Original Research

PREVALENCE OF OBESITY AND ITS ASSOCIATED RISK FACTORS AMONG ADULTS: A CROSS-SECTIONAL STUDY

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ABSTRACT

Background: Obesity has emerged as an international public health crisis because it leads to multiple chronic illnesses and decreases life quality. The growing obesity problem stems from three main factors which include people who do not exercise, those who eat poorly, and those who exhibit specific behavior patterns. **Objective:** The current research project sought to find out how common obesity was in the population while examining how various lifestyle factors which included physical exercise and food choices and alcohol drinking and tobacco use and family medical history affected obesity rates in adults. **Methods:** The research team conducted a cross-sectional study that involved 300 participants who belonged to the age group of 18 to 65 years. The researchers used a structured questionnaire to collect data which included information about the participants' demographic details and their lifestyle choices. The researchers used Body Mass Index (BMI) to categorize participants into two groups which included obese participants who had a BMI of 30 kg/m² or higher and non-obese participants who had a BMI below 30 kg/m². The researchers used SPSS version 26 for data analysis. The researchers used descriptive statistics to present study findings while Chi-square tests helped them determine how obesity risk factors interacted with each other. Researchers found that any result with a p-value below 0.05 indicated statistical significance. **Results:** The study found that 37.3% of the population suffered from obesity. Individuals who did not engage in physical activity showed a higher rate of obesity compared to other groups ($p < 0.001$). The study found that participants who often ate junk food and those who had a family history of obesity demonstrated a higher rate of obesity ($p < 0.005$). The researchers found that alcohol consumption and smoking both led to an increase in body mass index (BMI) among participants. The researchers used descriptive analysis to show that obese individuals maintained higher average body mass index (BMI) measurements than non-obese individuals across all lifestyle categories. **Conclusion:** The research results demonstrate that obesity develops from three changeable lifestyle patterns which include physical inactivity and poor dietary choices and alcohol drinking habits. The rising obesity epidemic requires early detection together with lifestyle change interventions as its most effective solution.

Keywords: Obesity, Body Mass Index, Physical Activity, Lifestyle Factors, Alcohol Consumption, Cross-Sectional Study, Public Health, Risk Factors.

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INTRODUCTION

The worldwide obesity epidemic has become one of the most critical public health issues which affects both developed nations and developing nations.

The medical condition develops through multiple factors which cause people to gain excessive body fat that results in major health dangers. The World

Health Organization (WHO) reports that global obesity rates have increased threefold since 1975 while adult obesity rates have shown significant growth during the past few decades [1]. Obesity leads to various non-communicable diseases (NCDs) which include type 2 diabetes mellitus, cardiovascular diseases, hypertension, certain cancers, and musculoskeletal disorders and this results in higher rates of disease and death [2], [3].

Body Mass Index (BMI) serves as the primary measurement tool to evaluate obesity rates throughout different populations. People with a body mass index (BMI) of 30 kg/m² or above meet the criteria for obesity classification [1]. The growing obesity epidemic results from changes in human behavior and lifestyle which include decreasing physical activity levels and people tending to eat energy-dense foods and work at desk jobs and move to city areas [4]. People now spend more time sitting because of rapid urbanization and technological progress which creates a situation where they consume more food than they expend through physical activity [5].

The primary reason people experience obesity problems arises from their lack of physical activity. People who maintain low physical activity levels experience higher probabilities of weight gain together with various metabolic health issues [6]. Unhealthy eating habits that involve frequent fast food and processed food and high-calorie beverage consumption lead to people becoming obese according to research findings [7]. People who drink alcohol and smoke cigarettes exhibit changes in their body weight together with alterations in their fat distribution patterns according to research studies [8].

People develop obesity through two main factors which include their lifestyle choices and their genetic makeup together with their family background. Research demonstrates that people with a family history of obesity face increased risk because both genetic factors and shared environmental conditions impact their health [9]. The increasing obesity problem in urban areas demands that health professionals need to identify risk factors at early stages and develop preventive measures.

