Prevalence of overweight and obese among adults in Karad Taluka in Maharashtra

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KEYWORDS

Overweight, obese, prevalence

ABSTRACT

Introduction: Obesity was once predominantly observed in industrialized nations, it has now become a significant issue in many developing countries1. But, obesity results in an imbalance between energy intake and expenditure, causing excess body fat. It is increasingly prevalent worldwide, affecting all ages and genders, including in developing countries2.

Aim: The study aimed to identify the prevalence association between overweight and obese adults.

Methodology: In the present study, a quantitative approach was used with a cross-sectional observational study. 195 individuals were from Karad by using a simple random sampling technique.

Result: A total of 195 individuals were included in the study, in the result shows that; 7.17% were underweight, 29.74% had normal BMI, the majority 36.92% were overweight and 26.15% were obese. Most adults are seen as overweight and obese. The result depicts that obesity and overweight are public health issues related to excess body weight in the community.

Conclusion: The high prevalence of overweight and obesity suggests a need for targeted health interventions, including initiatives to promote healthier dietary habits and increased physical activity.

Introduction:

The global epidemic of overweight and obesity is rapidly beco;ming a major public health problem in many parts of the world. It leads to a substantial decrease in the quality of life and life expectancy and accounts for heavy expenditure in the provision of health care. Developing countries are experiencing a nutritional transition characterized by a reduction in the prevalence of nutritional deficiencies and an increase in overweight and obesity occurrences.[1] Obesity was once predominantly observed in industrialized nations, it has now become a significant issue in many developing countries[2]. But, obesity results in an imbalance between energy intake and expenditure, causing excess body fat. It is increasingly prevalent worldwide, affecting all ages and genders, including in developing countries.[1]

India is seeing a quicker rise in the prevalence of overweight and obesity than the global average. For example, among women, the prevalence of obesity climbed from 2.2% to 5.1% between 1998

and 2015, and the prevalence of overweight increased from 8.4% to 15.5% over that time.[3] Notable increases in the burden of non-communicable diseases (NCDs) have coincided with this rapid expansion. In almost all of India's states, the number of life years lost to disability (DALYs) due to communicable, maternal, neonatal, and nutritional illnesses exceeded those due to noncommunicable diseases (NCDs) in 1990; however, this is no longer the case.[4]

Obesity is when there is an excessive amount of body fat or adipose tissue in comparison to lean body mass. This happens when there is an imbalance between energy intake and energy expenditure, leading to a positive energy balance. It is characterized by the abnormal growth of adipose tissue and results in a body weight increase of 20% or more of the standard weight. Obesity can be measured using various methods including body mass index (BMI), waist-to-hip circumference ratios (WHR), waist circumference, or radiological techniques.[1]

In 1975, the prevalence of obesity was 3.2% for men and 6.4% for women; by 2014, those numbers had climbed to 10.8% and 14.9%, respectively. The rising incidence of obesity and overweight in emerging nations like India has been correlated with changes in the population and epidemiology, such as a decrease in fertility and mortality and an increase in diseases linked to a changing lifestyle.[3]
In the 2022 census, there were over 890 million adults over the age of 18 who were overweight or obese and 43% of adults over the age of 18 were overweight, 43% of men and 44% of women falling into this category. The WHO's Southeast Asia and African regions had a 31% prevalence of overweight, while the Americas had a 67% prevalence.[5]

Previous studies reported that; obesity prevalence in India is rising quickly—recent estimates put it as high as 15%. Overweight and obesity are frequently attributed to the sedentary and dietary effects of urbanization and modernization; however, little research has looked at the risk factors contributing to rising prevalence in rural areas, where 70% of Indians live and modernization has happened more slowly. Therefore, thorough investigations of overweight and obesity in rural areas are crucial, particularly because these areas are frequently hampered by low literacy and limited access to healthcare facilities.[6]

Need of the study:

In the present study, the researcher wants to identify the prevalence of overweight and obesity among adults. The researcher studied many previous literature but many of the authors work on only obese and overweight separately, in the present study researcher observed the prevalence of overweight and obese adults and also assessed BMI levels in the adults. in the present study, researcher combined the both categories. Location of study in the Karad taluka, there was nobody can do this kind of study. So, researchers were interested to do this type of study in this community area.

