

# Knowledge on Prevention of Obesity among the Students from Selected High Schools

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**Abstract:** *The study was conducted to assess the existing knowledge regarding prevention of obesity among school children in selected schools of Miraj, Sangli and Kupwad corporation area, Maharashtra. Methodology: The researcher has adopted the Quantitative research approach. Exploratory Descriptive design was used. The study was conducted at the selected area of Sangli, Miraj and Kupwad corporation area which includes Alphonsa School, Miraj and New English School Miraj for the study. The samples were students studying in high schools of Sangli, Miraj and Kupwad corporation area. The sample size selected for this study was 160. The simple random sampling method was used. Findings: Out of 208 subjects, 112(58.3%) were male. It was observed that majority of subjects 173(83.2%) resided in urban area. It is seen that 152(78%) subjects belonged to nuclear family and 97(46.6%) family income was less than Rs 10,000/- per month. Among the samples, 123(59.1%) preferred non-vegetarian type of diet. The study also revealed that most of the mother had collegiate education 102(49%) and 163(78.3%) were housewife. Majority of father had collegiate education 123(59%) and 109(52.4%) were into service. The subjects(82.21%) who correctly responded to the items regarding meaning of obesity, (55.76%) regarding appearance of obese person, (46.63%) factors contributing to obesity, 14.9% knew the type of diet contributing to obesity and (12.01%) knew the highest fat containing food item. Majority (91.34%) students performed exercise and (62.5%) responded correctly to the form of work which reduces obesity (62.01%) related to psychological effect seen. Only (17.3%) of the subjects answered correctly to the item related to effective prevention of obesity, 33.17% of subjects knew how obesity affected the body. The study revealed that (63.46%) of the subjects had knowledge about measures needed to treat obesity. There was statistically significant association between knowledge score and father's occupation, between knowledge score and obesity of parents.*

**Keywords:** knowledge, prevention, obesity, students, high schools.

## 1. Introduction

Obesity is defined, "as a condition in which excessive accumulation of fat in the adipose tissues has taken place. It arises when the intake of food is in excess of physiological needs. Obesity is the most common nutritional disorder in the western countries and among the higher income groups in the developing countries [1].

Obesity now considered as a "killer lifestyle" disease is an important cause of preventable death worldwide. According to the World Health Organization, 1.2 billion people worldwide are officially classified as, overweight. This is probably the most sedentary generation of people in the history of the world [2].

Adolescent obesity also known as, "New World Syndrome" is a global health challenge of the 21<sup>st</sup> century, with morbidity obesity affecting 5% of the country's population. Obesity in teenagers is a growing problem that has worsened in recent times. America is a top leader in obesity in teenagers. It is believed that more than 25% of schoolchildren are overweight and in fact, obese, and nearly a fourth of them are at risk of getting heart disease, diabetes, stroke and possibility, early death [3].

For developing countries like India, morbid obesity has not yet become a public health priority. Well the reasons are still far from clear. Probably, India is, in our own eyes, still a country of poverty, hunger and malnutrition. Yet, statistics suggest otherwise. India is one of the capitals of diabetes and cardiovascular diseases. India's economy is, by all accounts,

better poised to withstand the recessionary trends seen across the major nations of the globe. Making it less poor and more "wealthy". Yet it is this very wealth which brings with it an unwanted epidemic of obesity, diabetes and cardiovascular disease [12].

Obesity has reached epidemic proportions in India in the 21<sup>st</sup> century, with morbidity obesity affecting 5% of the country's population. India is following a trend of other developing countries that are steadily becoming more obese. Unhealthy, processed food has become much more accessible following India's continued integration in global food markets. Indians are genetically susceptible to weight accumulation especially around waist. In the Indian scenario, even with the growing awareness about health and fitness, more than 3% i.e. 3 crores of the Indian population is obese. There is an urgent need to create public awareness about the mechanisms of identification, prevention and treatment of severe obesity than ever before [2].

Childhood obesity affects every organ system in the body. The risks include diabetes, high blood pressure, and high cholesterol. In fact, roughly 70 percent of obese youth are thought to have at least one risk factor for heart disease, according to the CDC. What's more, experts agree that obese youth are at high risk of becoming obese adults, prompting even more health problems, including joint disease, heart disease, sleep apnea and certain cancers. The health risks of obesity are not only physical, they're psychological as well. Childhood obesity has been linked to depression, anxiety and poor self-esteem [5].

