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A Study of Prevalence and Factor Associated with Overweight and Obesity: A Single Center Prospective Study

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Abstract **Original Research Article**

Background: Obesity has affected around 135 million people of India. Overweight is a precursor of obesity. Prevalence of obesity and overweight varies due to age, gender geographical environment and socio-economic status of the subjects. Understanding the prevalence of subjects with overweight and obesity will give an idea of its intervention. ***Aims and Objectives:*** To study the prevalence of overweight and obesity and find out the parameters associated with the obesity. ***Material and Methods:*** Two hundred subject/patients were studied at Out Patients Department subjects/patients of Department of Medicine and Department of Pharmacology, L N Medical College and research Center Bhopal, Madhya Pradesh from March 2017 to February 2018 between. Subjects/patients age, sex, habits, socio-economic status, marital status and details on life style were recorded. ***Results:*** In present study, we found the prevalence of overweight to be 37.8% and that of obese was 17.8%. Overweight/obesity was more prevalent among female (55.55%). Factors associated with increased prevalence were inactive lifestyle (66.67%), alcohol consumption (58.33%), married life (42.5%) and old age. ***Conclusions:*** Prevalence of overweight and obesity in our center is high. Obesity was more common in female. Factors associated with increased prevalence were inactive lifestyle, alcohol consumption, married life and old age.

Keywords: Inactive life style, education, lifestyle modifications, food habits.

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INTRODUCTION

Obesity is considered as one of the lifestyle killer disease. Obesity was once considered the problem of developing countries. However, burden of obesity is raising in both developed and developing countries [1, 2].

Occurrence of obesity is mainly due to different aspects of local environment which play a significant role in the development obesity. Consumption of high calorie unhealthy food and inactive life style are the main culprits for increasing prevalence [3].

Though the problem is considered to be mainly associated with the urban area. The rural areas are also showing an increased prevalence due to rapid urbanization. This is leading to nutrition transition like homemade food to packed food. This is increasing the risk of burden of obesity [4].

There is a need of immediate attention to address this problem which is the greatest risk for the development of non-communicable diseases. In present study we tried to estimate the prevalence of overweight and obesity from our centre and compared the associated factors responsible for increasing the prevalence of obesity.

MATERIALS AND METHODS

Present prospective study was performed at Out Patients Department subjects/patients of Department of Medicine and Department of Pharmacology, L N Medical College and research Center Bhopal, Madhya Pradesh from March 2017 to February 2018 between.

A total 200 subjects/ patients were enrolled for the study. Subjects/patients age, sex, habits, socio-economic status, marital status and details on life style were recorded.

A data analysis was done using the SPSS ver. 20 software. Frequency distribution was used to prepare tables. Quantitative data is expressed as mean ± SD whereas categorical data is expressed as percentage. Chi

square test was performed to compare parameters between overweight/obese and normal peoples. P value of <0.05 is considered as significant.

RESULTS

This study we enrolled 55 % males and 45 % females. The mean age was 32.2 years (±6.9) and it ranged from 19 to 54 years (Table-1). The mean height of respondents was 165 cm (±0.13), mean weight was 70.10 (±15.20) kg and mean BMI was 26.90 (±3.70) kg/m2. Most of them (57.5%) were aged 25–34 years.60 % of them were married and 40 % were single. 80% of participants required them to sit (sedentary) for the most part of the working day. 60 % of the participants consume alcohol at least once per week. Only 17.5 % of participants were physically active (Table-1). The percentage of respondents who were physically inactive was higher in the overweight/obesity group (66.67 %) than in the underweight/normal group (33.3 %) (Table-1).

In present study, we found the prevalence of overweight to be 37.8% and that of obese was 17.8%

Table-1: Characteristics of respondents (n = 200)

Parameters		Participants	Normal	Overweight/ Obese	p value
Sex	Male	110 (55)	50 (45.46)	60 (54.54)	0.018
	Female	90 (45)	40 (44.45)	50 (55.55)	
Age	<25	20 (10)	15 (75)	5 (25)	0.023
	25-35	115 (57.5)	65 (56.53)	50 (43.47)	
	35-45	55 (27.5)	15 (27.27)	40 (72.73)	
	45-54	10 (5)	2 (20)	8 (80)	
Marital Status	Single	80 (40)	50 (62.5)	30 (37.5)	0.002
	Married	120 (60)	35 (17.5)	85 (42.5)	
Sedentary Work	No	40 (20)	15 (37.5)	25 (62.5)	0.241
	Yes	160 (80)	75 (48.88)	85 (53.12)	
Alcohol*	No	80 (40)	45 (56.25)	35 (43.75)	0.028
	Yes	120 (60)	50 (41.67)	70 (58.33)	
Physical activity	Inactive	90 (45)	30 (33.33)	60 (66.67)	<0.001
	Moderately inactive	40 (20)	16 (40)	24 (60)	
	Moderately Active	35 (17.5)	17 (48.57)	18 (51.43)	
	Active	35 (17.5)	20 (57.14)	15 (42.86)	

Data is expressed as no of patients (percentage), *Alcohol consumption = at least once/week

DISCUSSION

Overweight/obesity is a leading risk factor for global death and disability, and is associated with various non-communicable diseases including hypertension, diabetes, cancer, and cardiovascular disorders [5, 6].

In present study, we found the prevalence of overweight to be 37.8% and that of obese was 17.8%. In a similar series from Rajkot, Gujarat by Eshwar *et al.*, in a similar study including 1496 subjects found that the prevalence of obesity was 14% whereas prevalence of overweight subjects was 19.1% [7]. Another study from Srinagar, Uttarakhand by Rautela *et al.*, reported that prevalence of overweight was 14.8% and obesity was 55.5% which is higher than the prevalence reported by the present study [8]. Reports of national family health survey-4 (NFHS-4) revealed low prevalence of obesity in Jharkhand, Bihar, Madhya Pradesh and Chhattisgarh which are socioeconomically backward states whereas states like Punjab (Chandigarh), Goa, Delhi, Andhra Pradesh, Telangana, Puducherry and North east states had shown higher prevalence of obesity may be due to higher socioeconomic status [9].

The prevalence of obesity is increasing in India. Report of NFHS-4 of Andhra Pradesh showed an increase of 33% obesity prevalence as compared to only 10% in the year 1998. Which means obesity prevalence has had increased by more than 3 times [9].

Previous reports have shown that varying prevalence of obesity due to various factors including variation in geographical condition, life style and dietary pattern [10]. In present study we also studied the factors responsible for the being obese and overweight. In present study it was found that being physically inactive, consumption of alcohol, being married and a female, in addition to old age, increase the risk of obesity and overweight significantly. In a similar study by Deepa *et al.*, also reported that being inactive and consuming too much unprocessed food were the main parameters responsible for the overweight and obesity [11]. Cetateanu *et al.*, in agreement to present study findings reported that female gender and consumption of alcohol and inactive lifestyle are the main risk factors for the development of obesity in both urban and rural population [3].

Cross sectional nature and small sample size were the main limitations of the present study. There is a need of large randomized clinical trial which can provide strength to present study findings.

CONCLUSION

Prevalence of overweight and obesity in our centre is high. Female gender was mostly affected with obesity. Main factors responsible for the obesity in present study were inactive lifestyle, alcohol consumption, married life and old age.

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