ASSESSING THE PREVALENCE OF RISK FACTORS ASSOCIATED WITH OBESITY AMONG INDIVIDUALS ABOVE AGE OF 18 YEARS

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ABSTRACT

Background:
Obesity, defined as a BMI of 30 or higher, affects over 1 billion people globally, with significant increases in prevalence, including 70 million adults in India in 2022, nearly twice as many women (44 million) as men (26 million). Various risk factors, including socioeconomic status, genetics, physical inactivity, unhealthy diets, and medical conditions like heart disease and diabetes, contribute to obesity. Studies across different regions highlight the impact of behavioral, demographic, and lifestyle factors on obesity. Addressing obesity is crucial for reducing the risk of associated diseases and improving overall health and quality of life. This research aims to provide insights into these factors, helping healthcare professionals develop targeted interventions, personalized treatment plans, and effective public health policies to combat obesity.

Objective:
The primary objective of the study is to quantify and understand the prevalence of specific risk factors associated with obesity within the study population. This involves systematically identifying and measuring factors such as socioeconomic status, genetics, physical inactivity, unhealthy dietary habits, and medical conditions, to determine their contribution to obesity rates. By comprehensively analyzing these variables, the study aims to provide a detailed overview of how each factor influences obesity, thereby facilitating a deeper understanding of the epidemic's root causes. The secondary objective is to identify the most prevalent risk factor for obesity. This involves not only determining which risk factor is most commonly associated with obesity but also understanding its impact relative to other factors. Identifying the predominant risk factor will enable healthcare professionals to prioritize interventions and tailor public health strategies more effectively to address the most significant contributors to obesity within the population.

Methodology:
The study, an observational design conducted at D.Y. Patil University in Navi Mumbai over six months, aimed to assess the prevalence of risk factors associated with obesity among individuals above 18 years. Ethical clearance was obtained, and all eligible participants from the university were included. Data collection involved a structured questionnaire covering personal information, genetic and family history, socioeconomic factors using the Modified Kuppuswamy Scale, medical conditions, unhealthy eating habits, and physical activity. The questionnaire was administered through various channels to ensure diverse participation. Data were analyzed using Stata version 13.1, with demographic information summarized descriptively, and both continuous and categorical variables presented with appropriate statistical measures. The study adhered to ethical guidelines, ensuring participant confidentiality and data integrity throughout the process.

Result:
The study aimed to quantify and understand the prevalence of specific risk factors associated with obesity among individuals aged 18 and above, revealing significant insights into demographic,

genetic, socioeconomic, medical, dietary, and physical activity factors. Conducted over six months with a 100% participation rate from 100 individuals at D.Y. Patil University, the study found that the average participant was 24.35 years old with a BMI of 34.49 kg/m², classifying them as obese. A significant 67% had a family history of obesity, 85% belonged to the upper-middle class, and 98% had access to affordable nutritious food. Despite this, all participants consumed fast food regularly, with 56% consuming it daily. Medical conditions such as diabetes (18%) and high blood pressure (15%) were prevalent. Physical activity levels were predominantly sedentary, with only 3% reporting moderate activity and 56% engaging in some form of exercise, primarily walking. The findings highlight the complex interplay of genetic, socioeconomic, and lifestyle factors contributing to obesity and emphasize the need for targeted interventions.

Conclusion:
This study assessed the prevalence of risk factors associated with obesity among individuals aged 18 and above, revealing key insights into demographic, genetic, socioeconomic, medical, dietary, and physical activity profiles. The participants, with a mean age of 24.35 years and a mean BMI of 34.49 kg/m², were categorized as obese. Genetic factors showed that 67% had a family history of obesity. Despite high socioeconomic status and access to nutritious food, unhealthy eating habits were prevalent, with all participants consuming fast food and 56% doing so daily. Physical inactivity was widespread, with 97% leading sedentary lifestyles and only 23% exercising daily. Medical conditions such as diabetes (18%) and high blood pressure (15%) were also common. The findings highlight the complex interplay of various factors contributing to obesity and underscore the need for comprehensive interventions to address this multifaceted issue.