Obesity threatens the health of today's children to such an extent that they may have a shorter lifespan than parents in India. Thus with this background the investigator felt the need to assess the knowledge on prevention of obesity. Thus the research was conducted on this need.

## 2. Review of Literature

Learning is the addition of new knowledge and experience Interpreted in the light of past knowledge and experience. Teaching and learning is an integral part of nursing. Nurses have the responsibility to educate patients related to various aspects and keep themselves updated. Various teaching strategies are used to increase knowledge, such as lecturing, demonstration, discussion and self-education. [6].

A study was conducted on Strategies for prevention and treatment of obesity among children in Taiwan. Childhood obesity is a problem because it is an important predictor of adult obesity; furthermore, obesity in childhood appears to increase the risk of subsequent morbidity, whether or not obesity persists into adulthood. Systematic approaches to provide adequately nutritional education, dietary intervention, and encouraged regular physical activity are needed to prevent the occurrence of obesity and to reduce the increase of obesity-related disorders among children [25].

Lifestyle diseases like obesity, hypertension, diabetes mellitus, coronary heart disease and stroke in adult have been related to the prevalence of risk factors in childhood and adolescents. Children are likely to become symptomatic with respect to these disorders by the adolescent period. Adolescent is a crucial period in life. It implies multiple physiologic needs and habit begins in adolescent period and has lifelong impact on the lifestyles diseases. Adolescents between the ages of 10 to 19 years from about 80% of the population in world and 35% in India [8].

Obesity is an upcoming problem and very soon it will be showing its disastrous effects on individual's health. With increased use of gadgets, decreased outdoor activities, play, increased junk food and sedentary habits, overweight is increasing even in our country. Obesity has reached epidemic proportions in India in the 21st century, with morbid obesity affecting 5% of the country's population. India is following a trend of other developing countries that are steadily becoming more obese[8]. A study on Britain's obesity death rate -June 2013, reveals of all the deaths in the UK that were linked to excess weight, about 66% were down to obesity, and 33% to being overweight. In around 70 per cent of overweight-linked cases, the final cause of death was heart disease and in 20%, it was cancer. Overall, around 12% of heart disease deaths in Britain were due to being overweight, and 5.7% of total deaths from cancer were also directly caused by being overweight or obese. Excess weight is a major public health problem. One in two in the EU is obese or overweight,' he added. The study found that up to 400,000 deaths each year in the EU are directly linked to excess weight [9].

60% of women in the India's capital, New Delhi, are suffering from abdominal obesity, according to a survey by the All-India Institute of Medical Sciences. 'It is a serious problem for India,' Anoop Misra, the co-author of the study, said in Dec 2005, India's newly rich battle with obesity. With obesity come related problems, from diabetes to heart failure. An estimated 25 million Indians have diabetes, and this is forecast to grow to 57 million by 2025[13].

In 2010, more than 40 million children under five were overweight. Once considered a high-income country problem, overweight and obesity are now on the rise in low- and middle-income countries, particularly in urban settings. Close to 35 million overweight children are living in developing countries and 8 million in developed countries [14].

Childhood obesity was considered a problem of affluent countries. Today the problem is started appearing even in developing countries. Globally the prevalence of childhood obesity varies from over 30% in USA to less than 2% in sub Saharan Africa. Currently the prevalence of obese school children is 20% in UK and Australia, 15.8% in Saudi Arabia, 15.6% in Thailand, 10% in Japan and 7.8% in Iran [15].

Additional research is needed in the areas of evidence-based, community-level prevention interventions, as well as evidence-based practice guidelines for nursing. Perhaps most importantly, this article has noted that we need an in-depth exploration of how to assure that nurses are equipped with the policy, leadership, and behavioral change intervention skills, such as advocacy, collaborative leadership, and social marketing skills, that hold promise for preventing the critical public health challenge of overweight and obesity in our children [16].