Urban areas experience a higher obesity rate because people there adopt new lifestyles yet their understanding about this issue has increased. Public health initiatives need to target specific populations by understanding their risk factors and obesity prevalence. The current study investigates obesity prevalence while studying its connections to selected lifestyle choices and behavioral risk factors which affect adults.

LITERATURE REVIEW

Multiple research studies have studied how obesity increases health problems and their associated health risks among various population groups. Obesity functions as a major cause of non-communicable diseases because it connects with the lifestyle changes that people experience during times of urbanization and modernization [10]. The research evidence from epidemiological studies shows that adults gain weight and experience increasing BMI because they spend time in inactive activities and their physical activity levels decrease throughout the day [11].

The research studies have established that people who do not engage in physical activity demonstrate an elevated risk of developing obesity problems. The population-based research found that people who participated in minimal physical activity showed a higher likelihood of developing obesity problems compared to individuals who maintained regular exercise routines [12]. The same pattern exists for sedentary activities which include extended screen time and office work because these activities lead to higher body fat levels and increased risks of metabolic disorders [13].

Dietary patterns serve as vital factors which determine whether individuals develop obesity. People who eat large amounts of fast food and processed foods and sugary drinks tend to gain weight and develop higher body mass indexes according to research findings [14]. People who consume balanced diets which include fruits and vegetables and whole grains tend to experience lower rates of obesity and related metabolic health issues [15].

Individuals who drink alcohol develop an eating pattern that leads to excessive weight gain through increased calorie consumption. Research shows that people who drink alcohol frequently tend to weigh more than people who abstain from alcohol especially those who live an inactive lifestyle [16]. Health research has studied smoking behavior together with body weight because the results vary but people who smoke tend to combine this habit with other unhealthy practices which raises their chances of becoming obese [17].

Genetic predisposition and family history have been identified as important non-modifiable risk factors. People who have obese parents face higher chances of developing obesity because they inherit genetic traits while their parents show them how to eat and stay active [18]. Research establishes that socio-demographic factors including age and gender and education and urban residence patterns affect obesity rates in various populations [19].

Recent studies in urban areas which involved both community participation and cross-sectional research showed that adult obesity rates have increased because of changing lifestyles and various environmental factors [20]. The results demonstrate that communities need dedicated research efforts to discover changeable risk factors which will help create focused prevention programs.

METHODOLOGY

Study Design and Population- A community-based cross-sectional study was conducted to assess the prevalence of obesity and its associated risk factors among adults aged 18–65 years. The cross-sectional design was considered appropriate for estimating the burden of obesity and examining its relationship with lifestyle and behavioral factors at a specific point in time [21]. A total of 300 participants were included in the study using a convenience sampling method from urban areas.

Data Collection Tool- The researchers used a pre-designed structured questionnaire which had been tested for reliability to gather data about participants' socio-demographic information which included their age and gender and their lifestyle habits which included their physical activity level and dietary habits and alcohol usage and smoking behavior and their family history of obesity. The researchers divided physical activity into three categories which included low and moderate and high levels based on the participants' normal daily activities [22].

Anthropometric Measurements- Body weight and height were observed using standard methods with the calculation of Body Mass Index (BMI) by the following formula:

$$BMI = \frac{Weight(kg)}{Height(m)^2}$$

The participants were selected on the basis of the definitions provided by the World Health Organization (WHO).

Non-obese: BMI < 30 kg/m²

Obese: BMI ≥ 30 kg/m² [23].

Statistical Analysis

Researchers used Microsoft Excel to enter their data before performing their analysis with SPSS version 26.0. The researchers calculated descriptive statistics which included frequency and percentage and mean and standard deviation and minimum and maximum values to create a summary of the study variables. The researchers used the Chi-square test to examine how obesity status related to different risk factors which included physical activity alcohol consumption smoking and diet type and family history [24]. The researchers identified statistical significance at p-values below 0.05.

