Original Article

To Study the Frequency of Obesity Among Female Students of Nishtar Medical College, Multan

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ABSTRACT

Objectives: 1. To find out obesity frequency among female students of Nishtar Medical College by measuring their Body Mass Index. 2-To create awareness about hazards of obesity among them.

Study Design: Observational / Cross sectional study.

Place and duration of study: This Study was carried out at Nishtar Medical College, Multan from October 2015 to December, 2015.

Materials and Methods: A sample of 250 female students was taken by convenient sampling technique,50 students from each class were included in the study. After taking informed consent, all the desired in formations were collected by developing a structured questionnaire. Excel and SPSS software were used to analyze data.

Results: Out of the total 250 students, 80(32%) were obese and 170(68%) were non-obese. Among the obese students, 24(30%) were from final year and 13(16.25%) were from first year MBBS class. There was very high percentage of obese students 59(73.75%) belonging to middle socioeconomic class. Most of the students 42 (52.5%) were consuming 2100-2500 calories/day. Among the obese students only 10(12.5%) were doing exercise daily. 22 (27.5%)students had positive family history of obesity. About 13(16.25%) students were consuming fast food once daily and 46(57.5%)were taking 2-3 times per week.

Conclusion: Obesity is a significant problem among female medical students. The main risk factors identified were middle economic status, lack of exercise , overall sedentary life style, with high calories and fast food consumption.

Key Words: Obesity, BMI, Female Medical Students

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INTRODUCTION

Obesity is the most common type of malnutrition in both developed and developing countries and effecting all age groups among both male and females. It is now so common that it has replaced under nutrition.[1]

Obesity is the second most common cause of death in the United States where 300000 deaths occur annually due to overweight and obesity which can be prevented. Mortality rates are high among obese than the normal persons. Obesity is a risk factor for many diseases particularly cardiovascular disease, non insulin dependent diabetes mellitus, sleep disturbances-[2], few types of benign and malignant conditions, e.g. Breast, colon endometrial, prostate and joints problems.[3]

Overweight and obesity epidemic is growing gradually worldwide and in the United States 34.9% of adults aged 20 years or older are obese.[4] In USA , abdominal obesity is more in females.[5] In Indonesia the obesity in females is found to be 15%.[6] Pakistan ranked 9th out of 188 countries in terms of obesity. The overall prevalence of overweight and obesity is 18.5% and 27.85% respectively in general population of Pakistan.[7]

In Arabian countries, traditional / cultural restrictions in lifestyle choices available to women are the main source for increased rates of obesity. Because of these limitations, females have limited access to supporting / exercise activities. In Sri Lanka, the prevalence of obesity in females is 8.5%.[8]

Overweight and obesity prevalence is also increasing among medical students and doctors than general population. It is very critical situation as they are the role models for the general public to follow for healthy weight and diet.

According to a study conducted in doctors in Pakistan, prevalence of obesity is 28.2%. [9]

Among many factors which influence body weight gain, sustained energy imbalance due to more intake than its expenditure is very strong determinant of overweight and obesity.

Studies have shown that age is strongly associated with obesity. The highest prevalence of obesity is seen in 50 – 59 years age group for both genders.[10]Greatest increase in weight is seen in less educated women .This is true for most of the developing countries. The etiology of obesity is multifactorial. Economic growth,

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urbanization and subsequent changes in lifestyle are among the factors driving the global obesity epidemic .[11]

The environmental facilitators for mass obesity include greater availability of food (freezers and fast food culture) , changing dietary composition (more fat, more refined sugars , more alcohol) , changing eating styles (more snacks than regular food , excessive soft drinks , chocolates) which encourage overeating in relation to physiological needs. More than 600 genes, markers and chromosomal regions have been associated with human obesity.[12] Overconsumption is considered a crucial factor in the development of obesity[13]. An important factor which leads to obesity is 'fast food' consumption on daily basis.[14] A typical fast food meal can contain 2000 kcal and 84 g of fat. Nibbling between meals contribute to the obesity in some females who are found of cooking and of others who work in kitchens. Studies also show that females who take fruits frequently in their diet have low BMI as compare to females who take fruits less frequently.[15,16] Malnutrition in early life is believed to play an important role in the rising rates of obesity in the developing countries.

