ORIGINAL ARTICLE

Prevalence of Overweight and Obesity among the Visitors of Prince Sultan Military Medical City

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ABSTRACT

Aim: The aim of this study was to measure the commonness of obesity among the visitors of Prince Sultan military medical city (PSMMC), Hospital, Riyadh.

Materials and Methods: This cross-sectional study was done from November 15, 2018, to February 15, 2019. A well-established questionnaire was prepared based on the literature. A total of 1489 participants of either sex participated in this study. The body mass index (BMI) scale measures the obesity.

Reuslts: This study has revealed that obesity among the young visitor of the Prince Sultan military medical city, Riyadh, was higher than the middle age and old age people. It was also observed that obesity was more prevailing in young males than young females. There is a need to educate these young people about the foreseeable effects of obesity comprising insulin resistance, diabetes, metabolic syndrome, hyperlipidemia, hypertension, and ischemic stroke, gastroesophageal reflux, cholelithiasis, osteoarthritis, many types of cancer, infertility, impotence, and polycystic ovarian syndrome.

Conclusion: The obesity awareness programs should also be conducted to lower down the percentage of obese people of the Riyadh city.

Keywords: Body Mass Index, Obesity, Overweight, PSMMC Hospital. Riyadh.

INTRODUCTION

Obesity broadly refers to excessive body fat. The determinants of obesity may be environmental or genetic, for example, physical inactivity, gender, education level, job, marital status, diet, and associated diseases like diabetes, hypertension, and cardiac diseases [1]. It has become a vital public health problem, and also affects about one-third global population [1,2]. It is estimated that by 2030, about 20% of worldwide population will suffer from obesity, and about overweight percentage will be about 38%. In the Gulf region, the range of obesity is 5-14% in young males, and 3-18% in young females [3]. There is evidence that there is a rise in obesity rates [1,2]. Recent surveys in Saudi Arabia revealed that about 28% of males and 44% of females are suffering from obesity. It is also observed that about 71% of females and 66% of males are overweight [3,4]. One report states that the consumption of fast food and sedentary lifestyle in the certain region of Saudi Arabia caused a rise in the obese population, for example, 12% obese population in, 22% in Riyadh, and 34% in Hail [5]. The rate of obesity in females is more than males [6-8]; illiterate people are more obese than literate people [9,10], and the susceptibility of obesity is increased in married couple [11-13]. Obesity contributes to the generation of many diseases, for example, insulin resistance, diabetes, metabolic syndrome, hyperlipidemia, hypertension, and ischemic stroke, gastroesophageal reflux, cholelithiasis, osteoarthritis, many types of cancer, infertility, impotence, and polycystic ovarian syndrome [3, 14-18]. In the social front, obese females are less likely to be married and complete their education [3]. It is noteworthy that obesity decreases life expectancy, and it further decreases in association with smoking [1-3]. The aim of this study was to measure the commonness of obesity among the visitors of PSMMC hospital, Riyadh.

MATERIAL AND METHODS

The present cross-sectional study among the visitors of PSMMC hospital, Riyadh, was carried out from November 15, 2018, to February 15, 2019. A well-established questionnaire was prepared based on the literature. The information on the questionnaire included body weight in kilogram (Kg), and the body height in meters(m) as well as other general information [3]. The consent of the participants was obtained, and the questionnaire was given to the participants (N = 1489). Saudi and non-Saudi people participated in this study. The participants of > 18 years were included. The BMI measures the obesity. The BMI was obtained by dividing the total weight of the body in kilograms by the square of the height measured in meters [3]. The participants were divided as obese (OB, BMI ≥ 30 Kg/m^2), overweight (OW, BMI > 25 < 29.9 Kg/m^2), normal weight (NW, BMI > 18.5 < 25), and underweight (UW, BMI < 18.5). The obesity was further classified as Class-I obese (C-I OB, BMI > 30 < 34.9 kg/m2) and Class-II obese (C-II OB, BMI > 35). The data were analyzed using the SPSS software. Being a cross sectional study, no ethical approval was required.

RESULTS AND DISCUSSION

The collected data is presented in Tables 1-5.

