



PREVALENCE OF OVERWEIGHT IN COLLEGE GOING GIRLS OF PARUL UNIVERSITY- A CROSS SECTIONAL SURVEY

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ABSTRACT

BACKGROUND:

Overweight is a major problem for health entity. According to a study there are around 22 million students under the age of 20 were obese while, 1 in 10 students were overweight. Age, gender, and high socio-economic living standards of life, Improper diet are factors responsible for causing overweight. The present study aims to find the prevalence of overweight in college going girls of Parul university.

METHODOLOGY:

Present study was cross-sectional survey in which 200 subjects under age criteria of 18-25 years college going girls were included by means random sampling and subjects who followed criteria. Outcome measure for study was Body Mass index. Subjects were explained about procedure and consent was taken. Data was collected and results were calculated through SPSS version 20.

RESULT:

200 subjects were included in study and results were calculated and data analysis was done using MS-excel 19 and SPSS version 20. It was found that 49% girls were under normal category, 11.5% were underweight, 33% were overweight and 6.5% were obese.

CONCLUSION:

On the basis of results, it can be concluded that there is 33% prevalence of overweight in college going girls of Parul University.

KEYWORDS: Overweight, BMI, Prevalence, Girls.

INTRODUCTION

Globally when we have a look towards the current situation of epidemic, there is rapid inclination in the epidemic of overweight. ⁽¹⁾ Overweight is a major problem for health entity. ⁽²⁾ According to definition overweight is defined as unnecessary or abnormal accumulation of fat in the body due to high caloric content or less physical activity. ⁽³⁾

The prevalence of overweight and obesity is reported by Centers for disease control and prevention and National health and Nutrition examination survey. ⁽⁴⁾ According to the data reported by National center for health statistics the rate of adults suffering from overweight or obese in United States where around 65.2%. ⁽⁴⁾ Also, according to a study there are around 22 million students under the age of 20 were obese while, 1 in 10 students were overweight. ⁽¹⁾

According to a study conducted by Adela Hruby till 2030 around 38% of the adult population of the world would be included in the category of overweight and other 20% of population would be considered to be obese. ⁽⁵⁾ According to a systematic review conducted in Asia, Pacific concluded that around 10% of countries were suffering from overweight and obesity and had to invest in healthcare. ⁽⁶⁾

In 2011 American college health association reported 34.1% of students at college where suffering from being overweight or obese. ⁽⁷⁾ As per the studies conducted in developing countries on university students there is high prevalence of overweight and obesity in Nigeria 10% ^(8,9), South Africa 10.8%–24% ^(8,10), Asia (China: 2.9%–14.3% ^(8,11,12), Thailand 31% ^(8,13), Pakistan 13%–52.6% ^(8,14,15), and India 11%–37.5% ^(8,16,17,18); Latin America (Colombia 12.4%–16.7% ^(8,19), Mexico 31.6% ^(8,20), the Middle and Near East (Oman 28.2% ^(8,21), Kuwait 42% ^(8,22,23), Iran 12.4% ^(8,24), and Turkey: 10%–47.4% ^(8,25,26). ⁽⁸⁾

According to a report provided by national family health survey in India, Punjab, Kerala and Delhi are the states that reported high level of overweight and obese. ⁽²⁷⁾

The Factors which are responsible for overweight are namely:

Age, gender, and high socio-economic living standards of life, Improper diet which includes missing daily breakfast, consumption of a greater number of meals, there desires for snacks, consumption of fast food and diet filled with fiber. ⁽²⁷⁾ Quality of life which includes sedentary lifestyle, bad habits like consumption of alcohol and smoking of cigarette. ⁽²⁷⁾

Psychological factors like anxiety, depression, abuses including physical, sexual, and verbal. ⁽⁸⁾