Ethical Considerations- The study required participants who wanted to take part to provide their informed consent before data gathering began. The study maintained the confidentiality and anonymity of all obtained data throughout its duration. The study procedures followed standard ethical guidelines for research involving human participants [25].

RESULT AND DISCUSSION

Table 1. Descriptive Statistics of BMI by Physical Activity, Alcohol Consumption, and Obesity Status

Descriptives

	Physical Activity	Alcohol Consumption	Obesity Status	BMI
N	High	No	Non-Obese	17
			Obese	16
		Yes	Non-Obese	12
			Obese	9
	Low	No	Non-Obese	43
			Obese	57
		Yes	Non-Obese	22
			Obese	29
	Moderate	No	Non-Obese	36
			Obese	23
		Yes	Non-Obese	20
			Obese	16
Missing	High	No	Non-Obese	0
			Obese	0
		Yes	Non-Obese	0
			Obese	0
	Low	No	Non-Obese	0
			Obese	0
		Yes	Non-Obese	0
			Obese	0
	Moderate	No	Non-Obese	0
			Obese	0
		Yes	Non-Obese	0
			Obese	0
Mean	High	No	Non-Obese	22.5

			Obese	32.1
		Yes	Non-Obese	22.0
			Obese	31.3
	Low	No	Non-Obese	22.3
			Obese	30.7
		Yes	Non-Obese	23.5
			Obese	31.6
	Moderate	No	Non-Obese	23.9
			Obese	31.6
		Yes	Non-Obese	22.3
			Obese	31.2
Median	High	No	Non-Obese	22.6
			Obese	32.5
		Yes	Non-Obese	21.5
			Obese	32.1
	Low	No	Non-Obese	22.2
			Obese	30.8
		Yes	Non-Obese	23.0
			Obese	32.2
	Moderate	No	Non-Obese	24.0
			Obese	31.4
		Yes	Non-Obese	22.9
			Obese	31.0
Standard deviation	High	No	Non-Obese	2.19
			Obese	2.07
		Yes	Non-Obese	1.92
			Obese	2.54
	Low	No	Non-Obese	2.56
			Obese	2.33
		Yes	Non-Obese	2.25
			Obese	2.81
	Moderate	No	Non-Obese	2.30
			Obese	2.86
		Yes	Non-Obese	2.13
			Obese	2.56
Minimum	High	No	Non-Obese	18.5
			Obese	27.1
		Yes	Non-Obese	18.4
			Obese	27.4
	Low	No	Non-Obese	16.1
			Obese	24.7
		Yes	Non-Obese	19.9
			Obese	24.7
	Moderate	No	Non-Obese	19.9
			Obese	26.5
		Yes	Non-Obese	18.2
			Obese	26.6
Maximum	High	No	Non-Obese	26.1
			Obese	36.7
		Yes	Non-Obese	25.7
			Obese	35.1
	Low	No	Non-Obese	27.8
			Obese	35.0
		Yes	Non-Obese	28.6
			Obese	37.4
	Moderate	No	Non-Obese	28.3
			Obese	37.6

		Yes	Non-Obese	25.7
			Obese	34.8

Table 1 summarizes the distribution of BMI across different levels of physical activity and alcohol consumption among obese and non-obese participants. A total of 300 subjects were analyzed, and no missing data were observed. Non-obese individuals showed a mean BMI range of 22.0 to 23.9 while obese participants demonstrated mean BMI values that ranged from 30.7 to 32.1 across all categories. The study found that people who exercised less showed more obesity which affected particularly those who engaged in minimal physical activity. The results demonstrate that obese participants show higher BMI values than non-obese participants Table 1.