Objective of the study:

To find the prevalence association between overweight and obese adults.

Methodology:

The present study quantitative approach was used, cross-sectional observational design to investigate the prevalence of overweight and obesity among adults aged 20 to 60 years. The study was conducted in December 2023 and August 2024, in that enrolled 195 participants selection through simple random sampling to ensure a representative sample. Key parameters were included like; weight and height with calculated body mass index (BMI). The analysis was performed using the InStat software. The findings revealed significant insights into the prevalence rates of

overweight and obesity within the study population, highlighting the need for public health intervention to address these pressing issues. By providing a clear picture of the current status of weight-related health concerns in this demographic, the study underscores the importance of continued research and effective strategies to promote healthier lifestyles and reduce the risk of related health complications.

Result:

A total of 195 individuals were involved in the study. There was distribution in the tables based on study aim. In that, the distribution of individuals according to underweight, normal, overweight and obese calculation of BMI according to frequency and percentage.

Table No. 1: Distribution of Body Weight across age and gender.

Sr. no.	Variables	N=195(%)	Underweight F (%)	Normal F (%)	Overweight F (%)	Obese F (%)
1.	Age in years					
	<40	111(56.92)	41(36.94)	34(30.63)	40(36.04)	26(23.42)
	>40	84(43.08)	3(3.57)	24(28.57)	32(38.09)	25 (29.76)
2.	Gender					
	Male	72(36.92)	5(6.94)	21(29.17)	27(37.5)	19(26.38)
	Female	123(63.08)	9(7.32)	37(30.08)	45(36.58)	32(26.02)

The above table shows that; Individuals under 40 years of age show a majority (36.94%) compared to those over 40 years (3.57%). Conversely, the obese category was more prevalent among those over 40 years (29.76%) compared to the younger group (23.42%). Overweight prevalence was similar between the two age groups, and results found that; a majority of females (7.32%) were underweight compared to males (6.94%). In terms of normal weight, both genders were similarly represented, but females had a marginally higher proportion in the overweight (36.58%) and obese (26.02%) categories compared to males (37.5% and 26.38%, respectively).

Table No. 2: Distribution of Body Weight across education and occupation among adults.

Sr. no.	Demographic Data	N=195(%)	Underweight F (%)	Normal F (%)	Overweight F (%)	Obese F (%)
1.	Education					
	Professional honours degree/ Graduate or postgraduate/ Intermediate or post-high school diploma	71(36.41)	5(7.04)	19(16.76)	34(47.89)	13(18.31)
	High school certificate/ Middle school certificate/ Primary school certificate/ No formal education	124(63.59)	9(7.26)	39(31.45)	38(30.64)	38(30.64)
2.	Occupation					

	Professional/ Semi-professional/ Clerical, shop owner, farmer	124(63.59)	8(6.45)	37(29.83)	49(39.52)	30(24.19)
	Skilled worker/ Semi-skilled worker/ Unskilled worker/ Unemployed	71(36.41)	6(8.45)	21(29.57)	23(32.39)	21(29.58)

The above table depicts that; in education, the majority 124(63.59%) adults taken all types of education, including High school certificates/ Middle school certificates/ Primary school certificates/ No formal education and 71(36.41%) adults taken Professional honours degree/ Graduate or postgraduate/ Intermediate or post-high school diploma and majority 124(63.59%) of adults doing occupation, including Professional/ Semi-professional/ Clerical, shop owner, farmer were as 71(36.41%) adults were Skilled worker/ Semi-skilled worker/ Unskilled worker/ Unemployed.

Table No. 3: Distribution of Body Weight across diet and marital status among adults.

Sr. no.	Variables	N=195(%)	Underweight F (%)	Normal F (%)	Overweight F (%)	Obese F (%)
1.	Diet					
	Vegetarian	26(13.33)	4(15.38)	12(46.15)	2(7.69)	8(30.77)
	Non-vegetarian	169(86.67)	10(5.92)	46(27.21)	70(41.42)	43(25.44)
2.	Marital status					
	Unmarried/ Divorced/ Widow	42(21.53)	8(19.05)	13(30.95)	11(26.19)	10(23.81)
	Married	153(78.46)	6(3.92)	45(29.41)	61(39.87)	41(26.8)

The above table shows that; in diet majority 169(86.67%) of adults took a non-vegetarian diet as compared to a vegetarian diet 26(13.33%), whereas in marital status, the majority 153(78.46%) adults were married and 42(21.53%) were unmarried, divorced, or widowed.

