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Prevalence of Overweight and Obesity among Upper Primary School Children from selected Schools of Thiruvananthapuram Corporation

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ABSTRACT

Childhood obesity represents a major health problem and has increased worldwide rapidly in the past two decades. The present study was intended to assess the prevalence of overweight and obesity among upper primary school children from selected schools of Thiruvananthapuram Corporation. The objectives were to estimate the prevalence of overweight and obesity among upper primary school children, assess the life style practices of upper primary school children, find out the association between overweight/obesity and selected socio- demographic variables and to find out the association between overweight / obesity and life style practices. The study was done by quantitative approach and research design used was cross sectional design. Data was collected from 400 upper primary school children from Government schools of Thiruvananthapuram Corporation, studying in 5th, 6th and 7th standards. Multistage cluster sampling was used for selection of samples. The prevalence of overweight and obesity was assessed using IAP BMI chart and structured six point likert scale was used to assess the life style practices of upper primary school children. The data were analysed using descriptive and inferential statistics. The prevalence of obesity among children was 9.5% and overweight was14.5%. The study also revealed that 37.25% upper primary school children had moderately healthy life style practices, 34.25% children had unhealthy life style practices and 28.5% children had healthy life style practices. The findings also revealed that the overweight/obesity was significantly associated with gender, type of family, socio-economic status and life style practices of upper primary school children ($p<0.05$).Childhood obesity is an important risk factor for future health issues. Encouraging healthy life style and exercise routine in children would prevent the occurance of this epidemic.

KEYWORDS: Prevalence, Overweight, Obesity, Upper primary school children, Life style practices

INTRODUCTION

Childhood obesity is becoming a significant public health challenge in the twenty- first century, with a troubling increase in its prevalence across many developing countries. According to WHO statistics, the

prevalence of obesity among children aged 5-19 years surged from 4% in 1975 to 18% in 2016, representing a dramatic increase of over three- time.[1]

The exact mechanisms behind obesity development remain not fully understood, but it's clear that it occurs when energy intake exceeds energy expenditure. Because there are multiple factors contributing to this imbalance, tackling the rising prevalence of obesity requires addressing various underlying causes rather than focusing on a single etiology. Genetic factors can influence a child's susceptibility to obesity, but environmental factors, lifestyle choices, and cultural contexts play more significant roles in the increasing global prevalence of obesity.[2]

The prevalence of overweight and obesity among children has surged dramatically over the past decades, with childhood obesity rising at a faster rate than adult obesity in many countries. Paediatric obesity is increasingly linked to a growing range of adult health conditions, including cardiovascular disease and type 2 diabetes. Obesity that begins in childhood is one of the most significant health challenges worldwide.[3]Forty two million infants and young children were overweight or obese, worldwide by 2013 and 70 million young children will be overweight or obese by 2025 if current trends continue. [4]

A cross sectional study was conducted on Prevalence of obesity and overweight among school children of Pune city, Maharashtra. The sample size of the study was 1281 children .They reported, the prevalence of obesity and overweight as 5.62% and 9.99% respectively. [5] A study was conducted on prevalence of obesity and overweight in urban school children in Kochi, Kerala. They reported that the prevalence of overweight and obesity were 21.9% and 7.5% respectively.[6]

A cross sectional study was conducted on the prevalence of overweight and obesity inaffluent school children of Thrissur, Kerala. Sample size of the study was 1577 .The findings showed that the overweight and obese among children was around 10%.[7] A study on 'Survey of obesity among school children in Kerala wasconducted at Vadavukode block in Ernakulum district. The study was conductedamong 1104 school children. The study revealed that 13.9% were overweight and7.3% were obese. The combined prevalence of overweight and obesity was 21.2% .[8] The International Association for the Study of Obesity estimates that up to 200 million school aged children are either overweight or obese. Obesity has significant negative health impacts on both childhood and long term.[9]

Those preventive measures are indeed key strategies for addressing childhood obesity. Preventive measure of childhood obesity composed of regular meal timings, including breakfast, adequate sleep (7-8 hours daily night),45 minutes of regular moderate to vigorous physical activity for energy balance, screen time below 1 hour daily for the improvement in physical activity, avoidance of snacking and inactivity and screen exposure while eating and along with lifestyle modification. Implementing these measures can create a supportive environment that encourages healthy habits. It's also important to involve families, schools, and communities in these efforts to create a holistic approach to preventing childhood obesity.[10]

The perusal of the literature survey and observation of the researcher found that many of the school children who are obese and not engaged in any physical activity. Therefore the present study was conducted to estimate the prevalence of overweight and obesity among upper primary school children and assess the lifestyle practices of upper primary school children. The study also describe the association between overweight / obesity among upper primary school children and selected socio- demographic variables and also find out the association between overweight / obesity among upper primary school children and life style practices.