Risk factors which are associated with overweight are cardiovascular disease, disorders of musculoskeletal system, cancer, hypertension, diabetes, metabolic syndromes, dyslipidaemia, sleep apnoea, stroke. ⁽⁴⁾ Overweight can increase the risk of mortality. ⁽⁴⁾ Being overweight also affects the mental health of an individual, person tends to suffer from conditions like anxiety, depression and low self-esteem. ⁽⁴⁾

There many methods which are used to assess overweight. Body mass index is one of the methods used for the assessment of overweight. BMI can be measured by measuring the ratio of weight (kg) and square of height (meter). ⁽²⁸⁾ BMI is considered to be a reliable measure. ⁽²⁹⁾

According to categories of BMI subjects can be divided into underweight, normal, overweight, obese. ⁽²⁸⁾ There ranges are described as follows: Underweight <18.5 kg/m², Normal 18.5 – 24.9 kg/m², Overweight 25.0-29.9 kg/m², obese >30 kg/m². ⁽²⁸⁾

Overweight is considered to be an issue which needs attention, so need of this study is to find the prevalence of overweight among college going girls.

METHODOLOGY

- Source of data:
Parul University, Vadodara
- Method of data collection:
 - Study Design: Survey design
 - Study Duration: 3 Months
 - Sample size: 200 Subjects
 - Sampling Method: Random Sampling
- Criteria for selection
 - INCLUSION CRITERIA
 - Age: 18-25
 - EXCLUSION CRITERIA
 - Having any medical condition.
 - On weight reduction medication
- Outcome Measure:
 - BMI
- Materials
 - Pen
 - Paper
 - Stadiometer
 - Weighing machine
 - Calculator
 - Laptop

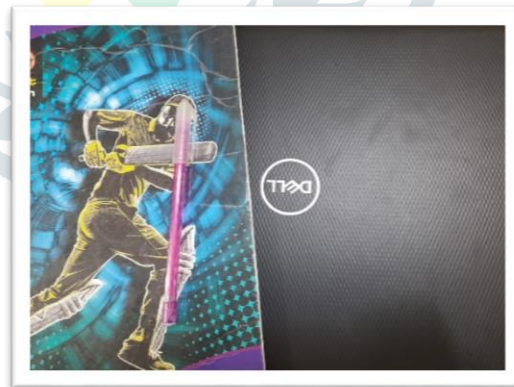


Figure 1. shows Materials used

PROCEDURE

A cross-sectional survey study was conducted in Parul university students. Permission for conducting this survey was taken from respective deans of Parul university. Screening of the subjects was done; 200 subjects were selected. subjects were given a thorough explanation regarding the study and written consent was taken. Outcome measure for study was BMI. Height was measured through standardised stadiometer and the weight was measured using standardised weighing machine. After assessment BMI was calculated. Data was collected and analysis was done through SPSS software version 20 and results were calculated.