Extreme Values

Table 2. Extreme Values of BMI among Study Participants

Extreme Values Of BMI			
		Row Number	**Value**
Highest	1	249	37.6
	2	109	37.4
	3	44	36.7
Lowest	1	105	16.1
	2	228	17.6
	3	87	17.7

Table 2 presents the extreme BMI values observed in the study population. The highest BMI recorded was 37.6, which doctors assessed as severe obesity because it met the criteria for that medical condition. The study documented three lowest BMI values at 16.1 and 17.6 and 17.7 which doctors used to define the underweight individuals. The study results show that participants exhibited a complete range of body mass index measurements. The variation in extreme values highlights the coexistence of both undernutrition and obesity in the study population, as shown in Table 2.

Plots

BMI

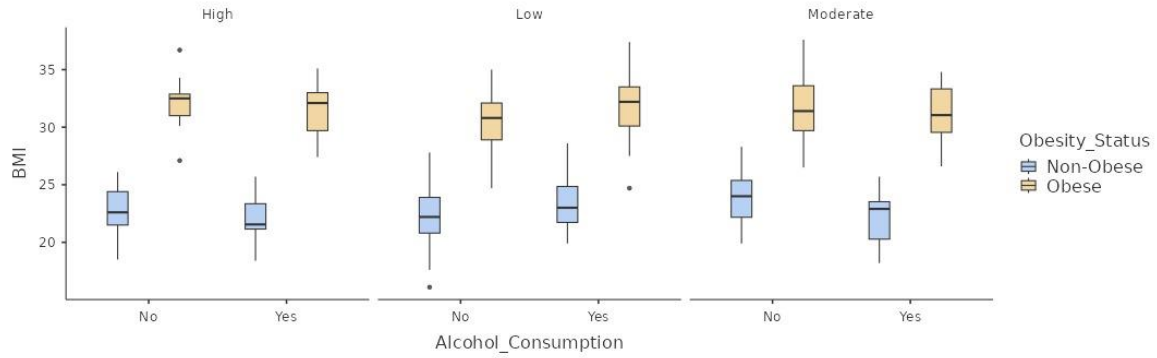

Figure 1. Distribution of BMI by Physical Activity Level, Alcohol Consumption, and Obesity Status

The boxplot distribution of BMI across various physical activity levels and alcohol consumption categories for both obese and non-obese participants is shown in Figure 1. The median BMI values for obese individuals were consistently higher than those of non-obese individuals across all groups. Participants with low physical activity showed comparatively higher BMI levels, particularly among alcohol consumers. The interquartile ranges indicate moderate variability in BMI within each category. Overall, the figure demonstrates a clear distinction in BMI distribution between obese and non-obese groups, as shown in Figure 1.

CONCLUSION

The study shows that adult obesity rates are high because people develop obesity from their daily habits and their risk factors for developing chronic diseases. The research showed that people who exercised less than one hour each week had an increased risk of developing obesity compared to people who exercised at moderate to high levels. The research established that people who followed poor dietary habits and consumed alcohol while having a family history of obesity development showed an increased risk of developing elevated body mass index.

The researchers conducted both descriptive and inferential analyses which demonstrated that obese participants exhibited different body mass index patterns compared to non-obese participants across all studied groups. The research demonstrates that obesity develops through modifiable risk factors which people can control through their lifestyle changes.

Public health organizations require strategies which enable people to engage in regular exercise and adopt healthy eating practices while developing knowledge about their behavior. Community-based health education programs and early screening initiatives may help in reducing obesity-related health risks and improving overall population health.

FUTURE WORK

Future studies should consider larger and more diverse populations to improve the generalizability of the findings. The researchers need to conduct longitudinal research designs because this method establishes the causal relationship between lifestyle factors and obesity development over time.

The research aims to study additional factors which include socioeconomic status and psychological factors together with sleep patterns and dietary assessments to determine their impact on obesity outcomes. The researchers plan to use advanced statistical techniques which include multivariate logistic regression and predictive modeling to better identify high-risk groups.

The research requires intervention studies which assess the effectiveness of lifestyle change programs and digital health solutions and community health initiatives. The evidence will help create public health policies and sustainable obesity prevention programs which will operate in both urban and rural environments.

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