

## Abstract

Sri Lanka showed broad socioeconomic changes including rapid urbanization and industrialization resulting in considerable nutrition transition leading to overweight and obesity as an emerging problem.

The present study was designed with the objective of describing the prevalence of overweight/obesity and to assess factors associated with it among 14 to 15 years old school children in the Colombo education zone. It also aimed to develop and validate an instrument to assess an adolescent's dietary habits and to assess the effectiveness of a nutrition education package to promote healthy eating habits among adolescents. In order to achieve these objectives, a school based study was carried out in the Colombo education zone.

The preset study was conducted in six stages. Stage I was conducted to develop and validate the Adolescent Dietary Habits Assessment Questionnaire (ADHAQ). Stage II was a cross sectional descriptive study to estimate the prevalence of overweight/obesity and to identify some factors associated with overweight/obesity. One thousand seven hundred and fifty subjects were selected for the descriptive study using the cluster sampling method. Stage III and IV were qualitative data collection from parents to assess their knowledge and views regarding diets to adolescents; data collection from stake holders of school canteens regarding their attitude towards food sold at the canteen; and the canteen policy. Stage five was designing an education package based on stages II – IV to change the unhealthy dietary habits. Stage six was the randomized controlled trial to assess the effectiveness of the newly designed education package.

The ADHAQ was validated by using judgmental and criterion validity. Criterion validity of the food habit questionnaire was assessed by using a 7-day food inventory method as a standard. The study revealed a good correlation coefficient ( $\gamma > 0.7$ ) for most of the food habits between the gold standard and ADHAQ concluding that it is a good instrument to measure adolescents' dietary habits.

Data were collected from 1728 students in relation to socioeconomic characteristics, physical activity and dietary habits. Data were collected from all participants using a self administered questionnaire. Height and weight were measured and age specific BMI was calculated to determine the over weight and obesity prevalence.

Prevalence of over weight and obesity among adolescents were revealed as 10.8% with no gender difference. Studying in a semi government or international school (OR 2.62), living in the Colombo District (OR 2.09), higher family income (OR 1.78), activities that lead to sedentary behaviour such as sitting activities for more than four hours (OR 3.06) and not doing sports at school (OR 2.41) were found to be significantly associated with adolescent over weight and obesity. Parental non communicable diseases such as diabetes (mother OR 4.46 and father OR 2.40) and adolescents who had a perception of their mother (OR 5.70) or father (OR 2.75) being obese were also found to be significantly associated with adolescents' over weight and obesity.

Focus group discussion with parents revealed that there is a vast range of attitudes and knowledge gaps with regard to adolescents' diet. Key informant interviews with canteen stake holders and observation of canteens revealed that most school canteens are not following and encouraging healthy eating habits or adhering to canteen policy and there was lack of supervision and monitoring by Health authorities and the Ministry of Education.

The short period of nutrition education intervention to adolescents and their parents resulted in a significant reduction of bad dietary habits among overweight and obese adolescents. The intervention study showed an impact even after six months of intervention concluding that even a short term nutrition intervention targeting both adolescents and their parents results in reduction of bad dietary habits.

As over weight and obesity is an emerging trend in Sri Lanka especially in urban areas, it is very important to take necessary action to control over weight and obesity as well as its predictors. This study clearly demonstrated that the newly developed nutrition education package was very useful in the reduction of bad dietary habits which is one of the main predictors of adolescents' overweight and obesity.