1. INTRODUCTION

"Obesity is defined as when a person has a body mass index [BMI (kg/m2), dividing a person's weight by the square of their height] greater than or equal to 30".

Recent data till 29 February, 2024. "More than 1 billion people worldwide are obese – 650 million adults, 340 million adolescents and 39 million children. This number is still increasing". In 2022, approximately 44 million women and 26 million men in India were impacted by obesity. The adult obesity rate for women was projected to rise from 1.2% in 1990 to 9.8% by 2022, while for men, it was expected to increase from 0.5% to 5.4% over the same period. In 2022, India had 70 million adults affected by obesity, with women accounting for nearly twice the number of men, totaling 44 million women and 26 million men. There are many risks factors associated with obesity.

The global study conducted from 31 countries explores how behavioral factors like smoking, alcohol, and physical Activity relate to overweight/obesity across diverse populations.[1]

The study conducted in Sharjah, UAE, explores childhood obesity rates, influenced by dietary habits, Socioeconomic status, and genetics, aiming to understand the impact of lifestyle on Obesity.[2]

The study conducted in Kenya, addresses the surge in overweight and obesity rates in Kenya, focusing on Demographic factors and health behaviors like alcohol and diet, to understand their impact On weight gain.[3]

The study conducted in Balearic Islands, investigates the current rates and causes of overweight and obesity in adults in The Balearic Islands, considering demographic, lifestyle, and dietary factors.[4] Scientific research has established a clear link between various risk factors and obesity Among adults aged 18 years and older. Socioeconomic status, genetics, physical inactivity, unhealthy dietary habits, and medical conditions have all been identified as significant contributors to obesity. Lower socioeconomic status is associated with a higher risk of obesity, genetic factors can predispose individuals to weight gain, and inadequate physical activity and unhealthy eating habits further exacerbate the issue.

Medical conditions such as heart disease, diabetes, high blood sugar, and liver disease often act as risk factors for obesity due to complex interplay. Obesity can exacerbate these conditions by inducing insulin resistance, promoting inflammation, and depositing excess fat around organs. Furthermore, hormonal imbalances associated with obesity can worsen metabolic dysfunction, while unhealthy lifestyle habits commonly seen in obese individuals can further increase the risk of developing or worsening these medical conditions. Genetic predispositions also play a role, intertwining obesity and its associated health risks. Addressing obesity through lifestyle modifications, medical interventions, and appropriate management of related health conditions is crucial in mitigating these risks and improving overall health outcomes.

Overcoming obesity is crucial for both physical and mental health. It reduces the risk of numerous diseases like diabetes, heart disease, and certain cancers, while also improving overall quality of life and longevity.

This study will provide crucial insights into the prevalence and interaction of various risk Factors contributing to obesity among adults over 18 years. By identifying these factors, Healthcare professionals can develop more targeted and effective interventions for obesity Prevention and management. This research will ultimately lead to improved medical care By informing personalized treatment plans, public health policies, and lifestyle Interventions tailored to address the specific needs of adult populations at risk of obesity.

2. METHODOLOGY

2.1 Study Design
The study conducted was an observational study.

2.2 Study setting
The study was conducted in the D.Y. Patil University Nerul, Navi Mumbai.

2.3 Study Duration
The study was for 6 months
The Ethical clearance was obtained from the Institutional Ethical committee prior to data collection.

2.4 Sample Size
All individuals from D.Y. Patil University and fulfilling inclusion criteria will be included.

2.5 Selection Criteria

INCLUSION CRITERIA	EXCLUSION CRITERIA
1. Individuals aged 18 years and above. 2. Both genders. 3. Willingness to participate in the study.	1. Individuals below the age of 18. 2. Pregnant women. 3. Individuals with pre-existing medical conditions affecting weight. 4. Participants unwilling to provide necessary information. 5. Those with disabilities impacting physical activity. 6. Individuals with a history of bariatric surgery.

