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Original Research Article

Prevalence of obesity amongst bank employees in Latur city of Maharashtra, India

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ABSTRACT

Background: India is currently experiencing rapid epidemiological transition with rising prevalence of obesity which may be due to sedentary lifestyle and changing dietary pattern. Certain occupations like the job of bank employees are sedentary which predispose individuals to obesity. Hence the present study was carried out to study the prevalence of obesity in bank employees in Latur city of Maharashtra.
Methods: A cross-sectional study was carried out amongst 400 bank employees of Latur city. Banks were listed according to sectors i.e. government, co-operative and private. The study subjects were interviewed by predesigned and pretested proforma including bio-social characteristics like age, gender, height, weight etc. The anthropometric measurements were taken like height, weight etc. Data was entered in Microsoft Excel and analysed by using appropriate test whenever necessary.
Results: According to body mass index (BMI) classification by WHO classification 34.5% subjects were overweight and obese and 25.75% of bank employees had obesity by waist-hip ratio as per WHO classification and 18.5% of bank employees had isolated abdominal obesity.
Conclusions: The prevalence of generalized as well as abdominal obesity by WHO classification was more in bank employees. The associated risk factors like age, gender and designation was found to be significant.

Keywords: Obesity, Bank employees, Body mass index, Prevalence

INTRODUCTION

Obesity is now termed as "New World Syndrome" as it is a cluster of non-communicable diseases creating an enormous socio-economic and public health burden in poorer countries.[1] One of the commonest expressions of unhealthy diet, often combined with lack of physical activity, is obesity. Obesity is a most prevalent malnutrition all over the world. It is characterized by abnormal growth of adipose tissue. Indeed, we are amidst an epidemic of obesity.[2]

According to World Health Organization (WHO) in 2014, more than 1.9 billion adults aged 18 years and older were obese. Overall, about 13% of the world' adult population (11% of men and 15% of women) were obese. A 30% of adults aged 18 years and over (38% of men and 40% of women) were overweight. The worldwide prevalence of obesity more than doubled between 1980 and 2014.[3] According to National Family Health Survey-4 (NFHS-4) in India overweight and obesity are nearly two times higher in urban areas than in rural areas and more common in women. A 20.7% of women and 18.9% of men are overweight or obese.[4] Many factors have been implicated in the increasing burden of overweight and obesity including nutrition transaction following urbanization, adoption of western life styles and demographic transition and low consumption of fruits and vegetables and increased consumption of non-alcoholic sugar sweetened beverages. Likewise, biosocial

factors influencing overweight and obesity have identified to include age, gender, marital and socioeconomic status, urban residence, dietary intake and physical activity. Considering all these aspects the present study has been undertaken.[5]

Certain occupations predispose individuals to sedentary lifestyles and some of these are white-collar jobs characterized by sitting for long periods. Therefore, workers in such institutions become susceptible to developing obesity and or overweight which could predispose them to chronic diseases associated with physical inactivity.[6] The prevalence of these risk factors shows upward trend with increasing body mass index (BMI) and waist circumference (WC). Bank employees because of sedentary nature of their job and associated job stress form a high-risk group.[7] Hence the present study was to carried out to study the prevalence of obesity in bank employees in Latur city of Maharashtra, India.

METHODS

A cross-sectional community based descriptive study was conducted amongst 400 bank employees in Latur city of Maharashtra during the period of one year i.e. from 1st October 2017 to 30th September 2018.

Banks were listed according to sectors i.e. government, co-operative and private. Total 400 subjects were enrolled in the study according to sectors i.e. government (200), co-operative (100) and private (100) by stratified random sampling method and banks were selected by simple random sampling till we got the desired subjects according to stratified sampling. All the bank employees belonging to officer level, clerical grades and attendants who were in service were included in the study after explaining them purpose of the study.

Pregnant employees, employees absent on the days of the interview, persons who were on anti-depressant drugs or taking steroids and bank employee who were not willing to participate in the study were excluded from the study.

A pretested and predesigned semi structured proforma was constructed relevant to the study. Informed consent was taken from the subjects who were ready to take part in the study from each bank after explaining them the nature and purpose of study.

The weight was taken on a portable weighing machine with a calibrated scale of 0.5 kg marked from 0 to 130 kg and the machine was frequently checked against a standard weight. Height was measured with a calibrated measuring tape marked in centimetres. The measurement was taken in erect standing position, barefoot with foot together, heels against wall and looking straight.

BMI was calculated based on the above measurements using the formula- BMI=weight in kg/height in m^2. WHO BMI classification was used as following:

- Underweight: BMI <18.50 kg/m^2,
- Normal range: BMI 18.5-24.99 kg/m^2,
- Overweight: BMI 25.00-29.99 kg/m^2,
- Obesity: BMI 30.00 and above kg/m^2.

Waist circumference (WC) was measured at the midpoint between the lower margin of the least palpable rib and the top of the iliac crest in the mid axillary line, using a stretch-resistant tape. Hip circumference (HC) was measured around the widest portion of the buttocks, with the tape parallel to the floor. Waist circumference >102 cm in males and >88 cm in females were the cut off levels for subjects with abdominal obesity. Waist-Hip ratio (WHR) was also calculated and classified with criteria WHR >0.90 for males and >0.85 for females.[8]

Data was analysed by using SPSS version- 21.0 and results were expressed as percentages, proportions, mean and standard deviation whenever necessary.

