

# Prevalence of Overweight and Obesity among Young Female Students in association with BMI

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## ABSTRACT

The study is designed to obtain the occurrence of obesity among 180 young female students of university, age 19-23 years in association with body mass index (BMI) according to WHO classification. A Questionnaire was prepared to collect information, including age, height, body weight, and socioeconomic status. Among 180 girls 18.33% (33) of girls were under weight, 58.88 % (106) were normal, 16.66 % (30) were overweight and 6.11% (11) of girls were obese. Overweight was more common among female students than obesity. The dietary practices and choices of young female girls have been evaluated by using food frequency questionnaire and found majority of students were used to skipped breakfast and frequent consumption of fast food including burgers, pizzas and coca cola due to lack of knowledge on healthy balance diet and adverse effect of obesity. Healthy living, eating healthy balanced diet and regular exercise help to maintain standard body weight and health.

### Keywords

Overweight, Obesity, BMI, Prevalence, food frequency questionnaire, female students

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## INTRODUCTION

Adolescence is a period for growth spurts and puberty changes between childhood and adulthood. During this period accumulation of excess fat among young girls are tend to persist into adulthood and has become a great threat in the development of constant diseases and conditions like Type 2 diabetes mellitus, hypertension, dyslipidemia, and cancer in later age. (1, 2). It is an independent risk factor for CVD and correlated with morbidity and mortality high risk associated with reduced life. (1, 3, 4). Obesity and overweight are defined as unnecessary or abnormal fat accumulation in the body due to high caloric intake or less physical activity (5).

Obesity is rapidly becoming a major medical and public health problem for last two decades in different parts of the world including Pakistan to be found 9th out of 188

countries (6-8). The Pakistan National Health Survey (NHS) documented that approximately 1% of the people is obese and 5% is overweight in the young age (15-24 years) in Pakistan. According to NHS (1990-94), the prevalence of obesity for men and women are 22% and 37% respectively in big cities. According to Pakistan Demographic Health Survey report 2013, Pakistani females live in urban areas are more susceptible to obesity than males (9). Genetic tendency, traditions, hormonal imbalances, metabolic and eating disorders, and physically inactive living are major factors to cause obesity. Several studies revealed that overweight and obesity among children and adolescent were significantly related with unhealthy modern lifestyle, improper knowledge of healthy balanced diet and physical inactivity

(10). Globally the idea of nutritionally healthy balanced diet among the general population has been completely changed with addition of higher amount of saturated bad fats, trans-fatty acids and added sugar. In Pakistan Food consumption trends and Healthy dietary patterns has been replaced by high intake of fast food, processed foods, junk food and sugary fizzy drinks in Pakistan (11).

## MATERIALS AND METHODS

A descriptive cross-sectional study of 180 female students aged 19 to 23 years was carried out during the year of (2015 – 2016) in the Jinnah University for Women, Nazimabad, Karachi. A total number of 180 girls were randomly selected from university campus to obtain relevant information on anthropometric, socioeconomic, dietary condition of the adolescent girls. A questionnaire was developed to obtain general information, sign and symptoms regarding anemia, dietary habits, and data for BMI. Height and weight were measured using standardized protocols (11). Weight measurements were made without shoes to the nearest 0.1 kg using a single portable weighing scale. Height was measured without shoes and recorded to the nearest 0.1 cm with a height rod fixed on a wall. A questionnaire was developed to obtain general information, sign and symptoms regarding

anemia, dietary habits, and data for BMI. The general information including parent's education, occupation, income, family structure and socio economic status of participants. Data was analyzed by using t-test and presented as Mean  $\pm$  SD.

## RESULTS

In the present study, 180 female students of age 18-24 years of Jinnah University for Women, Karachi, Pakistan during semester 2016 were randomly selected. Weight in kilogram and height in meter of all participants were measured by using digital weighing machine and measuring tape respectively (Table 1; Fig 1). According to WHO classification for BMI among 180 girls 17.77% (33) of girls were under weight, 19.53% (106) were normal, 29.59% (30) were overweight and 30.46% (11) of girls were obese (Table 2; Fig 2). Eating habits of the students were analyzed by using a food frequency questionnaire. Majority of female students were used to skip breakfast. High intake of burgers, French fries, junk food, soft drinks etc were observed during university hours. Fewer intakes of fiber rich food, fruits vegetables, seeds, legumes and Water consumption was also restricted to 4-5 glasses per day.