Studies have also shown that more use of vehicles even for short distances is responsible for the increase prevalence of overweight and obesity.[17] This is perhaps the main cause of increased weight in medical students because they have to do more work in short period of time. No study has yet been conducted in female medical students in Multan. The results of the study will help to develop strategies for prevention of obesity in them so that they can be able to prevent obesity and its adverse effects in general population

MATERIALS AND METHODS

It was an Observational Cross-Sectional study carried out at Nishtar Medical College, Multan during the period October 2015-December 2015.The Objectives of the study were to find out the obesity frequency among female medical students and to create awareness among them about hazards of obesity. A sample of 250 female students was taken by convenient sampling technique,50 students from each class were included in the study. After taking informed consent, all the desired in formations were collected by developing a structured questionnaire. EXCEL and SPSS software were used to analyze data.

Inclusion criteria was female medical students of Nishtar Medical College. Exclusion criteria was students of any other college and male students of Nishtar Medical college. All selected students were questioned regarding dietary pattern and lifestyle behaviors .Obesity was estimated by measuring height and weight and by calculating BMI in kg/m^2. Percentage was calculated for obesity and correlation analysis was done between various variables with statistical significance taken at P <0.5..

RESULTS

According to BMI criteria, 170(68%) students had normal weight while 80(32%) students were obese in varying degree of obesity. (table -1)

Among the obese students,13(16.25%) belonged to first year class and 24(30%) were of final year MBBS class.(table-2) There was very high percentage of obese students59(73.75%) belonging to middle socio economic class than upper class16(20%) and lower class 05 (6.25%).(table-3)

Among the 80 obese students, 06(7.5%) students were taking 2600& above calories/day and majority 42 (52.5%) were consuming 2100-2500 calories, while 24(30%) were taking 1600-2000 calories and 08(10%) were consuming 1000-1500 calories/day(table-4)

Among the obese students , only 10(12.5%) were doing exercise daily, 15(18.75%) were performing exercise2-3times/ week, 22(27.5%) were doing seldom, and 33(41.25%) were not doing any exercise.(table-5)

22 (27.5%)students had positive family history ,while 58(72.5%) had negative family history of obesity.(table-6)

About 13(16.25%) students were consuming fast food once daily and 46(57.5%)were taking 2-3 times per week. 16(20%) were in seldom category and only 05(6.25%) answered never. (Table-7) About 69(86.25%)were using vehicle daily and 11(13.75%) were not in habit of using vehicle. (table -8).

Table No.1: Frequency distribution of obesity on the basis of BMI

Obesity	Number	%age
Non-obese	170	68
Pre-obese	45	18
Obese-I	30	12
Obese-II	5	2
Obese-III	0	0

80(32%) students were obese in varying degree of obesity.

Table No.2: Relationship of obesity on the basis of study of year.

Year of study	Number	%age
1st Year	13	16.25
2nd Year	11	13.75
3rd Year	14	17.5
4th Year	18	22.5
Final Year	24	30

Among the obese students,24(30%) belonged to final year and 13(16.25%) were of first year MBBS class.

Table No.3: Relationship of obesity with socio-economic status.

Socio-economic status	Number	%age
Upper class	16	20
Middle class	59	73.75
Lower class	05	6.25

Very high percentage of obese students 59(73.75%) belonged to middle SE class

Table No.4: Frequency distribution of calories intake.

Calories	Number	%age
1000-1500	08	10
1600-2000	24	30
2100-2500	42	52.5
2600 & above	06	7.5

Most of the students 42(52.5%) were consuming 2100-2500 calories/day

Table No.5: Relationship between obesity & exercise.