2.6 Development of Tools

Personal information:
This section aims to gather basic demographic details of the participants, including their name, age, gender, height, weight, BMI, and waist to hip ratio. These parameters provide essential context for understanding individual characteristics within the study population and help in analysing the relationship between these factors and obesity risk.

Genetic and family history:
The genetic and family history section explores whether participants have a family history of obesity. Understanding familial predispositions to obesity can shed light on the genetic component of obesity risk within the study population. This information is crucial for identifying potential genetic factors contributing to obesity prevalence and informing strategies for prevention and intervention.

Socioeconomic Factors:
Socioeconomic factors play a significant role in shaping lifestyle choices, access to resources, and overall health outcomes. This section employs the Modified Kuppuswamy Scale to assess the socioeconomic status of participants based on the education, occupation, and family income of the head of the household. By examining these variables, the study aims to elucidate the influence of socioeconomic status on obesity prevalence and identify disparities that may exist within the study population.

Medical Conditions:
Medical conditions such as heart disease, diabetes, high blood pressure, and liver disease are known comorbidities associated with obesity. This section of the questionnaire investigates whether participants have any existing medical conditions from the listed options. By assessing the prevalence of these conditions among the study population, the study aims to elucidate the relationship between obesity and its associated health risks, thereby informing targeted interventions and healthcare strategies.

Physical Activity:
Physical activity is a key determinant of energy expenditure and metabolic health, and it plays a crucial role in obesity prevention and management. This section evaluates participants' lifestyle and exercise habits, including their level of physical activity, frequency of exercise, and types of physical activities engaged in. By examining these factors, the study seeks to understand the impact of physical activity on obesity risk and identify patterns of activity associated with lower obesity prevalence within the study population.
genetic and family history of obesity, specifically inquiring whether they have any family history of obesity.

Socioeconomic factors will be assessed using the Modified Kuppuswamy Scale, which measures socioeconomic status based on education, occupation, and income of the head of the household. Participants will be asked to provide details about the education level and occupation of the head of their household, as well as the family income per month.

Access to affordable, nutritious food options will be determined by asking participants whether they have access to such options. Subsequently, participants will be questioned about any existing medical conditions, including heart disease, diabetes, high blood pressure, and liver disease.
Unhealthy eating habits will be assessed by inquiring whether participants consume fast food or processed food, and if so, how often and what types of fast food they typically consume. This section aims to identify patterns of unhealthy eating behavior contributing to obesity risk.

Physical activity levels will be evaluated by asking participants about their lifestyle and exercise habits. Participants will indicate their level of physical activity, frequency of exercise, and the type of physical activities they engage in, such as sports, yoga, walking, running, gym workouts, or cycling.

The data collection method will involve distributing the questionnaire electronically or in print format to individuals above the age of 18 years. Participants may complete the questionnaire voluntarily, ensuring confidentiality and anonymity of their responses. The collected data will then be analysed to quantify the prevalence of specific risk factors associated with obesity in the study population, with a secondary objective of identifying the most prevalent risk factor for obesity.

2.7 Method of Data Collection
The data for the study titled "Assessing the prevalence of risk factors associated with obesity among individuals above age of 18 years" will be collected through a structured questionnaire comprising multiple sections aimed at gathering information regarding personal details, genetic and family history, socioeconomic factors, medical conditions, unhealthy eating habits, and physical activity.

The questionnaire will commence by acquiring personal information including name, age, gender, height, weight, BMI, and waist to hip ratio. Following this, participants will be queried about their

2.8 Method of data collection relevant to the objective
To effectively collect data in line with the objectives of the study titled "Assessing the prevalence of risk factors associated with obesity among individuals above age of 18 years," a comprehensive method incorporating both quantitative and qualitative approaches will be employed.
Sampling strategy:
Random sampling techniques will be utilized to select a representative sample from the target population of individuals above the age of 18 years.
A diverse sample covering different demographics, including age, gender, ethnicity, and socioeconomic status, will be ensured to enhance the generalizability of the findings.
Data collection procedure:
Data will be collected using the structured questionnaire provided in the study protocol.
Trained researchers or healthcare professionals will administer the questionnaire either through face-to-face interviews, telephonic interviews, or electronic surveys, depending on the feasibility and preferences of the participants.
Informed consent will be obtained from each participant before proceeding with data collection to ensure voluntary participation and ethical considerations.
Implementation:
Prior to data collection, the research team will conduct a pilot study to assess the clarity, comprehensibility, and relevance of the questionnaire items. Necessary modifications will be made based on the feedback received.
The questionnaire will be disseminated through various channels, including healthcare facilities, community centers, workplaces, and online platforms, to reach a wide spectrum of the target population.