**Table I:** Mean  $\pm$  SD Values of Weight, Height and BMI of Female Students

Categorize of BMI	Weight (kg)/Mean $\pm$ SD	Height (m)/Mean $\pm$ SD	BMI(Kg/m <sup>2</sup> )
Under weight	40 $\pm$ 12.4	1.5 $\pm$ 10.4	17.77 $\pm$ 3.5
Normal weight	50 $\pm$ 11.5	1.6 $\pm$ 11.7	19.53 $\pm$ 2.8
Over weight	58 $\pm$ 10.2	1.4 $\pm$ 12.5	29.59 $\pm$ 4.1
Obese	76 $\pm$ 11.6	1.6 $\pm$ 10.8	30.46 $\pm$ 3.2

**Table II:** Prevalence of Over Weight and Obesity in Young Girls according to WHO BMI Classification

Classes of BMI (Kg/m <sup>2</sup> )	No of Female Students	BMI (Kg/m <sup>2</sup> )	Percentage (%)
Under weight	33	17.77 $\pm$ 3.5	18.33 $\pm$ 3.5
Normal weight	106	19.53 $\pm$ 2.8	58.88 $\pm$ 2.8
Over weight	30	29.59 $\pm$ 4.1	16.66 $\pm$ 4.1
Obese	11	30.46 $\pm$ 3.2	6.11 $\pm$ 3.2

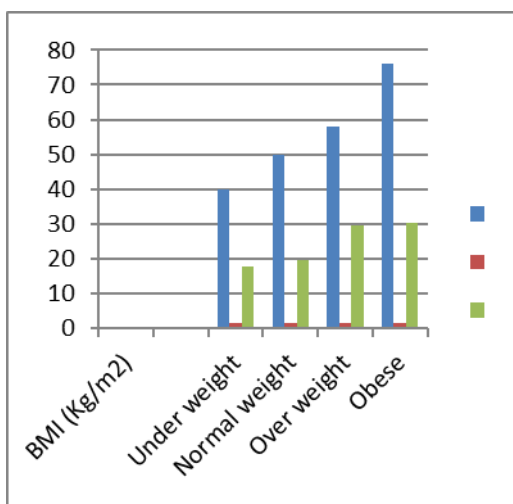


Fig 1: Categorize Female Young Girls according to WHO BMI Classification

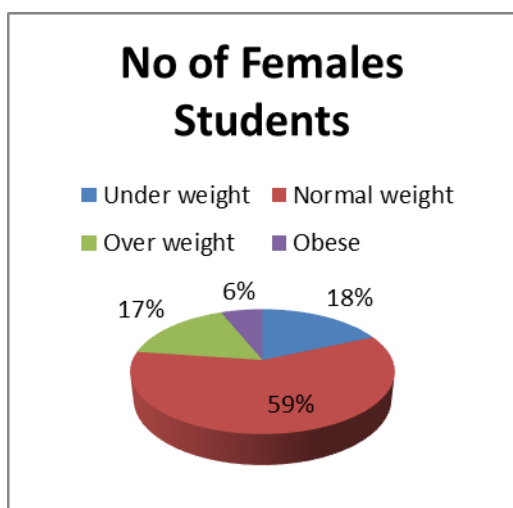


Fig 2: Percentage Prevalence of Obesity among female University

## DISCUSSION

The aim of this study was to assess eating habits, behaviors and the occurrence of overweight and obesity in young university girls. According to WHO classification for BMI results showed that majority of university females (58.88%), age 18-24 yr were belong to normal weight (BMI 19.53). 16.66 % (BMI 29.59) were overweight and 6.11% (30.46) of girls were obese. Several studies showed majority of students don't take breakfast regularly due to shortage of time in the morning. Breakfast is considered as a very important meal to start a better day (13, 14). Consuming a regular breakfast can be helpful in maintaining a normal body mass index (BMI). (8,5). University students generally do not follow healthy eating behaviors. Adolescents are more likely to eat fast food

frequently. High intake of fast food, soft drinks, coca cola, tea in adolescent diet was generally observed. All these unhealthy eating habits are more likely to attain overweight and obesity among young girls. Usually university student diet is high in saturated fat and low in fibers, fruits and vegetables (15, 16, 17, 18). Students commonly choose fast food due to its flavor, aroma and tastiness. Globally healthy balance diet and dietary patterns have been replaced by unhealthy irregular eating behaviors in youth. Adolescents are more probably like to eat fast food frequently. High intake of fast food, soft drinks, coca cola, tea in adolescent diet showed strong correlation with BMI (13, 19, 20). Adolescents have inadequate knowledge and information about dietary sources, recommendations, diet-disease relationships, and dietary habits or choices (21).

## CONCLUSION

Adolescence obesity is a common serious health problem among young girls. Health awareness programs to get better health and nutritional condition of the university female girls should be implemented to focus on the improvement of eating habits as well as quality and quantity of the diet. Moreover, Students awareness programs should be held on regular basis to aware the concept of balanced diet and health risk of obesity among young girls.

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