Original Article

Healthy Overweight Females

Frequency of Healthy Overweight Adult Females in a Cluster

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ABSTRACT

Objective: To find out the frequency of healthy overweight / obese females as determined by body mass index in a cluster.

Study Design: Descriptive / cross sectional study

Place and Duration of Study: This study was conducted at the Out-Patient Department of CMH Landi Kotal hospital from 1st Jan 2016 to 30th June 2016.

Materials and Methods: A non-probability convenience sampling of 500 Females between 18-24 years of age was taken. They were subject to anthropometric and body mass index measurements. Blood pressure and resting heart rate were taken. Further data was collected by a questionnaire, based on socio-demography, physical activity, self-perception of body weight and health status. Informed consent was taken prior conducting the study.

Results: Among 500 females, mean age was 19 ± 1 year, and age range was 18 to 24 years. 436 cases belonged to rural areas and 64 cases belonged to urban areas. 104 individuals (20.8%), belonged to group 1; 320 (64%) individuals belonged to group 2; 60 (12%) individuals belonged to group 3; 16 (3.2%) individuals belonged to group 4. Blood pressure and pulse rate were recorded under standard conditions in all groups (Table 1). None of the individuals had irregular pulse. All females responded to the pre-tested questionnaire. According to the collected data, 89% knew that overweight was related to diseases. About losing weight; 18% individuals replied as dieting, 22% individuals replied as exercise, 54% individuals replied both dieting and exercise and 6% individuals did not know the way to lose weight.

Conclusion: Frequency of overweight / obesity was 15% among healthy adult females. Health awareness campaigns to deliver the message for healthy eating habits, regular exercise and maintaining ideal weight will be extremely helpful in controlling the obesity in the community.

Key Words: Obesity, cluster, adult females, body mass index, overweight

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INTRODUCTION

Obesity is one of the most common disorders observed in the medical practice. It is difficult to manage and assessed by excess of adipose tissue. Accurate quantification of body fat requires sophisticated techniques which are not usually available in the clinical practice[1]. Quantitative evaluation to detect excess body fat is performed by calculating the body mass index (BMI) which is determined by dividing measured body weight in kilograms by the height in meter squares i.e. kg/(m^2)[2,3]. In the recent years, prevalence of overweight or obesity has been increased dramatically in developing countries [4]. Obesity is one of the major nutritional problems in Pakistan.

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Rate of obesity increases with the increase in age, for both men, women in all urban and rural settings. The National Health Survey of Pakistan (NHS) 1990-1994 showed that 1% Pakistani were reported to be obese and 5% overweight in the 15-24 years age group[5]. With an increasing rate of urbanization, changing lifestyles, higher energy density of diets, and reduced physical activity, social and environmental changes are contributing to the increase in obesity in all regions of Pakistan. Unfortunately, both general and abdominal adiposity are associated with the risk of death along with numerous social consequences in the life such as less likelihood of marriage, less social interactions, lack of confidence and disturbed emotions. World Health Organization has recommended different BMI cut-off points for South East Asia because they have more morbidity for any given BMI[6]. Indo-Asian specific definition of obesity is set as BMI > 25 kg/ (m2) and overweight as BMI ≥ 23 kg/ (m^2)[7]. In Pakistan, the rate of obesity is currently escalating to a stage from acute to chronic disease. Therefore this study was conducted to find out the frequency of overweight and obese population in otherwise healthy adult females by measuring their BMI (weight in kg/ height in meter square) in our study population.

MATERIALS AND METHODS

A cross sectional descriptive study was carried out in Out-Patient Department of CMH Landi Kotal hospital from 1st Jan 2016 to 30th June 2016. Five hundred females were enrolled in the study by non-probability convenience sampling between ages of 18-24 years. A questionnaire was given to each participant asking whether she knew that overweight is related to diseases and how weight could be controlled. In order to calculate Body Mass Index, the height and weight of each female was measured after completion of the questionnaire. For this purpose, standard weighing scales and measuring tapes were used. The formulae utilized during the data collection and processing was as following:

BMI = weight (kg) ÷height (m^2)

BMI based Criteria for overweight / obesity: BMI<18.5 kg/m^2 – underweight; BMI 18.5-24.9 kg/m^2 - normal weight; BMI 25- 29.9 kg/m^2 – overweight; BMI >30 kg/m^2 - obese[8]. On the basis of BMI, individuals were divided into four groups as following;

Group 1- BMI<18.5 kg/m^2

Group 2- BMI 18.5-24.9 kg/m^2

Group 3- BMI 25- 29.9 kg/m^2

Group 4- BMI ≥ 30 kg/m^2

Simultaneously their blood pressure (BP) and pulse rate were recorded after each individual had rested for 5 minutes with back support in sitting position, by the same calibrated sphygmomanometer. Statistical analysis of data was done by using statistical package for social sciences (SPSS) version 16.

RESULTS

Among 500 females mean age was 19 ± 1 year. Age range was 18 to 24 years. Among 500 candidates, 436 cases belonged to rural areas and 64 cases belonged to urban areas (Figure 1). According to Body Mass Index distribution, 104 (20.8%) individuals belonged to group 1; 320 (64%) individuals belonged to group 2; 60 (12%) individuals belonged to Group 3; 16 (3.2%) individuals belonged to Group 4 (Figure 2).