Exercise	Obese	
	Number	% age
Daily	10	12.5
2-3times/week	15	18.75
Seldom	22	27.75
Never	33	41.25

Among the obese students , only 10(12.5%) were doing exercise daily

Table No.6: Relationship of obesity with family history.

Family history	Number	%age
Yes	22	27.5
No	58	72.5

22(27.5%) students had positive family history of obesity.

Table No.7: Relationship of obesity with fast food consumption.

Fast food consumption	Number	%age
Daily	13	16.25
2-3 times/week	46	57.5
Seldom	16	20
Never	05	6.25

46(57.5%) students were taking fast food 2-3times/week

Table No.8: Relationship of obesity with vehicle use.

Vehicle use	Number	%age
Daily	69	86.25
Seldom	11	13.75

About 69(86.25%) students were using vehicle daily

DISCUSSION

Obesity is both an individual clinical condition and is increasingly viewed as a serious public health problem. The mechanism by which obesity develops is unknown. The occurrence of obesity is the combined results of interaction between individual biology and environment Various studies in Pakistan predict prevalence of obesity 37%,but obesity is underestimated in pakistan.[18]

In this study out of 250 students,80(32%) were obese and out of the 80 obese students, mostly 24(30%) belonged to final year class. Various studies also revealed incidence of obesity increases with age. In Pakistan in relation to age prevalence is 37% in 25-44 years of age and 40% in 45 -64 Years[19].

Prevalence of obesity was maximum in middle socio-economic class irrespective of residential area, 59(73.75%) students were obese in varying degree in contrast to other studies which give evidence of high BMI in low socioeconomic class, in underdeveloped countries. Lack of education, preference to purchase cheap fast food ,marry to low income status, all evidences are in favor of obesity in low income group.[20]

Regarding calories , most of the students 42(52.5%) were taking between 2100-2500 calories/day. It is well approved in all national and international studies that obesity is strongly associated with consumption of high calories food.[21] Exercise status showed only 10(12.5%) students were doing exercise daily and 33(41.25%) students never do exercise. Many studies show an association of physical activity and obesity.[22] , According to a global survey currently most important leading cause of obesity is sedentary life style alone or in combination with other factors.[23] Pakistanis do not meet the guide line for physical activity index in comparison to other countries.[24]

58(72.5%) students had negative family history while 22(27.5%) had positive family history of obesity. Internationally studies claimed that the risk of obesity is 6 to 8 times higher with positive family history but an article written by Boucherd 2007, argues not always we see the above mentioned rule of family history until other co factors are also present.[25]

Maximum percentage of students 46(57.5%) were consuming fast food 2-3 times per week. Some studies showed that obesity is directly proportional to sweets and fast food consumption, [14] but many interventional and cross sectional studies do not show strong correlation of obesity with sweets and fast food consumption. They found obesity only in susceptible peoples.[26]

Studies have also shown that increased use of vehicles even for short distances is responsible for the increase in prevalence of overweight and obesity.[14] In this study 69(86.25%) students were using vehicle daily.

Different researches are in favor of that not a single cause is responsible for obesity. Many factors along with susceptible personality lead to epidemic of obesity globally.

CONCLUSION

The results of this study suggest that obesity was frequent among female medical students. The main risk factors of obesity identified in this study were middle socio economic status, lack of exercise , overall sedentary life style, with high calories and fast food consumption. The high and rising trends of obesity among female medical students demand attention and urgent health promotion and prevention strategies to

address this problem. Physical educational activity should be encouraged and made a part of medical curriculum.

Recommendation:

- Encouraging balanced diet throughout the life cycle.
- Promoting healthy eating behaviors in life. Use of fruits and vegetables at least five serving per week, eating breakfast daily, encouraging family meal and limiting portion size.
- Limiting television and other screen time.
- Promoting moderate to vigorous physical activity for at least 60 minutes per day.
- Limiting consumption of sugar sweetened beverages and fast food.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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