Childhood obesity is associated with detrimental psychological effects. Obese children often suffer from self-blame, negative body image, and depression related to societal stigmatization of obesity. Research has found young children prefer to play with disabled children rather than play with a child who is overweight. Obese children tend to be rejected by their peers and often suffer low self-esteem which can impair academic and social functioning. Furthermore, childhood obesity has long-term consequences for emotional and psychological wellbeing in adulthood [17].

The study conducted at Delhi among 4399 children (56.7% boys, 43.3% girls) of 4-17 years of age group, on "Problems encountered due to childhood obesity" revealed that obesity is associated with several risk factors for heart disease and other chronic diseases in adult life, including hyperlipidaemia, hyperinsulinemia, hypertension and early atherosclerosis, increased risk of gallbladder disease, osteoarthritis etc. Psychological consequences seen among adolescents include emotional ramifications, secondary to ridicule and labeling by their peers, including lower levels of self esteem [18].

The World Health report of the World Health Organization lists overweight as the fifth most serious risk factors for both developed and developing countries. WHO has forecast that

2.3 billion children the world over will be suffering from obesity and related problems. WHO describes the escalating global epidemic of obesity as one of today's most blatantly visible yet most neglected public health problem [19].

Adolescence obesity was considered a problem of affluent. Today this problem is appearing even in developing countries, leading to considerable co-morbidity and increased mortality. India is undergoing a rapid epidemiological transition. The burden of chronic diseases is over taking the burden of infectious diseases and the prevalence of obesity is increasing globally. Recent years many studies have reported on prevalence of obesity in school children in various parts of India.

### 3.Statement of the Problem

"A study to evaluate the existing knowledge on prevention of obesity among the students in selected high schools of Sangli, Miraj and Kupwad corporation area".

#### Objectives of the Study

- 1) To assess existing knowledge related to prevention of obesity among the students in selected high schools of Sangli, Miraj and Kupwad corporation area.
- 2) To find out the association between knowledge score and selected socio demographic variables of students in selected high schools of Sangli, Miraj and Kupwad corporation area.
- 3) To make an attempt to develop Self Instructional Module on prevention of obesity among the students in selected high schools of Sangli, Miraj and Kupwad corporation area.

#### Operational Definitions

**Evaluate:** In this study, „evaluate“ refers to ascertain the existing knowledge related to prevention of obesity.

**Knowledge:** In this study, „knowledge“ refers to knowledge score regarding prevention of obesity.

**Obesity:** In this study, „obese“ refers to those students whose BMI is calculated to be more than 30 as per age and sex.

**Student:** In this study, the student who is studying in 8<sup>th</sup> standard, 9<sup>th</sup> standard and 10<sup>th</sup> standard in school are considered as student.

**Assumptions:** The students have some knowledge about obesity.

#### Limitation of the Study

The study is limited to short duration.

#### Research Methodology

Research methods refer to steps, procedures and strategies for gathering and analyzing data in research involved. Research methodology is a way to

systematically solve the research problem. It is a science of studying how research is done scientifically [7].

#### Research Approach

The researcher has adopted the Quantitative research approach.

#### Research Design

The researcher has adopted an Exploratory Descriptive design.

#### Setting of the Study

The setting for this study was the selected area of Sangli, Miraj and Kupwad corporation area which includes Alphonsa School, Miraj and New English School Miraj for the study.

#### Sample

The samples selected for the present study comprised of students studying in selected high schools of Sangli, Miraj and Kupwad corporation area.

#### Sample Size

The sample size selected for this study was 160.

#### Sampling Technique

The simple random sampling method was used .

#### Sampling Criteria

The following criteria were set for the selection of sample:

##### Inclusive criteria:

- Students of 8<sup>th</sup> to 10<sup>th</sup> standard who are willing to participate in this study are included in this study.
- Students who were able to read and write English or Marathi were included in the study.

##### Exclusive Criteria

- Students who were absent on the day of study were excluded from the study.

### 4.Development of the Tool

The Structured Questionnaire included two sections:

**Section I** it includes the 16 demographic variables like Gender, type of family, area of residing, education of parents, occupation of parents, family income, Dietary Pattern, students height in cms and weight in Kgs, Do you exercise?, if yes , specify? Are any of your parents obese? If yes specify? Student's Father Height in cms and Father Weight in Kgs? Student's Mother Height in cms and Weight in Kgs.