Table No.1: Blood pressure record in various groups categories based on body mass indeed (BMI) (n=500).

Sr. #	Blood Pressure mmHg	Group 1 (n=104)	Group 2 (n=320)	Group 3 and 4 (n=76)
1	<120/80	104	305	59
2	<120/80<140/90	0	15	13
3	<140/90	0	0	4

None of the individuals had irregular pulse, in all four groups. Among 500 individuals to whom the questionnaire was administered, no refusal was encountered, 89% knew that overweight was related to different diseases. About losing weight; 18% individuals replied dieting, 22% individuals replied exercise, 54% individuals replied both exercise and dieting, and 6% individuals did not know how to lose weight.

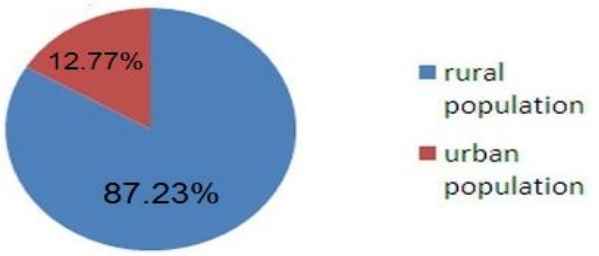

Figure No.1: Rural and urban distribution of participants. (n=500)

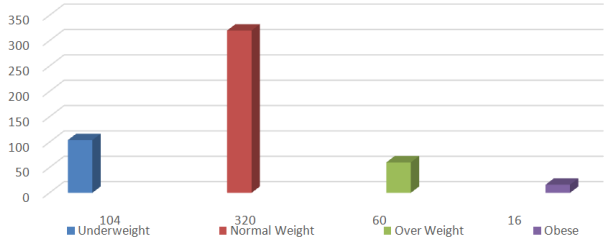

Figure No.2: Body Mass Index distribution of participants. (n=500)

DISCUSSION

Developing countries are increasingly vulnerable to the worldwide epidemic of obesity, which affects all segments of the population[9]. In return obesity / overweight, is a significant risk factor for arteriosclerosis, ischemic heart disease and diabetes; all of which are major causes of morbidity and mortality[10,11]. Present study has shown that 12% participants were overweight and 3.2% were obese which is in accordance with NHS 1990-94 and Al-Tawarah YM et al who has shown that nearly 12% participants were overweight or obese in Jordan[12]. Whereas Asif SA et al have reported the higher prevalence of obesity in females as 7% and overweight as 34%[13]. Similarly the Metroville study in Karachi (2006) reported that 34% of the lower socio-economic group were obese / overweight[14] and Jafar et al has noted that 1 out of 4 Pakistani over the age of 15 years is overweight or obese[17]. Nanan D compared the prevalence of overweight for adults aged 25 to 64 years in the United States (US) and Pakistan and concluded that BMI ≥25 was a good indicator of overweight in the US context but BMI ≥ 23 might be a better indicator for Pakistanis[15]. It must be kept in mind that using data from the same survey, prevalence of obesity can vary 2-7 folds depending on whether national reference data or the international approach is taken[16]. In this study we found that in group 3 and 4 (n=76 cumulatively), 16% individuals had increased BP including 7 individuals

with pre-hypertension and 2 with stage-1 hypertension as defined by seventh report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure, which is significantly higher than group-2 (n=347) in which 2.3% individuals had prehypertension[18]. This finding of rise in BP in group-3 and group-4 is attributable to overweight / obesity and in accordance with studies conducted earlier[10,14].Our study has shown no significant difference among adult age group between rural and urban population which is contrary to Hakeem R et al who have shown that urbanization contributed to obesity[19]. There is another important finding that presence of 11.2% overweight / obese individuals in this study in which majority of participants were from rural settings suggests that other factors, like lack of regular physical activity is a major contributing factor towards overweight / obesity[14,20]. In our study most of the participants (93%) knew that overweight was related to different diseases. When asked about what one can do to lose weight, majority of the respondents (83%) listed exercise and dieting among their answers and 77% mentioned dieting to lose weight thereby suggesting that participants had fair idea about effects of weight on health and healthy life style. However considering this scenario of overweight / obesity, it is recommended that health awareness programs directed towards controlling weight including dedicated and sustained life style modification should be properly developed, promoted and fully implemented. It is important to highlight that presence of overweight / obesity in younger population predominantly belonging to rural setting, even in the presence of high food prices is of great concern and it is alarming sign to have 11.2% frequency of overweight/obesity among healthy adult females. Limitation of the present study is that subject population was not evenly distributed and predominantly belonged to rural settings. Further research is recommended to find etiological factors, trends of obesity, its correlation with metabolic abnormalities and means to effectively control overweight in different age groups by conducting large scale studies, thereby promoting the healthy lifestyle.

CONCLUSION

Frequency of overweight / obesity was high among healthy adult females in our study group. Comprehensive health care awareness campaign involving healthy food intake, regular exercise and maintaining ideal weight is strongly recommended in younger population, thereby promoting the public health and reducing the risk of diseases associated with overweight and obesity.

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

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