Efforts will be made to minimize non-response bias by providing multiple avenues for participation and employing reminders for those who have not yet responded.

Quality Control:

Data collection will be closely monitored to ensure accuracy, completeness, and consistency of responses.

Regular training sessions will be conducted for data collectors to familiarize them with the questionnaire, data collection procedures, and ethical considerations.

Data validation techniques, such as cross-checking and double-entry verification, will be employed to maintain data integrity and reliability.

Ethical Considerations:

The study will adhere to ethical guidelines and regulations governing research involving human subjects.

Participant confidentiality and anonymity will be strictly maintained throughout the data collection process.

Any sensitive information obtained during the study will be handled with utmost confidentiality and used solely for research purposes.By employing these rigorous data collection methods, the study aims to obtain comprehensive and reliable information regarding the prevalence of risk factors associated with obesity, thereby facilitating informed decision-making and targeted interventions for obesity prevention and management.

2.9 Data analysis plans and methods

Data collections were done as per the study specific data requirements.

Data were shared as .xlsx file format (Microsoft Excel Version 2007 or above). Alternate data formats shall be a .csv file.

Data received were checked for completeness, errors, and discrepancies.

Data analyses were done using windows based statistical program Stata version 13.1 (Stata Corp, USA).

The data of all patients which satisfy the inclusion and exclusion criteria were included for analysis. The summary of demographic data was present:

Age n (%) Gender n (%)

Demographic measurements were summarized descriptively by age groups and gender. Summary statistics were provided for all the collected parameters, including mean and standard deviation (SD) 95% Confidence interval, Minimum, Maximum. for continuous variables. The categorical variables were presented with frequency and percentages.

In general, all questions were described by counts and percentages and presented by score as well as overall.

3. RESULT AND DISCUSSION

Personal information

Table 3.1: Demography of patients (n=100)

	N	*Mean*	*Median*	*SD*	*Min*	*Max*
Age (yrs.)	100	24.35	23.00	7.10	19	74
Height (cm)	100	159.62	160.00	6.02	142	179
Weight (kg.)	100	87.14	86.50	8.87	70	110
BMI (kg/m2)	100	34.49	33.69	5.69	30	84
Waist to hip ratio(cm)	100	0.90	0.90	0.02	1	1

*No.: No of count; Min: Minimum; Max: Maximum; SD: Standard deviation*

The demographic characteristics of the 100 participants above the age of 18 were analyzed to provide insights into the study population's profile. The mean age of the participants was 24.35 years, with a median age of 23 years and a standard deviation of 7.10, indicating some variability in age distribution within the sample. The mean height was 159.62 cm, with a median of 160.00 cm and a standard deviation of 6.02, suggesting moderate variability in height among participants. Participants had a mean weight of 87.14 kg, a median of 86.50 kg, and a standard deviation of 8.87, indicating some variability in weight distribution. Calculating the Body Mass Index (BMI), participants had a mean BMI of 34.49 kg/m2, a median of 33.69 kg/m2, and a standard deviation of 5.69, suggesting that, on average, participants fell into the obese category according to BMI classifications. Additionally, the mean waist to hip ratio was 0.90 cm, indicating a relatively consistent distribution, with minimal variability among participants.