RESULTS

As seen from Table 1 that there were 351 (87.75%) males and 49 (12.25%) females out of 400 study subjects in the study. The maximum percentage of the employees were in the age group of <30 years i.e. (39.5%) followed by 21.2% in 31-40 yrs, 19.5 in 41-50 yrs and 19.8% in 51-60 yrs age group respectively.

Table 1: Gender and age wise distribution of study population.

Variable	No. (%)
Gender	
Male	351 (87.75)
Female	49 (12.25)
Age (in years)	
<30	158 (39.5)
31-40	85 (21.2)
41-50	78 (19.5)
51-60	79 (19.8)

It was seen from Table 2 that according to BMI classification by WHO classification 34.5% subjects were overweight and obese i.e. prevalence of obesity in bank employees was 138 (34.5%) with variation of 67 (42.4%) in officer group, 38 (24.1%) in clerk group and 33 (39.3%) in attendant groups.

It was evident from Table 3 that 74 (18.50%) of bank employees had isolated abdominal obesity i.e. abnormal waist circumference with prevalence of 58 (16.50%) in males and 16 (32.7%) in females.

Table 2: Prevalence of obesity in bank employees according to body mass index.

Body mass index (BMI)	Officer	Clerk	Attendant	Total
	No. (%)	No. (%)	No. (%)	No. (%)
Underweight	07 (4.4)	16 (10.1)	02 (2.4)	25 (6.25)
Normal	84 (53.2)	104 (65.8)	49 (58.3)	237 (59.25)
Overweight and obese	67 (42.4)	38 (24.1)	33 (39.3)	138 (34.5)
Total	158 (100)	158 (100)	84 (100)	400 (100)

X^2=12.86, df=2, p=0.0016, highly significant.

Table 3: Distribution of study population according to waist circumference.

Waist circumference	Male		Female		Total (%)
	No.	%	No.	%	
Abnormal	58	16.5	16	32.7	74 (18.50)
Normal	293	83.5	33	67.3	326 (81.50)
Total	351	100	49	100.0	400 (100.00)

X^2=7.41, p=0.0006, highly significant.

Table 4: Distribution of study population according to waist / hip ratio.

Waist-hip ratio	Male		Female		Total (%)
	No.	%	No.	%	
Abnormal	58	16.5	45	91.8	103 (25.75)
Normal	293	83.5	4	8.2	297 (74.25)
Total	351	100	49	100.0	400 (100.0)

X^2=127.55, p=0.0001, highly significant.

As shown in Table 4 that overall 25.75% of bank employees had obesity by waist-hip ratio as per WHO classification with prevalence of 58 (16.50%) in males and 45 (91.0%) in females.

DISCUSSION

There were 400 participants included in the present study, 351 were males and 49 females from various banks in the city. The prevalence of obesity in these bank employees was found to be 138 (34.5%) i.e. BMI over 25 kg/m^2. 74 (18.50%) of bank employees had isolated abdominal obesity i.e. abnormal waist circumference with prevalence of 58 (16.50%) in males and 16 (32.7%) in females. 25.75% of bank employees had obesity by waist-hip ratio as per WHO classification with prevalence of 58(16.50%) in males and 45 (91.8%) in females.

A study by Aparna et al conducted in Vadodara city on bank employees stated that out of 595 subjects, 41% were obese and overweight (BMI >25).[1] Similar results were reflected in our study with prevalence of 34.5%. In the study done at Aurangabad by Hirani et al showed that out of total 240 bank employees, 47.9% and 29.6% bank employees were found to be overweight and obese respectively.[6] The prevalence of obesity by WHR also was high (65%) in this study compared to our study (25.75%). The prevalence of obesity by waist circumference alone was high in our study (18.5%) as compared to (6.5%) in Hirani et al study.[6]

Another study by Singh et al in Jammu and Kashmir on bank employees showed the prevalence of obesity by BMI over 25 as 49.5% in their study.[7] The prevalence of generalized and central obesity was found to be 9% and 69% respectively. The results were in line with our study. A study by Parasher et al showed the prevalence of obesity (BMI >30) in bank employees in Merut city as 19.5% which is nearly same in our study.[9]

Another study by Sable et al study on shopkeepers which are sedentary workers like bank employees showed that 43.3% participants were overweight, 22% were obese and 23.6% were having waist circumference >102 cm.[10] These results are higher than our present study. Desai et al conducted a study on effect of life style risk factors on prevalence of hypertension among white collar job people of Surat which revealed that 32% of the total employees were overweight.[11] This matches exactly with present study. A study by Yashneel et al concluded that prevalence of obesity among adult population in Srikot, Uttarakhand was 55.5% using BMI ≥25 kg/m^2 indicating a high burden of disease.[12]

CONCLUSION

According to BMI classification by WHO classification prevalence of obesity in bank employees was 34.5%. Overall 25.75% of bank employees had obesity by waist-hip ratio as per WHO classification. 18.5% of bank employees had isolated abdominal obesity i.e. abnormal

waist circumference. The prevalence of obesity (by BMI), abdominal obesity (by waist circumference) and obesity (by waist-hip ratio) by WHO classification was more in bank employees. The associated risk factors like age, gender and designation were found to be significant.

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