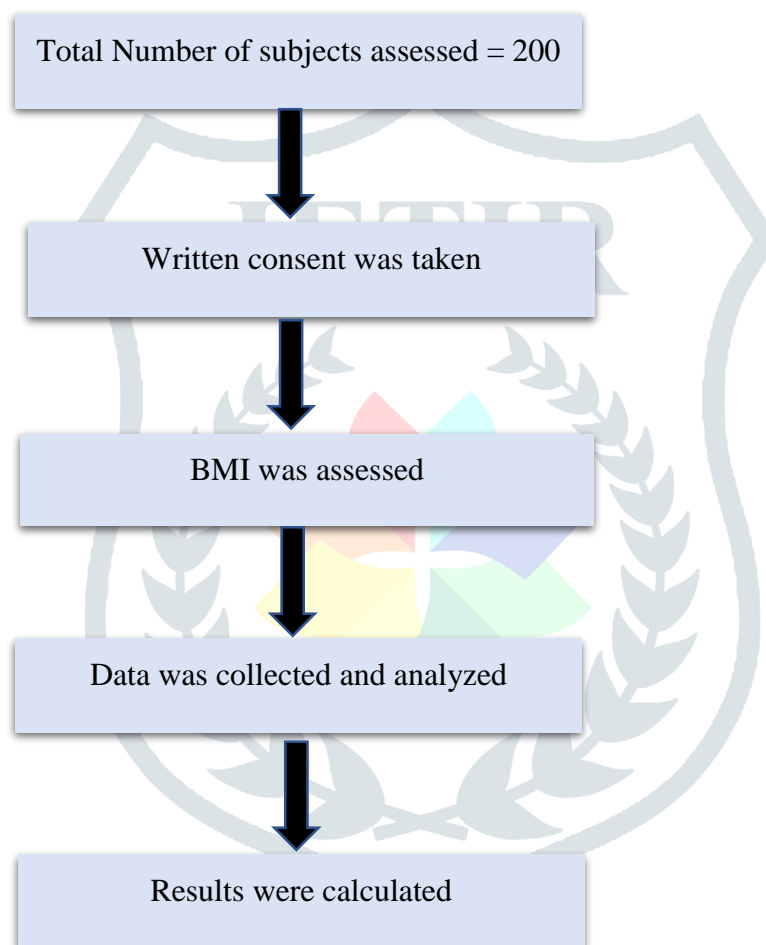


Figure 2. Procedure

Outcome Measure:

Body Mass Index: BMI is calculated by measuring weight in kg through weighing machine and height will be measured in meter through stadiometer.

Instructions for subject:

Weight measurement: Subjects need to wear light clothing; subject should be barefooted. Subjects should stand straight on weighing machine.

Height measurement: Subjects were instructed to stand in anatomical position. Position of calf, back and back of head should be against the wall. Subjects should be barefooted.

Score: BMI of subject is calculated using following formula $\text{weight (kg) / Height*Height (m)}^2$

RESULT

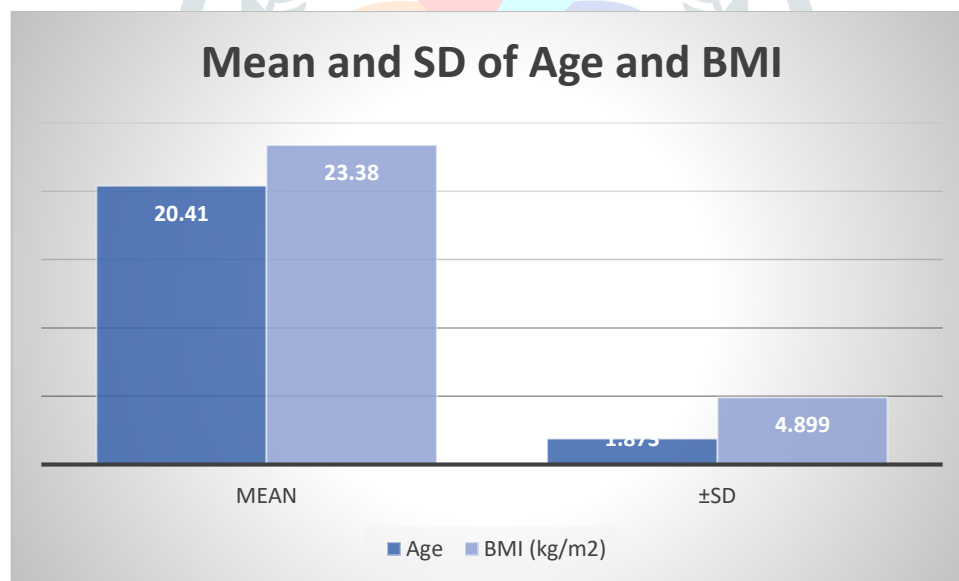
Study included 200 female subjects, under age criteria of 18-25 years. Results were calculated and analysed using Microsoft Excel version 2019 and SPSS version 20. According to WHO criteria for Body Mass Index, out of 200 female subjects 49% (n= 98) females were under normal category, 11.5% (n= 23) were underweight, 33% (n= 66) were overweight and 6.5% (13) were obese.

table 1. represents descriptive statistics of the female subjects (n= 200) age in years, height in meters, weight in kg and bmi kg/m^2 .