Table 3.2: Willingness of patients to participate in the study (n=100)

	No.	*%*
● Yes	100	100.0%
● No	0	0.0%
Total	**100**	-

No.: No of count

Figure 3.1: Willingness of patients to participate in the study (n=100)
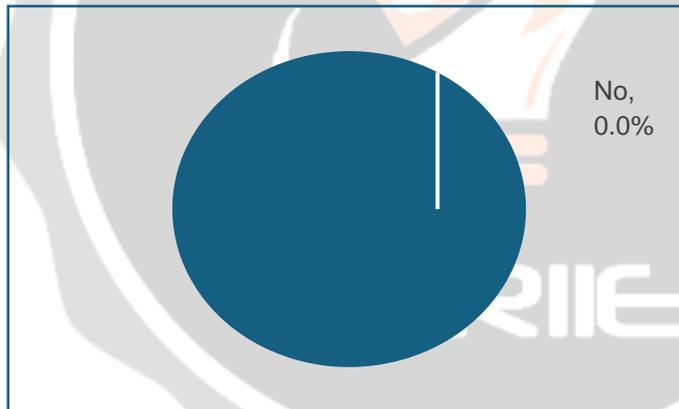
All 100 individuals approached for participation in the study willingly agreed, resulting in a 100% participation rate. This high level of willingness indicates a strong interest and cooperation among the study population, which is crucial for obtaining reliable data. The absence of any refusals (0%) suggests a favorable attitude towards the research topic, possibly indicating a recognition of the importance of understanding obesity risk factors among individuals above 18 years of age.
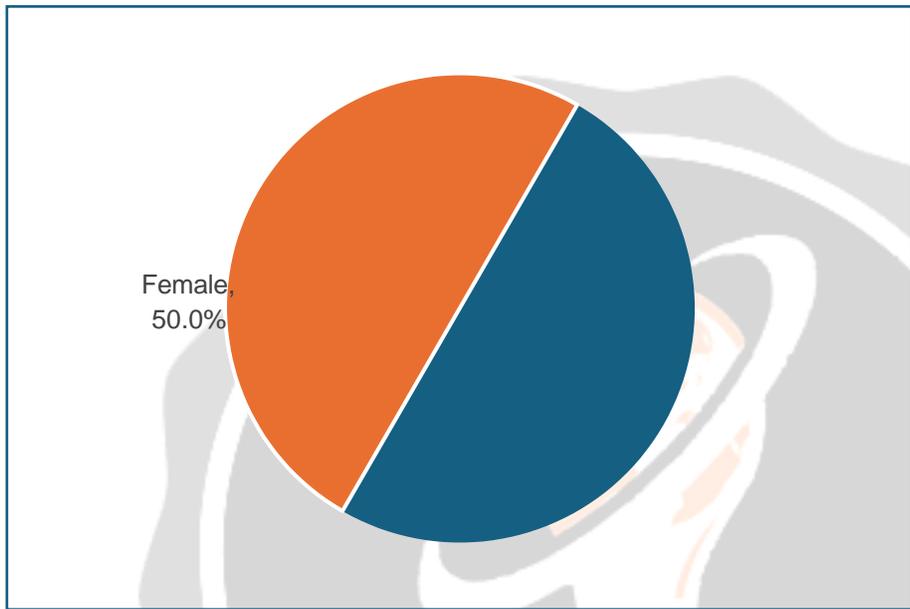
Table 3.3: Gender distribution of patients (n=100)