**Section II** it includes the 16 questions related to knowledge about obesity and its prevention. The total knowledge was plotted on the scale of four:

- 1-4 poor
- 5-8 average
- 9-12 good
- 13-16 excellent

## 5.Data Collection of the Study

Administrative permission was procured formally from the respective Principal New English School, Miraj. The study was conducted from 26<sup>th</sup> August 2013 to 10<sup>th</sup> September 2013, following the schedule 7am to 1pm. One day before data collection consent form were given to student, to take parent permission for study along with parent height and weight values. Next day from 07:00 am to 08:00 am, the investigator gave instruction about filling the questionnaire and 45mins time was given for filling the questionnaire.

### Plan for Data Analysis

The data analysis was planned to include descriptive and inferential statistics. The following plan of analysis was developed with the help of experts. The analysis was based on the objective and the assumption to be proved.

## 6.Findings and Discussion

To achieve the set of objectives of the study a total of 208 subjects included were as per the sample selection done. The subjects were distributed on different demographic variables as follows:

Out of 208 subjects, 112(58.3%) were male. It was observed that majority of subjects 173(83.2%) resided in urban area. This finding is supported by school-based cross-sectional study was carried out among 2785 affluent adolescents of six public schools in Meerut during the period October 2003 to March 2004[20].

It is seen that 152(78%) subjects belonged to nuclear family and 97(46.6%) family income was less than Rs 10,000/- per month.

Among the samples, 123(59.1%) preferred non-vegetarian type of diet.

This is supported by[4] significant improvements in nutrition knowledge were seen in all ( $p < 0.01$ ) between baseline and post-intervention, and results were highly significant in the nutrition and combined group ( $p < 0.001$ ). Overall, fruit and vegetable intake increased significantly ( $p < 0.01$  and  $< 0.05$ , respectively), with changes seen in fruit consumption in the nutrition group ( $p < 0.05$ ) and the control group ( $p < 0.05$ ) in particular[21].

The study also revealed that most of the mother had collegiate education 102(49%) and 163(78.3%) were housewife. Majority of father had collegiate education 123(59%) and 109(52.4%) were into service.

The above study is supported by the mothers of obese and overweight children were less educated and more working. Missing and or infrequent intake of breakfast at home, frequent consumption of fast foods, low servings per day of fruits, vegetables, milk and dairy products, with frequent consumption of sweets/candy and carbonated drinks were all

predictors of obesity and overweight among the schoolchildren studied.

Further maximum subjects BMI indicated were underweight 120(58%) and majority of parents had normal BMI.

The percentage of the subjects who correctly responded to the items regarding meaning of obesity shows that (82.21%) subjects responded correctly.

The items related to meaning of BMI, (66.82%) subjects responded correctly, and only (9.61%) had knowledge regarding the net calorie requirement for the age group 13 years to 15 years. It seems that only (8.65%) of girls and (13.64%) boys knew the ideal weight for age group 13years to 15 years. These findings was supported by reported a 4% reduction in BMI in students of 6<sup>th</sup> to 8<sup>th</sup> grades due to national-level awareness creation on childhood obesity.

It was observed that in item regarding appearance of obese person (55.76%) subjects responded correctly.

The percentage of the subjects who correctly responded to the item regarding factors contributing to obesity was (46.63%).

The percentage of the subjects who correctly responded correctly to the item regarding diet, only (14.9%) of the subjects knew the type of diet contributing to obesity and (12.01%) knew the highest fat containing food item.

These findings were supported in the report obesity was found to be significantly associated with high intake of junk foods ( $P < 0.05$ ), binge eating, and high calorie intake ( $P < 0.05$ ) [16].

It was surprising that (91.34%) students performed exercise and (62.5%) responded correctly to the form of work which reduces obesity.

These findings were supported by engaging in sedentary activities for  $>4$  hours a day ( $r = 2.0$ ,  $p = 0.02$ ) were independent risk factors for childhood overweight and/or obesity while exercising  $\geq 30$  minutes a day at home was a protective factor ( $r = 0.4$ ,  $p = 0.02$ ) [18].

The correct response to the item related to psychological effect seen in an obese person was (62.01%).