PROBLEM STATEMENT

A study to assess prevalence of overweight and obesity among upper primary school children from selected schools of Thiruvananthapuram corporation.

OBJECTIVES

PRIMARY OBJECTIVE

1. Estimate the prevalence of overweight and obesity among upper primary school chi

SECONDARY OBJECTIVE

1. Assess the lifestyle practices of upper primary school children.
2. Find out the association between overweight / obesity among upper primary schoolchildren and selected socio- demographic variables.
3. Find out the association between overweight / obesity among upper primary schoolchildren and life style practices .

OPERATIONAL DEFINITIONS

PREVALENCE

In the present study prevalence refers to prevalence of overweight and obesity among upper primary school children, which is calculated by dividing the total number of upper primary school children with overweight and obesity by the total number of children assessed during the period.

OVERWEIGHT / OBESITY

In this study overweight and obesity is defined as an excessive body fat accumulation in upper primary school children in the age of 10,11, and 12 yeasrs which is assessed using IAP Body Mass Index Chart. BMI of 85th percentile for age and sex was taken as cut off level for overweight and above 95th percentile for ageand sex was considered obese.

OVERWEIGHT		
Age (years)	Boys(Kg/m^2)	Girls (Kg/m^2)
10	18	18.75
11	18.75	19.25
12	19.50	20.25

OBESITY		
Age(year)	Boys (Kg/m^2)	Girls (Kg/m^2)
10	20.50	22
11	21.75	23
12	22.50	24

UPPER PRIMARY SCHOOL CHILDREN

In this study upper primary school children refers to children who werestudying in class 5 to 7 with in the age group of 10 - 12 years.

ASSUMPTIONS

1. A significant proportion of upper primary school children may have overweight andobesity.
2. The life style practices among upper primary school children may vary.

HYPOTHESES

H_1: There is significant association between overweight / obesity among upperprimary school children and selected socio demographic variables.

H_2: There is significant association between overweight / obesity among upperprimary school children and lifestyle practices.

MATERIAL AND METHODS

RESEARCH DESIGN

The research approach adopted for this study was quantitative approach and the design used for this study was cross sectional design.

SETTING OF THE STUDY

The study was conducted in seven Government schools of Thiruvananthapuram corporation.

POPULATION

The population for the study was upper primary school children.

SAMPLE

The sample for the present study was upper primary school children from Government schools of Thiruvananthapuram corporation, studying in 5^{th}, 6^{th} and 7^{th} standards.

SAMPLING TECHNIQUE

With the help of multi stage cluster sampling technique, 400 upper primary school children were selected as sample for the study.

DEVELOPMENT AND DESCRIPTION OF TOOLS IN THE STUDY

The research tool was devised on the basis of related literature and under the guidance of subject experts. An intense search of literature and extensive consultation with experts in the field of child health nursing and general medicine were done in selecting the appropriate tool. The items of the tool were collected, scrutinized, and checked for any overlapping, cross checking were done and modification made in consultation with experts. Content validity done by seven expert. Additions and suggestions given by the expert were incorporated and tool was finalised.

Tool 1- Questionnaire to assess the socio- demographic data :It consist of eight questions regarding age, gender, class of studying, type of family, socio economic status, diet, occupation of father, occupation of mother.

Tool 2 – Standardized weighing machine and measuring tape to assess anthropometric measurements. BMI is calculated using formula

$$BMI = \frac{\text{Weight (in kg)}}{\text{Height (in m}^2\text{)}}$$

IAP guidelines for classification of BMI in children

Underweight - <5th percentile

Normal - 5th – 85th percentile

Overweight - 85th – 95th percentile

Obesity - >95th percentile.

Tool 3 – A self-prepared six point likert scale was used to assess the life stylepractices of upper primary school children. It is prepared under two domains

Part 1 Dietary practices

Part 2 - Physical activity

It consist of 23 items include both positive and negative statements on dietary practices and physical activity. Answers were recorded as daily, 2-3 times weekly, weekly once, once in 2 week, once in a month and never. Scored as 6-1, reverse scoring was done for negative statements.