	No.	*%*
Gender		
● Male	50	50.0%
● Female	50	50.0%

Total	**100**	**-**

No.: No of count

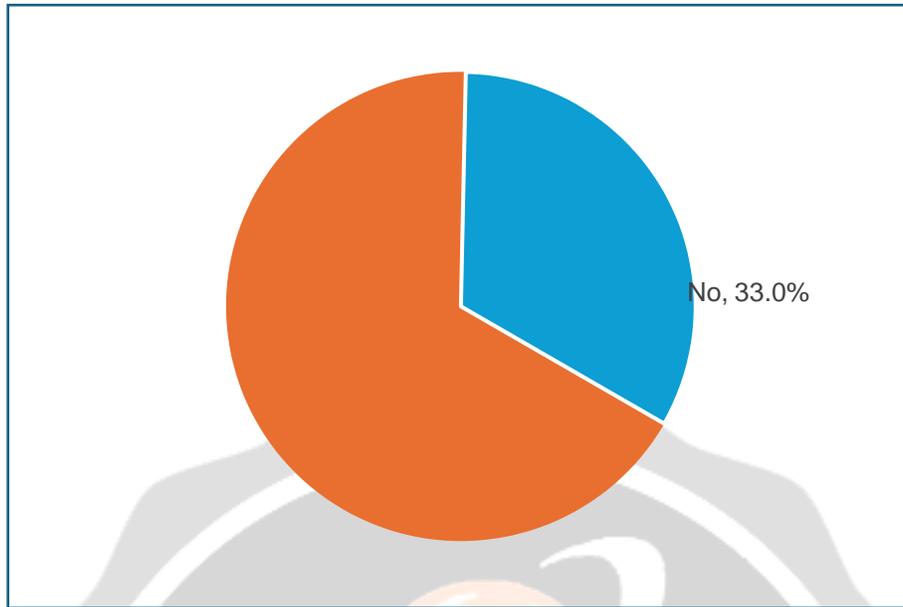**Figure 7.2: Gender distribution of patients (n=100)**

The study population consisted of 100 individuals above the age of 18, with an equal distribution of male and female participants, each comprising 50% of the total sample.

Table 3.4: Family history of patients (n=100)

	No.	*%*
● Yes	67	67.0%
● No	33	33.0%

No.: No of count

Figure 3.3: Family history of patients (n=100)

Among the 100 individuals above the age of 18 who participated in the study, 67 reported a positive family history of obesity, accounting for 67% of the total sample. Conversely, 33 participants, comprising 33% of the sample, reported no family history of obesity

Socioeconomic Factors

Q1) Education of head of the household

Table 3.5: Education of the family head of patients (n=100)

	No.	*%*
• Graduate	60	60.0%
• Intermediate or diploma	19	19.0%
• High School Certificate	14	14.0%
• Middle school completion	3	3.0%
• Profession or Honours	3	3.0%
• Primary school certificate	1	1.0%
• Illiterate	0	0.0%
Total	**100**	**-**

No.: No of count

Figure 3.4: Education of the family head of patients (n=100)
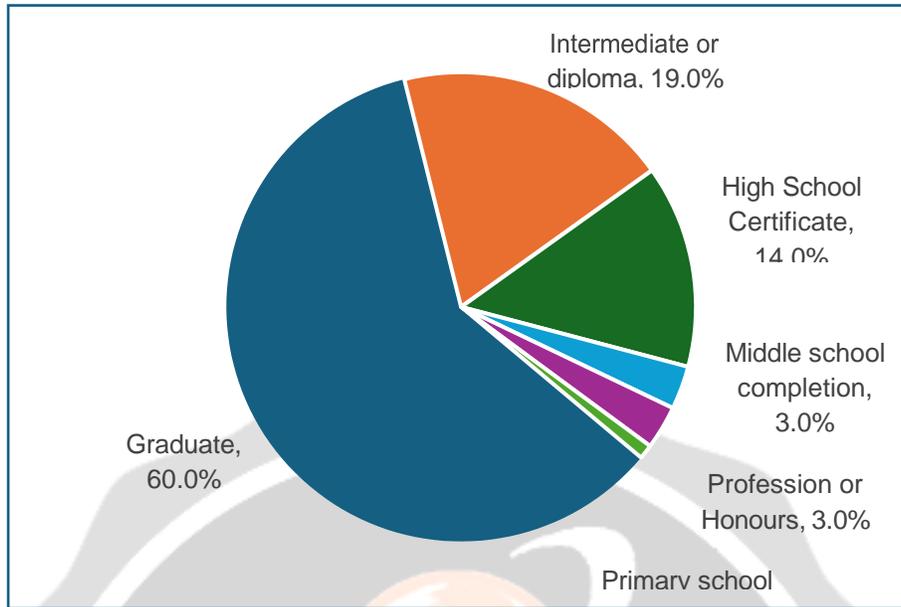
The education level of the family head among the 100 individuals above the age of 18 in the study varied significantly. The majority, comprising 60% of the total sample, reported that the family head had obtained a graduate degree. Additionally, 19% reported intermediate or diploma-level education, while 14% reported a high school certificate as the highest level of education attained by the family head. Smaller proportions reported completion of middle school, obtaining a profession or honors degree, or receiving a primary school certificate, each accounting for 3% of the sample.