Table no. 4 Distribution of Body Weight across consumption of alcohol, tobacco/misery.

Sr. no.	Variables	N=195(%)	Underweight F (%)	Normal F (%)	Overweight F (%)	Obese F (%)
1.	Consumption of alcohol					
	Yes	14(7.18)	1(7.14)	2(14.28)	3(21.43)	8(57.14)
	No	181(92.62)	13(7.18)	56(30.94)	69(38.12)	43(23.76)
2.	Consumption of tobacco/ misery					
	Yes	45(23.08)	2(4.44)	14(31.11)	18(40)	11(24.44)
	No	150(76.92)	12(8)	44(29.33)	54(36)	40(26.67)

The above table shows that; the majority 181(92.62%) of adults not taking alcohol; whereas, 14(7.18%) were consuming alcohol. The majority 150(76.92%) of adults not consuming tobacco/mishry; whereas, 45(23.08%) were consuming tobacco/mishry.

Discussion:

The present community-based cross-sectional study was conducted among 195 individuals to explore the prevalence of overweight and obesity in the Karad, taluka. The findings reveal that body weight distribution is significantly influenced by various demographic and lifestyle factors. Higher obesity rates are associated with older age, lower educational attainment, non-vegetarian diet, alcohol consumption, and tobacco use. Gender and occupation also play roles, with certain groups showing higher obesity rates and others having higher underweight rates.

In this study, Individuals under 40 years of age show a higher prevalence of underweight (36.94%) compared to those over 40 years (3.57%). Conversely, the obese category was more prevalent among those over 40 years (29.76%) compared to the younger group (23.42%). Younger individuals (<40 years) are more likely to be underweight, whereas older individuals (>40 years) have higher obesity rates. As compared karmarker[7] study result shows that, the prevalence of obesity was more among the age group of 30–40 years (26.4%) and 20–30 and 40–50 years (each group, 25.3%), and this difference in the prevalence of obesity concerning various age groups was found statistically significant ($\chi^2 = 22.457$; d.f. = 4; $P < 0.001$). In another study conducted by Sanjay[9], the overall prevalence of overweight was 58 (18%) in the study population out of which 44 (13.8%) were male and 14 (4.2%) were females.

In this study, the analysis indicates younger individuals (<40 years) have a higher prevalence of underweight (36.94%) and a lower prevalence of obesity (23.42%) compared to older individuals (>40 years), a lower prevalence of underweight (3.57%). In another study conducted by Sanjay[9] prevalence of obesity increases with age, 19% prevalence was seen in the 36-55 years age group. In gender, the result found that a slightly higher percentage of females (7.32%) were underweight compared to males (6.94%). In terms of normal weight, both genders were similarly represented, but females had a marginally higher proportion in the overweight (36.58%) and obese (26.02%) categories compared to males (37.5% and 26.38%, respectively). As compared to the study conducted by, Mahua[8] among males, the prevalence of overall obesity and central obesity increased from a lower age group (≤30 years) to an upper age group (≥50 years) but in the case of females, the prevalence increased from lower (≤30 years) to middle age group (31-49 years). The probability of getting obese with an increase in age (years) is very high among males, however, in the case of female participants, middle-aged individuals are more likely to get obese than older females. In another study conducted by Sanjay[9], respondents were male 205 (64.5%) Overall prevalence of obesity was 108 (34%) with a maximum number of males 76 (24%) and very less females 32 (10%).

Conclusion

In this study, selected sociodemographic variables like gender, education, occupation, and tobacco consumption show less impact on weight status in this adult. These findings suggest a need for targeted health interventions that address age-specific and dietary influences on obesity, particularly in diverse populations like Karad, and Taluka. Further research is essential to refine these strategies and better understand the complex factors contributing to overweight and obesity.

Ethical approval

The ethics committee of the Krishna Institute of Medical Sciences, Deemed To Be University, Karad on June 2023, approved this study (KIMSDU/IEC/07/2023). After that during data collection written informed consent was obtained from each participant.

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