DATA ANALYSIS

Analysis of data were done using SPSS version 23. The socio- demographic variables and lifestyle practices were analyzed by descriptive statistics and expressed in terms of frequency and percentage. Prevalence of overweight and obesity was obtained in percentage. Association between overweight / obesity and socio- demographic variables and with lifestyle practices were assessed by Chi –square test.

RESULTS

Socio- demographic data.

Among 400 upper primary school children, 34.5% of upper primary school children belonged to the age 12 years, 33.75% children belonged to the age 11 years and 31.75% children belonged to the age 10 years. About 57.5 % of upper primary school children were males and 42.5 % were females. Majority (37.5%) of upper primary school children were studying in seventh standard, 34.75% children belonged to sixth standard and 27.75% children in fifth standard. In the present study 53.25% of upper primary school children belonged to nuclear family, 39% children in joint family. Most of upper primary school children (64%) belonged to BPL category. Majority (98.5%) of upper primary school children were non vegetarians. The study revealed that 35.25 % of fathers were self-employed, 34% were daily wagers, 20.75% were private employees, 7.75% were government employees and 2.25% were unemployed. Majority (46.5%) of mothers were homemakers, 17.5% were private employees, 14.0% were self – employed, 11.5% were daily wagers and 10.5% were government employees.

Prevalence of overweight and obesity among upper primary school children.

The prevalence of overweight among upper primary school children were 14.5% and that of obesity were 9.5%.

Assessment of life style practices of upper primary school children.

The study revealed that 37.25% upper primary school children had moderately healthy life style practices, 34.25% children had unhealthy life style practices and 28.5% children had healthy life style practices.

Association between overweight/obesity among upper primary school children and selected socio-demographic variables.

Chi square test was done in order to determine the association between the overweight/ obesity among upper primary school children and selected socio – demographic variables.

The present study showed that prevalence of overweight/obesity had statistically significant association with gender (p = 0.029), type of family (p = 0.037) and socio- economic status (p = 0.011).

Association between overweight/obesity and lifestyle practice of upper primary school children.

The study revealed that there was statistically significant association between overweight/obesity and lifestyle practice (p =0.001).

DISCUSSION

Childhood overweight and obesity continues to be a serious health issue throughout the world. A main reason for childhood overweight and obesity is the behaviour children pick up from their parents and caregivers. The childhood overweight and obesity can be prevented by teaching the children about healthy eatinghabits and encouraging them to stay physically active.

The present study data shows that around 53.25% upper primary children belonged to nuclear family which was consensus with the National Family Health Survey (NFHS 5) report which shows that in Kerala, almost three-fifths (56%) of households are nuclear families.[11]Majority of the mothers in this study were home makers (46.5%) which was supported by the National Family Health Survey (NFHS 5) report which shows that inKerala, almost three- quarters (74%) of mothers were homemakers.[11]

In the present study it was found that 76% children had normal body weight 14.5% children had overweight and 9.5% children had obesity. A cross sectional study was conducted among school going children of Puducherry, to examine the prevalence of overweight and obesity. They reported that the overall prevalence of overweight and obesity was 13% and 6.8% respectively. The result obtained is also congruent with the current study.[12]

The present study shows a significant association between overweight/obesity and socio-demographic data such as gender (p=0.029), type of family (p=0.037) and socio-economic status (p=0.011). This result is supported by a cross sectional study conducted in Kottayam regarding overweight and obesity in school age children, which also shows a significant association of gender (p value= 0.000 and 0.041) and overweight/obesity.[13] A school based survey conducted in Karnataka to study the prevalence of overweight / obesity among school children, identified significant association of gender with overweight / obesity.[14]

The present study shows a significant association between overweight/obesity and lifestyle practices. Similar findings were found in school children in B. G.Nagara,identified there was significant association with the type of food consumption, screentime, daily physical activity and overweight/ obesity .[15] A cross –sectional study was conducted among school children in Dehradun,to examine the physical activity correlates of overweight and obesity in school-going children, which was identified significant association of overweight/obesity and physical inactivity related to passive transport to school, missed opportunities for play during lunch breaks, lack of participation in household work, and excessive viewing of television.[16]

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