Q2) Occupation of the head of the household

Table 3.6: Occupation of the head of patients (n=100)

	No.	*%*
• Clerks	50	50.0%
• Skilled Workers	24	24.0%
• Technicians and associate professionals	14	14.0%
• Skilled Agricultural and fishery workers	6	6.0%
• Elementary Occupation	2	2.0%
• Plant and machine operators and assemblers	2	2.0%
• Craft and Related trade workers	1	1.0%
• Legislators	1	1.0%

• Professionals	0	0.0%
• Skilled workers and shop and market sales workers	0	0.0%
• Unemployed	0	0.0%
Total	**100**	-

No.: No of count.

Figure 3.5: Occupation of the head of patients (n=100)
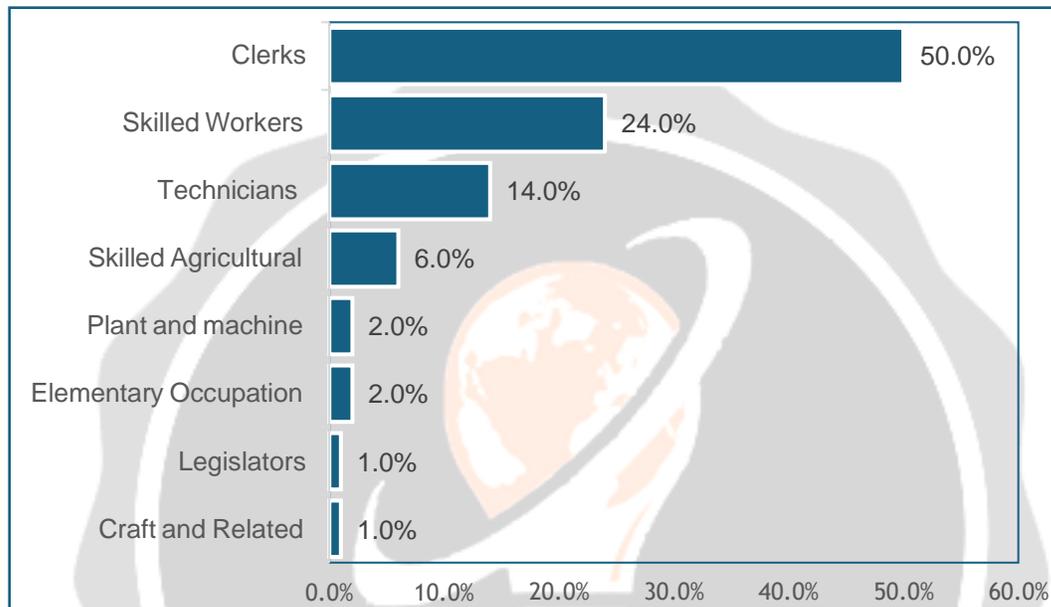
Among the 100 individuals above the age of 18 who participated in the study, the occupations of the heads of households varied significantly. Half of the participants reported that the head of their household worked as clerks, making up 50% of the total sample. Skilled workers accounted for 24% of the sample, while technicians and associate professionals represented 14%. A smaller proportion reported occupations such as skilled agricultural and fishery workers (6%), elementary occupations (2%), plant and machine operators and assemblers (2%), craft and related trade workers (1%), and legislators (1%).
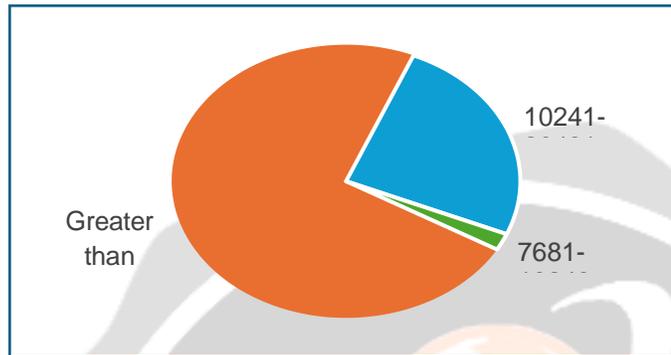
Figure 3.5: Occupation of the head of patients (n=100)
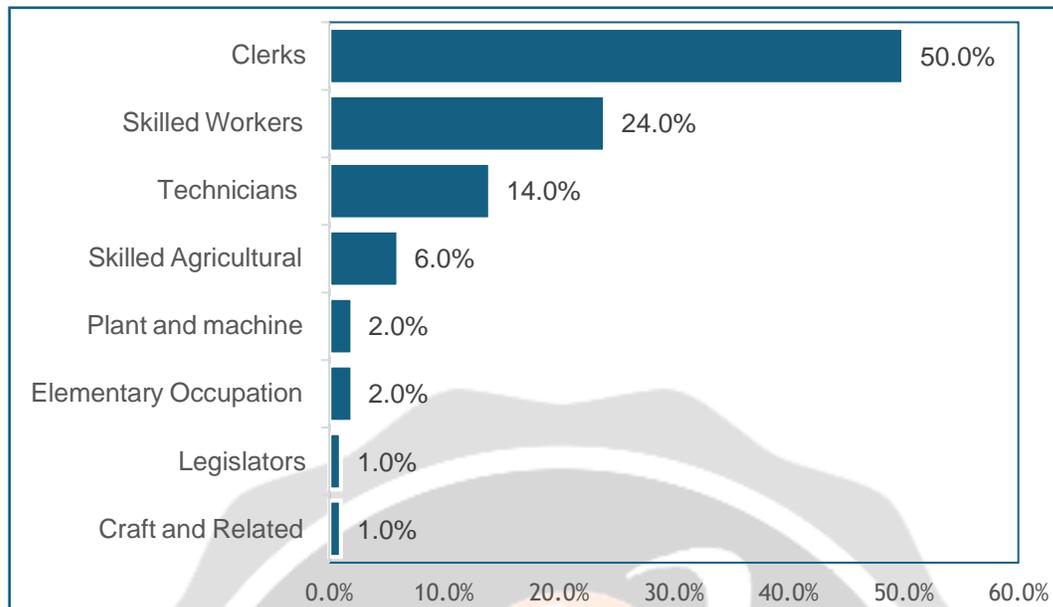
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Q3) Family income