Table 1: Overweight (OW) and obesity (OB) prevalence by age group (N = 1489)

Age groups	Non-OB (N = 971)	OW (N = 223)	C-I OB (N = 129)	C-II OB (N = 166)
15-29 years	945	203	115	135
30-39 years	23	17	10	17
40-49 years	2	3	4	9
50- 66 years	1	0	0	5
Total	971	223	129	166

The data of Table 1 provide the OW and OB commonness by age group (N = 1489). The table 3 data revealed that 65.21% of the participants were non-OB; 14.97% were OW; 8.66% were C-I OB, and 11.14% were C-II OB. The total prevalence of obesity among males was 19.81%. It was quite interesting to note that the majority of the obese people (16.78%) were of the 15-29 years. The prevalence of obesity among 50-66 years group was 0.33%; among 40-49 years group was 0.87%, and among 30-39 years group was also 1.81%. It can be concluded that the majority of the young participants (16.78%) were obese.
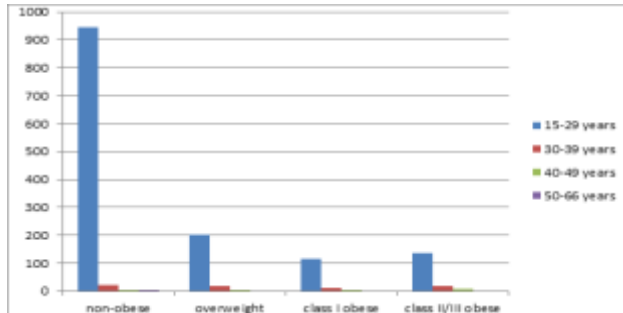

Figure 1: The OW and OB prevalence by age group (N = 1489)

Table 2: The Overweight (OW) and obesity (OB) prevalence in male participants (N = 394)

Age groups	Non-OB (N = 201)	OW (N = 76)	C-I OB (N = 38)	C-II OB (N = 79)
15-29 years	194	71	32	77
30-39 years	6	5	5	1
40-49 years	0	0	1	1
50- 66 years	1	0	0	0
Total	201	76	38	79

The data of table 2 provide OW and OB prevalence in male participants (N = 394). The table 1 data revealed that 51.01% of the participants were non-OB; 19.28% were OW; 9.64% were C-I OB, and 20.05% were C-II OB. The total prevalence of obesity among males was 29.69. It was quite interesting to note that the majority of the obese people (27.66%) were of the 15-29 years group. The prevalence of obesity among 50-66 years group was 0%; among 40-49 years group was 0.5%, and among 30-39 years group was also 1.52%. It can be concluded that the majority of young males (27.66%) were obese.
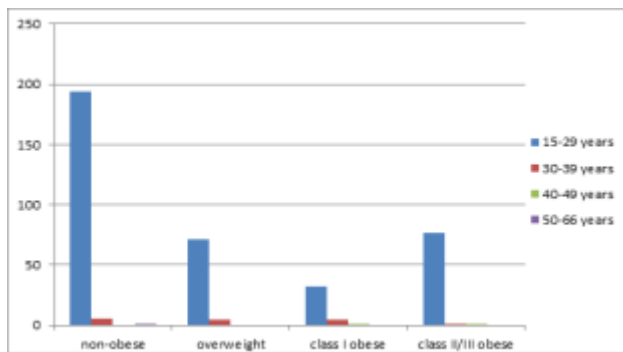

Figure 2: The OW and OB commonness in male participants (N = 394)

Table 3: Overweight (OW) and obesity (OB) prevalence in female participants (N = 1095)

Age groups	Non-OB (N = 770)	OW (N = 147)	C-I OB (N = 91)	C-II OB (N = 87)
15-29 years	751	132	83	58
30-39 years	17	12	5	16
40-49 years	2	3	3	8
50- 66 years	0	0	0	5
Total	770	147	91	87