This study is supported by lack of physical activity and the presence of stress were identified as the most common risk factors for obesity development [22].

Only (17.3%) of the subjects answered correctly to the item related to effective prevention of obesity.

This findings is supported by prevention may be achieved through a variety of interventions targeting built environment, physical activity, and diet. Some of these potential strategies for intervention in children can be implemented by targeting preschool institutions, schools or



after-school care services as natural setting for influencing the diet and physical activity [22].

Only (33.17%) of subjects knew how obesity affected the body. This is supported by the prevalence of obesity has nearly doubled between 1980 and 2008. 65% of the world's population lives in a country where overweight and obesity kills more people than underweight. This includes all high-income and middle-income countries. In addition, 44% of the diabetes burden, 23% of the ischemic heart disease burden and between 7% and 41% of certain cancer burdens are attributable to overweight and obesity[22].

The study revealed that (63.46%) of the subjects had knowledge about measures needed to treat obesity

The second objective of the study was to find out association between knowledge and selected socio-demographic variables  $\chi^2$ calculated value shows that there was statistically association between knowledge and type of family.

The findings is supported by, the magnitude of obesity and overweight among male primary school children, and to find the possible association between obesity/overweight and dietary habits and socio-demographic differentials among them. The prevalence of overweight among the subjects was 14.2%, while that of obesity was 9.7%; the prevalence was more in the urban, older age students.

$\chi^2$  calculated value shows that was statistically significant association between knowledge score and father's occupation.

$\chi^2$  calculated value shows that was statistically significant association between knowledge score and obesity of parents.

## 7.Nursing Implications

The implication of the study could be discussed under four broad areas, namely nursing service, nursing administration, nursing education and nursing research.

### Nursing Service

Nursing plays an important role in delivery of the health services in urban and rural areas. They are the frontline in the implementation of various programmes. The female health worker at sub-centre can help in detect cases of obesity and refer them to expert for advice and treatment. The nurse at rural hospital can help by participation in promotion and prevention of obesity through street play, camp and health education.

### Nurse Educator

Nursing education prepares the nurse through basic nursing course for effective delivery of nursing services in hospital and community setup. Hence education plays important role in imparting knowledge, providing learning experiences, develop skills as a professional nurse. Nurse can educate parents regarding obesity, treatment and its prevention. She may suggest the school authorities to include lifestyle disease prevention topics to be included in school curriculum.

The nurse educator can make the health personnel aware through in-service education and educate nurses about the

magnitude of the obesity problem and its prevention. The nurse educators can develop different strategies to educate the people about prevention of obesity.

### Nurse Administrator

Health education can save many lives. She may plan and conduct regular physical examinations for the staff with follow up. The educational approach is a major means today for achieving changes in life practices through organizing various camps. The result though slow, is enduring and sufficient time should be allowed to have the desired change. Therefore the nurse administrator should invest more budget in preparing self instructional module, informational booklet, leaflets so as to educated the children and parents. All these efforts are for prevention of obesity

### Nurse Research

To increase the knowledge base of the nursing discipline, nursing research should be undertaken. Research is urgently required to develop new and improved methods for effective steps to bring awareness about obesity and its prevention. The results of the present study have opened up new avenue for further studies. The specific areas for research are recommended under the heading of recommendations.

The findings of study suggest that there is a need to impart knowledge regarding prevention of obesity among school children. Many such research can be conducted in near future which are specified in recommendation.

There is a need to prepare suitable audio visual aids in simple and concise form considering the language and background of the community this would help in disseminating proper knowledge among the school children through school health service programme.

A module for prevention of obesity has to be prepared through which the school children will be guided for prevention of obesity and a healthy life.

## 8.Recommendations

- 1) A similar study needs to be conducted on a large sample size with the same problem.
- 2) A study can be conducted about the school policies on prevention of obesity.
- 3) A similar study needs to be conducted on planned health teaching regarding prevention of obesity among school students.
- 4) A follow up study can be conducted to evaluate effectiveness of Self Instructional Module in retention of knowledge.
- 5) A comparative study can be taken in urban and rural area to find out the effectiveness of Self Instructional Module.
- 6) A study can be undertaken to assess the knowledge about prevention of obesity among medical students
- 7) A study can be done using different educational material.

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