

## **Abstract**

The present study was designed with the objective of determining the prevalence of coronary heart disease risk behaviors and biological risk factors among adolescents of public schools in the Kandy Municipal Council area and to find out the effects of an intervention program aimed at reducing sedentary lifestyle among adolescents. In order to achieve this objective a school based cross sectional study was carried out among 14 to 15 year old adolescents studying in public schools of the Kandy Municipal Council area.

The study consisted of two phases, phase I and phase II. Phase I consisted of two components. Four thousand students were selected for component I of phase I, using stratified cluster sampling method. A sub sample of 440 students was randomly selected for component II of phase I of the study. Four schools were randomly selected for phase II of the study.

Information on coronary heart disease risk behaviors and biological risk factors in relation to unhealthy dietary habits, physical inactivity, smoking, alcohol consumption, psychological distress, overweight and high blood pressure was collected from all students in component I. A self administered questionnaire was used to collect information on behavioral risk factors and measurement of weight, height and blood pressure was carried out to assess overweight and high blood pressure. Information on socioeconomic status of parents of the students was also collected using a self administered questionnaire. In addition, a biochemical assessment of serum lipid and plasma glucose level was carried out in a sub sample of students in component II. In phase II, a school based intervention trial was carried out to reduce sedentary behavior and to improve knowledge and attitudes towards coronary heart disease risk factors among the sub sample of students included in component I of phase I. The intervention program was evaluated using a self administered questionnaire.

The study revealed that the overall ever smoking prevalence was 1.8 % (95% CI: 1.4-2.2) among the adolescents with a prevalence of 3.7% (95% CI: 2.9-4.7) among males and 0.2% (95% CI: 0.0-0.5) among females while the overall prevalence of ever alcohol

consumption was 3% (95% CI: 2.5-3.6) among adolescents with a prevalence of 5.2% (95% CI: 4.2-6.3) among males and 1.3% (95% CI: 0.9-1.9) among females. The prevalence of overweight was 5.3% (95% CI: 4.6-6.0) and it was slightly higher among males compared to female adolescents. The overall prevalence of prehypertension was 5.5% (95% CI: 4.8-6.3) and elevated blood pressure was 0.1% in this study. High blood pressure and overweight was significantly associated ( $p=0.001$ ) in the study. The overall prevalence of insufficient physical activity was 33.6% (95% CI: 32.1-35.2) and it was higher among females than male students. BMI levels and physical activities did not show a relationship but hypertension was lower among physically active male and female adolescents. The overall prevalence of psychological distress was significantly higher among male adolescents (12.5%) (95% CI: 11.0-14.2) than female adolescents (7.1%) (95% CI: 6.1-8.3). Psychological distress was lower among physically active adolescents. The findings of the study showed that socioeconomic status of parents is an important determinant of psychological distress among adolescents.

Consumption of fruits was low among both male (44.9%) and female (42.1%) students. When considering energy dense foods, consumption of deep-fried foods were high among both sexes (more than 55%). Consumption of commercially baked foods was also higher among male (33.8%) students than female (25.9%) students. Consumption of sugar sweetened beverages also high among both sexes.

In the present study, the mean FBS was significantly higher among the male students. The mean total cholesterol was 184.33mg/dl. The mean total cholesterol, triglycerides and LDL were higher among female students. The mean FBS, total cholesterol, triglyceride and LDL values were higher among overweight students than normal and underweight students for both sexes. The mean values of FBS and lipid profile were higher among students with pre-hypertension and elevated blood pressure than students with normal blood pressure for both sexes.

Knowledge on most of the CHD risk factors was satisfactory among the adolescents. The intervention program was successful and it had an effect in reducing physical inactivity and further improvement of knowledge and attitudes towards CHD risk factors among the

adolescents. But the sustainability of improved physical activities, knowledge and attitudes decreased with time.

This study demonstrates that the prevalence of some of the behavioral and biological risk factors for CHD was alarmingly high among the adolescents in the urban sector. Health service providers should pay special attention on this emerging issue.