The data of table 3 provide overweight and obesity prevalence in female participants (N = 1095). The table 3 data revealed that 70.31% of the participants were non-OB; 13.42% were OW; 8.31% were C-I OB, and 7.94% were C-II OB. The total prevalence of obesity among males was 16.25. It was quite interesting to note that the majority of the obese people (12.87%) were of the 15-29 years group. The prevalence of obesity among 50-66 years group was 0.45%; among 40-49 years group was 1.0%, and among 30-39 years group was also 1.91%. It can be concluded that the majority of young females (12.87%) were obese. However, obesity in young females was less than the obesity observed in young males.
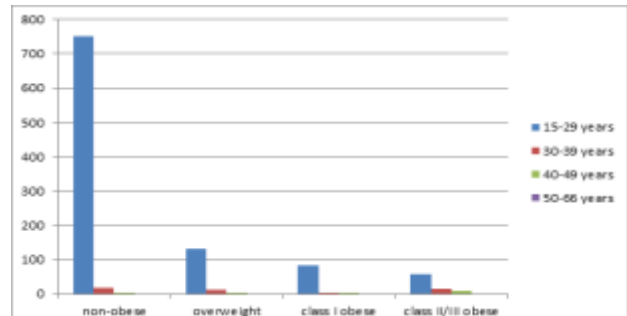

Figure 3: The OW and OB prevalence in female participants (N = 1095)

Table 4: Overweight (OW) and obesity (OB) prevalence in diabetics

Diabetic class	Non-OB (N =971)	OW (N = 223)	C-I OB (N = 129)	C-II OB (N = 166)
Diabetic	13	3	1	10
Non-diabetic	958	220	128	156
Total	971	223	129	166

The data of Table 4 provide the overweight and obesity prevalence in diabetics. Table 4 data revealed that 1.81% of the participants had diabetes, and most of them were obese. This observation was in accordance with the published reports, wherein it has been mentioned that there is a direct effect of obesity in the genesis of diabetes.
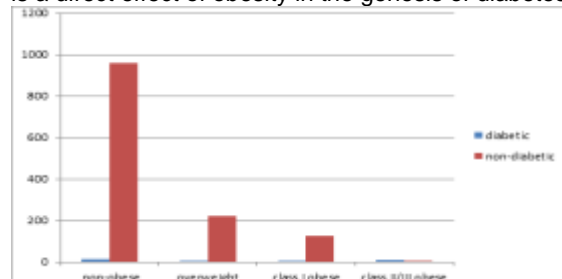

Figure 4: Overweight and obesity prevalence in diabetics

Table 5: Diabetes status among the participants (N = 1489)

Age groups	Diabetic (N = 27)	Non-diabetic (N = 1462)
15 to 29 years	19	1379
30 to 39 years	3	64
40 to 49 years	2	16
50 to 66 years	3	3
Total	27	1462

The data of table 5 provide diabetes status among the participants (N = 1095). The table 5 data revealed that among 1.81% of the diabetic participants, 1.27% were of the young age (15-29 years); 0.33% of the middle age (30-50 years); and 0.20% were of 50-66 years of age.
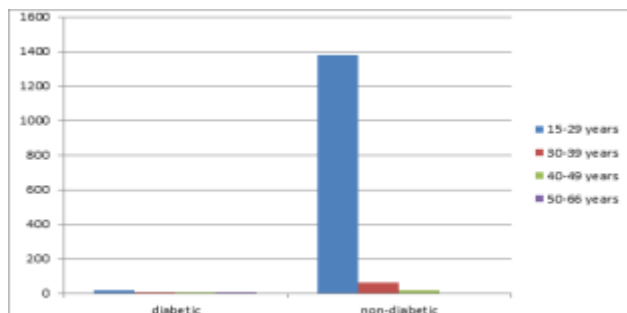

Figure 5: Diabetes status among the participants (N = 1489)

CONCLUSION

This study has revealed that obesity among the young visitor of the Prince Sultan military medical city, Riyadh, was higher than the middle age and old age people. It was also observed that obesity was more prevailing in young males than young females. There is a need to educate these young people about the foreseeable effects of obesity comprising insulin resistance, diabetes, metabolic syndrome, hyperlipidemia, hypertension, and ischemic stroke, gastroesophageal reflux, cholelithiasis, osteoarthritis, many types of cancer, infertility, impotence, and polycystic ovarian syndrome. The obesity awareness programs should also be conducted to lower down the percentage of obese people of the Riyadh city.

Limitations: This cross-sectional study was completed in a small number of people. Therefore, its results cannot be generalized. The study was not an age-specific or population specific. This study was silent about the family history, physical activity, diet, and associated illness of the participants, which also limits the generalization of the results of this study.

Conflict of Interest: The authors declare no conflict of interest.

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