

## **A study of school children's body mass index and eating habits in Galle district**

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### **1. Introduction**

Healthy eating habits are very important for school aged children in order to improve their performance and to prevent many non-communicable diseases that can cause at a very early stage in their life. Sri Lanka has undergone rapid development during the past few decades, resulting in broad socioeconomic changes including rapid urbanization and industrialization (Hettiarachchi et al. 2018). Due to those reasons; the lifestyles of adults as well as children also change and most of them prefer to consume instant food other than the balanced diet. The eating habits are influenced by lack of time to prepare meals at home, and the availability of fast-food outlets and food vending machines (Wickramasinghe et al. 2010). These causes may lead to a nutrition transition with an increase in the prevalence of overweight and obesity. The Body Mass Index (BMI) is widely accepted as providing a convenient measure of a person's fatness (Jayasinghe and De Silva 2014). It is defined as a person's weight in kilograms divided by the square of the person's height in meters ( $\text{kg}/\text{m}^2$ ) (WHO, 2021). It's simply numeric measure of a person's body 'thinness' or 'thickness'. This study was carried out to get an idea about whether a child has the healthy BMI which represents an index of an individual's fatness. Also, to compare the body mass index with eating habits, lifestyle and physical activities of the school children in Galle district.

### **2. Materials and Methods**

#### **Study description**

The sample of the study was 151 school children between 10 to 19 years of age in Galle district (75 females, 76 males) and it was conducted as a multistage study. Respondents were selected by random sampling technique. This study sample of children was obtained from 30 schools.

#### **Questionnaire**

Data were collected primarily using a self-administered online questionnaire thorough Google form. The questionnaire was divided into four main parts. First part of the questionnaire was focused on the personal information of the respondent: age, place of the residency, gender, height, weight, income of the family and occupation of the parents/guardian. The second part of the questionnaire consisted of details about food habits of the respondents.

The third part of the questionnaire inquired about the respondent lifestyle pattern. Finally information was gathered on the respondent's idea about physical activity impact for the body maintenance.

#### **BMI**

Reported height and weight were used to calculate BMI as  $\text{weight}/\text{height}^2$  ( $\text{kg}/\text{m}^2$ ).

#### **Statistical analysis**

Surveyed data were descriptively analysed by using IBM SPSS and Microsoft Excel. Regression and correlation analysis were conducted to find out relationships in BMI with gender, daily fluid intake, hours engaged in physical activities, consumption of high sugar-containing beverages, mobile phone usage, consumption of additional meal/s and usage of caffeine-containing drinks after the main meal. Chi square analysis was conducted to find out which gender category most aware about the instant food and find out which gender category has low BMI. Frequency analysis was conducted to find out frequencies in some variables.

### 3. Results and Discussion

According to the demographic variables of the respondents in the sample majority of school children are from rural context (43.7%) wherein others are from semi urban (37.7%) and urban (18.5%). It has revealed the 33.8% of them are from low- income families (less than Rs. 15000 per month).

Considering the food habits of respondents in the survey, 31.8% students neglect any meal per day. Majority of children miss their breakfast and as a percentage it is 70.8%. The reported reasons for not having meals properly are the tight daily schedule (25.5%), economic reasons (2.1%) and due to other reasons (72.3%) like; lack of appetite, fasting/religion, lack of parental emphasis on the breakfast and not being hungry. For breakfast, most of the respondents (61.6%) prefer to eat rice and curry while for dinner it is 47.7%. The least number of children consume instant food for their main meals and as a percentage it is 4% in the breakfast. It was revealed that 73.5% of respondents consume additional meals in between their main meals. According to the results 8.6% students have been reported as vegetarian.

Considering the knowledge and habits regarding instant food of the respondents, the majority (92.1%) of them have an idea about what is an instant food. According to the chi- square test, male (51.8%) students have an idea about what is an instant food than female students. Around 54% of respondents are consuming instant food rarely. Water consumption of the respondents is not at a satisfactory level and only 55.3% use 2-3 liters of water as daily intake. Considering the non-communicable diseases among the respondents 12.7% get medicines for eye diseases (7.9%) and for nerve diseases (3.3%). There are no other diseases reported within the sample.

Considering the lifestyle of the respondents' majority (89.4%) are having a good sleep after dinner. Nearly 37% of respondents are interested in having a drink containing caffeine after their main meals. Also, 43% of the respondents preferred high sugar containing drinks and majority of them are knowledgeable about the color coding of sugar containing beverages.

A satisfying number of respondents (90.7%) have an awareness of the importance of physical activities for maintaining good health and it was revealed that 70.2% are concerned about their body shape.

According to nutrition division of Ministry of Health in Sri Lanka, BMI is categories into five groups; underweight (<18.5), normal (18.5- 22.9), risk to overweight (23-24.9) overweight (25-29.9) and obese (>30). Considering the calculated BMI values of the sample, 43% are in the healthy range of BMI, which is the value range between 18.5-22.9. Nearly 44% are in below the healthy range (<18.5) of BMI while nearly 6.6% are in the range of risk to overweight and 6.6% are above the healthy range (include in overweight and obese categories) of BMI. Therefore, a considerable number of respondents haven't reached the healthy range of BMI yet. It has revealed that 36 males and 39 females are present in the sample having less than its median BMI value which is 19.06.

The relationship of BMI with the variables of income of the family, sleeping hours, taking extra meal/s, daily water consumption, consuming sugar-containing beverages, sporting hours and mobile phone usage were analysed by using Pearson's correlation statistical tool. According to

the results it has revealed that only two variables have the relationship with BMI at 0.05 significant level. They are extra meal/s consumption and the family income.

#### 4. Conclusions

Among the respondents 43.7% were found as the BMI exists in below 18.5(kg/m<sup>2</sup>) and thus they are suffering from underweight. Only a few percent (5.9%) have been recorded as overweight within the sample. Underweight among the adolescents in the Galle district might be a significant public health problem. The main reason for this problem might be most of the underweight respondents are from the rural context and it was reported as 48.5%. Within the rural context most of them are from low income families (37.9%) and therefore they are unable to concern about their meal properly.

#### 5. References

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