Sr No.	Parameters	Female
1	Age (year)	20.41± 1.873
2	Weight (kg)	58.28± 13.19
3	Height (m ²)	1.577±0.669
4	BMI (kg/ m ²)	23.38±4.899

table 2. represents mean and standard deviation of age and bmi

Sr No.	Mean	±SD
Age	20.41	1.873
BMI (kg/m ²)	23.38	4.899



Graph 1. describes about mean and standard deviation of age and BMI

table 3. represents descriptive statistics of bmi according to who classification i.e., underweight, normal, overweight and obese class i, ii and iii.

Sr. No.	BMI Category	Weight (kg)	Height (m ²)	BMI (kg/m ²)
1	Underweight (n=23)	41.87±4.238	1.573±0.685	16.90±1.029
2	Normal (n=98)	52.72±6.135	1.580±0.064	21.07±1.810

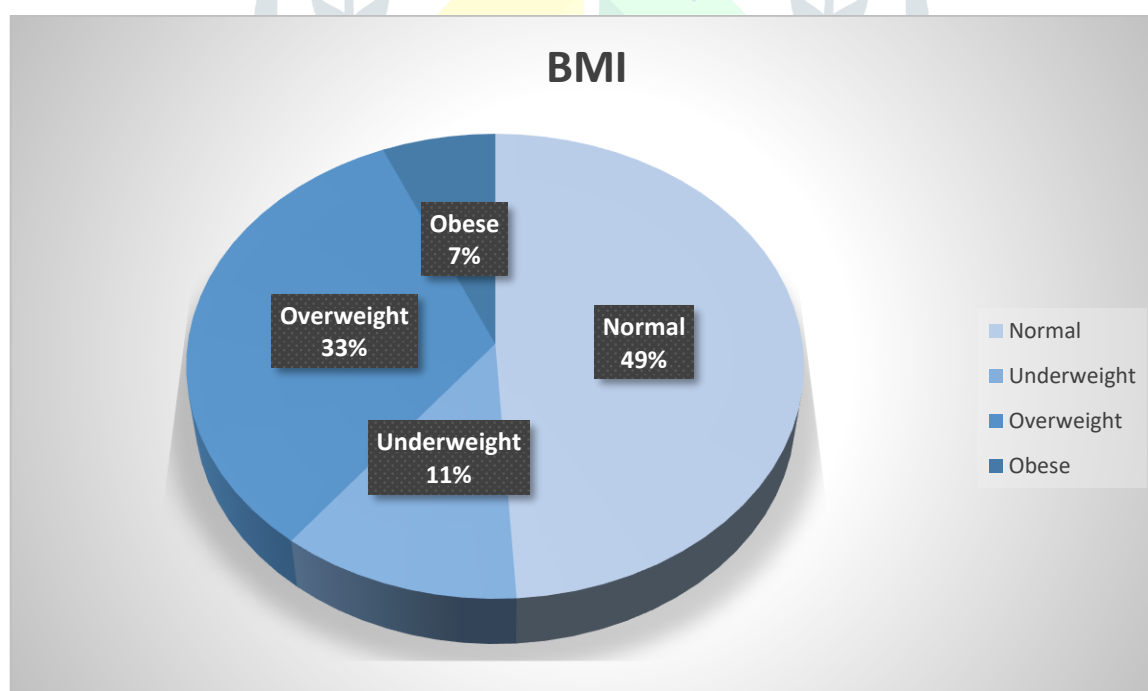
3	Overweight (n=66)	66.26±6.950	1.571±0.071	26.77±1.439
4	Obese (n=13)	88.72±12.97	1.588±0.063	35.14±4.586

Following table describes about mean \pm SD value of female subjects' weight, height and BMI that are categorised into underweight (n=23), normal (n=98), overweight (n=66) and obese (n=13).

table 4. shows distribution of females according to bmi and division of subjects according to who classification.

