Tamil and Burger ethnicities. This may be owing to the poor social support and lack of active coping and coping behaviours at hand by some minority groups. Even though, Muslims are considered as a minority group, the study has not found a high level of perceived stress in Muslims, opening up a new line of thought in contrary to the common belief that minority groups experience higher levels of stress for all intents and purposes due to social prejudice and discrimination. Higher levels of perceived stress were found in students with low marks in the previous term test. A student who scored low in a given test has more responsibility and hope of performing better the next time. On the other hand, negative responses of parents, teachers, peers and others towards the poor academic performance can have adverse impacts on the psychological state of a student by adding pressure into their regular routines of lives. Initiatives need to be taken to decrease the prevalence of stress in adolescents and to promote help seeking behaviors in them.

Recommendations

It is recommended that responsible bodies take into consideration the significantly higher levels of perceived stress found in the study, among the school attending adolescents in the Colombo district. It is also recommended that the programme developers take special measures in developing stress reduction interventions among adolescents.

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