Original article:

Study of prevalence of overweight and obesity in shopkeepers in wetern Maharashtra

[1] DR. Sabale B.B.* , [2] DR Barhate A.A.

[1] Consultant, Medicine Department, Shri Sainath Hospital , shirdi , Maharashtra , India

2 PSM Department , Bharati Vidhypeeth , Pune , Maharashtra , India

*Corresponding author: Mail: drbbsabale11@gmail.com

Abstract:

Introduction: Obesity has reached epidemic proportions in India, in the 21st century and has become a major chronic disorder affecting a large population in the world. WHO identifies obesity and its complications among top 10 global risks leading to disease and disability which accounts for 40% of global deaths. To study prevalence of overweight and obesity among shopkeepers counterworkers in hotels, shops and sedentary life style people, this study was undertaken in western Maharashtra's township.

Methodology: From one end to other 365 people were selected and examined, Anthropometric measurements were taken. Body mass index was measured to assess overweight & obesity. Waist circumference and waist hip ratio were used to assess Central obesity.

Results: The study showed that 43.3% participants were overweight, 22% were obese and 23.6% were having waist circumference > 102 cm, Considering high prevalence measures to increase physical exercise, dietary modifications and screening for hypertension & Diabetes mellitus was advised.

Conclusion: From present study it can be concluded that obesity and overweight are quite prevalent among shopkeepers , counter workers and sedentary people.

Keywords: Obesity, WHO

Introduction:

World Health Organization identifies obesity and its complications among the top ten global risks affecting two days disease and disability which leads to 40% of global deaths (*1,3*).Obesity is a state of excess adipose tissue mass, obesity should not be defined by the body weight alone as muscular individuals may be overweight by arbitrary standards without having increased adiposity the most widely used method to classify weight status and risk of disease is the body mass index (BMI), which is equal to weight/height2 in kg/m2. Central obesity (waist to hip ratio) is independently associated with higher risk for, hypertension metabolic syndrome cardio-vascular disease, diabetes mellitus, hyperadrogenism in Women, hyperlipidaemia, gall-bladder disease, osteoarthritis and certain cancers (*2*). The prevalence in obesity has increased dramatically over the past three decades. Obesity has reached epidemic proportions in India in 21st Century, with morbid obesity affecting 5% of countries population. Obesity is due enlargement of fat cells (hypertrophic obesity)

or due to increase number of fat cells (hyper plastic obesity) (*2*).

By American diabetes association (ADA) have changed the epidemiology of obesity and DM (*4,5*). India is following the trend of other developing countries that are steadily becoming more overweight and obese, Indians are genetically more susceptible to weight accumulation especially around the waist, scientists have identified a SNP (Single Nucleotide Polymorphism) named rs 2970134 to be mostly associated with circumference 12 NFHS [National Family Health Survey] done in 2007 (Genetic basis for weight gain) shows that Maharashtra has 15.9% of males and 18.1% of Females who are overweight.

Shop owners, traders people working on counters, people working in offices were thought to be more predisposed to develop obesity because of their nature of work, sedentary lifestyle and eating habits, They form one of the largest groups having persons of different caste and creed, various age groups with variable stress and strain, with different habits like smoking and alcohol, etc. Once they develop obesity, they are more ,they are more prone to develop hypertension ,coronary artery disease etc. To know the incidence of overweight and obesity we undertook this present in a town in Western Maharashtra having many shops and hotels and offices.

Materials and Methods:

The present study was cross-sectional study unde-rtaken to study and see the prevalence of overweight and obesity among shopkeepers ,counterpersons and office workers with sedentary lifestyle. The study duration was from Jan 15th 2013 To 14thFeb 2013. The sample collected was by purposive sampling. The sample size was determined and confirmed with the help of statistician using online sample size calculator. The study participants were personally interviewed using predesigned and pretested questionnaire which was structured earlier. The written consent was obtained. The instruments used in this study were height stand(Accurate upto 1cm), measuring tape(Accurate upto 1cm),weighing machine(Accurate upto 0.5kg).All the instruments and techniques were initially standardized during pilot study and were regularly standardized throughout the period of data collection. The weighing machine was also checked and corrected, if required after every 10th reading during the study period.

Body mass index[BMI=weight in kg/(height in meter)^2] was used to access overweight and obesity. Waist circumference and waist –Hip ratio(WHR) were used to assess central obesity .According to WHO criteria, overweight was defined as BMI >= 25 and obesity was defined as BMI >=30 and central obesity was defined as WHR >1 ,and waist circumference >= 102cm.Central obesity reflects an incresead risk for cardiovascular diesese and metabolic complications*(2)*. The data was collected and tabulated in Microsoft excel . The statistical tests were done by using SPSS , Version 17 data analysis system . P value was obtained.