Sr No.	BMI	Number of Subjects
1	Normal	98
2	Underweight	23
3	Overweight	66
4	Obese (class I, II, III)	13
	Total	200

figure 2. shows distribution of females according to bmi



Graph 2. represents pie chart of subjects divided according to bmi and percentage of normal, underweight, overweight and obese subjects.

DISCUSSION

The present study was conducted for evaluating the prevalence of overweight among college going girls at Parul University. In this study BMI of the subjects were assessed by measuring their height through stadiometer and weight through standardised weighing machine. BMI was calculated and data analysis was done. On the basis of the result obtained from the study it can be stated that the prevalence of overweight among university girls is 32.5%.

In 2016 World Health organization had conducted a study to find the worldwide prevalence of overweight and obesity, results of the study suggested that about 1.9 billion adults falling under the age criteria of 18 years and above were under the category of overweight. In that study 40% women were overweight. ⁽³⁰⁾

In 2017 C. Obirikorang et al concluded that there was prevalence of overweight and obesity in female undergraduate students. In their study they found that females ate more when they were stressed. ⁽³¹⁾ There was increase in their snack consumption between the meals. ⁽³¹⁾

Studies which were conducted earlier on college going girls found that majority of the students skipped their breakfast in morning. ⁽³⁾ In order to live a healthy lifestyle breakfast is important also, it helps in maintenance of normal BMI. ⁽³⁾

One of the causes of being overweight is disproportionate intake of calories and its usage which leads to imbalance in energy expenditure. ⁽³⁾ Looking, towards the global scenario the students of university have shown increase in consumption of the food constituting more amount of fat and less amount of fiber, the intake of healthy fruits and vegetables is also reducing. ⁽³⁾ There is increase in consumptions of fast food, drinks like coca cola, soft drinks and tea which is considered to be one of the unhealthy practices of eating. ⁽³⁾ One of the reasons for this unhealthy eating practice is that adolescents do not have sufficient information about the sources of diet, the relationship between diet and disease, diet recommendations and the healthy choice of diet. ⁽³⁾

College students aged 18-24 are under the transitional phase of their life, where they have increase in weight gain and tend to live a sedentary lifestyle. ⁽³²⁾ The studies which have been conducted earlier show that there is an opposite relationship between overweight and physical activity. ⁽³³⁾ The role of physical activity is considered to be vital as it does not allow weight gain and helps in living a healthy lifestyle. ⁽³³⁾ Physical activity helps in maintaining storage, usage and distribution of the calories, due to which there is increase in day-to-day utilization of energy as well the requirement of the energy at rest also increases. ⁽³³⁾

Physical activity helps in oxidation of fat, reduces the level of leptin, elevates the sensitivity of the leptin receptors, helps in reduction of adipose mass and increases the level of the muscular mass. ⁽³³⁾

CONCLUSION

The present study was conducted to find the prevalence of overweight among college going girls of Parul university and it was concluded that there is 33% prevalence of overweight among university girls. In order to prevent increase in frequency of overweight there is sole requirement for intervention which helps in maintenance of healthy BMI.

LIMITATIONS

- Both genders were not included.
- Sample size was less.
- Subjects included in study were selected from same area.

FUTURE RECOMMENDATIONS

- In future study including both male and female can be done.
- Sample size can be increased.
- Subjects can be selected from different location.
- Study including intervention for Prevention of overweight can be done.

The logo for JETIR (Journal of Emerging Technologies and Innovative Research) is a large, light blue watermark in the background. It features the word "JETIR" in a bold, serif font, centered within a shield-like shape. Below the text is a stylized graphic of a globe with red, yellow, and blue segments, flanked by laurel wreaths on both sides.

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