Observations:

Out of 380 people 365 people participated in the study.The minimum age of the study participates was 22 years and the maximum age was 58 years.All the participates were males.Most of the participatants (38%)were in the age group of 40-49 years.

The present study showed that 43.3% participants were either overweight or obese. The prevalence of central obesity according to WHR>1 was 21.1% and similarly the prevalence of central obesity according to waist circumference (waist circumference

www.ijbamr.com P ISSN: 2250-284X , E ISSN :2250-2858

>=102cm) was 23.6%. All these participates who were found to be overweight or obese were having a mixed diatary pattern. P value was found less than 0.005 that means the results were significant.

Discussion:

The present study revealed that the prevalence of overweight and obesity was 43.3% and 22.2% in the participants.The prevalence in this study is higher as compared to various previous studies *(6,7,8)* done an general population groups. These studies showed a prevalence ranging from 7% to 34%.According to the World Health Organisation (WHO) nearly 20 to 40% of adult population are affected by obesity(1m).

Central obesity , defined by WHR >1 and waist circumference >= 102cm was also seen in significant number of participants . A WHR >1 was observed in 21.1% participants. Waist circumference >=102cm was seen in 23.6% of the participants.Central obesity is an independent risk factor for coronary heart disease(CHD)*(2,9,10)*. This occurs both through altered secretion of adipose derived biologically active substances called adipokines including free fatty acid,adiponectin,interleukin-6, Tumour neirosis factor alpha (TNFalpha), plasminogen activator inhibitor-1 and through exacerbation of insulin resistance and associated cardiometabolic risk factor *(11)*.In a study*(12)* which was conducted in urban population aged 20-70 years. The prevalence of central obesity was found to be 28.3% which is comparable to this study.

Conclusion:

It can be concluded from the present study \ that obesity and overweight are quite prevalent among shopkeepers , counter workers and sedentary people. BMI is simple and effective way to screen obese and overweight persons. Both WHR and waist circumference are independent tools for measurement of central obesity. Timely, necessary measures need to be promoted to prevent their progression and complications associated with overweight and obesity. Measures to increase physical exercise , and to detect diabetes and hypertension among overweight participants screening was advised.

References:

1. World Health Organisation-Global Burden of Disease Project, April 25,2003. Downloded on 12 January 2014 , www.who.int/whosis/menu.cfm?path=evidence

2. Park K , Park's Textbook of Preventive and Social Medicine,20th Edition. Jabalpur:Banarsidas Bhanot, 2009:345-9.

3. Deitel M ,Overweight and obesity worldwide now estimated to involve 1.7-Billion people. Obes Surg 2003;13:329-30.

4. American Diabetes Association-Standards of Medical Care in Diabetes -2010.Diabetes Care 2010;33:S11-S61.

5. Mohan V, Sundeep S, Deepa R, Shah V and Varghese C-Epidemiology of Type 2 diabetes Indian scenario. Indian J Med Res 2007;125:217-30.

6. Khan A, Afridi AK, Safdar M-Prevalence of obesity in employees of universities, helth and research institutions of Peshawar. Pak J Nutr 2003;2:182-8

7. Tiwari R Shrivastava D,Gour N-A cross sectional study to determine prevalence of obesity in high income group of Gwalior city.Indian J Commun Med 2009;34:218-22.

8. Afridi AK,Khan A-Prevalence of etiology of obesity- an overview. Pak J Nutr 2004;3:14-25.

9. Oppert JM, Charles MA, Thibult N, Bernard G, Eschwege E, Ducimetiere P-Anthropometric estimates of muscle and fat mass in relation to cardiac mortality in men: the Paris prospective study. Am J Clin Nutr 2002;75:1107-13.

10. Gopalan C-Obesity in the Indian urban middle class. Bull Nutr Foundation India 1998;19:1-5.

11.Jean-Pierre D-Abdominal obesity: the most prevalent cause of the metabolic syndrome and related cardiometabolic risk. Turkiye Klinikleri J Med Sci 2009;29:826-32.

12.Hajian-Tilaki KO, Heidari B-Prevalence of obesity, central obesity and the associated factors in urban population aged 20-70 years, in the north of iran: a population based study and regression approach. Obes Rev 2007;8:3-10.

Date of submission: 02 December 2013 Date of Provisional acceptance: 08 January 2014

Date of Final acceptance: 12 February 2014 Date of Publication: 04 March 2014

Source of support: Nil; Conflict of Interest: Nil