Table 3.7: Monthly family income patients (n=100)

	No.	*%*
• **Greater than equal to 20,482 INR**	**73**	**73.0%**
• **10241-20481 INR**	**25**	**25.0%**
• **7681-10240 INR**	**2**	**2.0%**
• **5120-7680 INR**	**0**	**0.0%**
• **3072-5119 INR**	**0**	**0.0%**
• **1034-3071 INR**	**0**	**0.0%**

• **Less than equal to 1033 INR**		**0**	**0.0%**
Total		**100**	**-**

Figure 3.6: Monthly family income patients (n=100)

Among the 100 individuals above the age of 18 who participated in the study, the monthly family income varied significantly. The majority, comprising 73% of the total sample, reported a monthly family income greater than or equal to 20,482 INR. Additionally, 25% reported a monthly family income ranging from 10,241 to 20,481 INR. A smaller proportion reported monthly family incomes in lower ranges, with 2% reporting incomes between 7,681 and 10,240 INR. Notably, none of the participants reported monthly family incomes falling below 7,681 INR.

Q4) Socioeconomic class

Table 3.8: Socioeconomic class of patients (n=100)

	No.	*%*
• Upper middle	85	85.0%
• Upper	12	12.0%
• Lower middle	2	2.0%
• Upper lower	1	1.0%
• Lower	0	0.0%
Total	**100**	**-**

Figure 3.7: Socioeconomic class of patients (n=100)
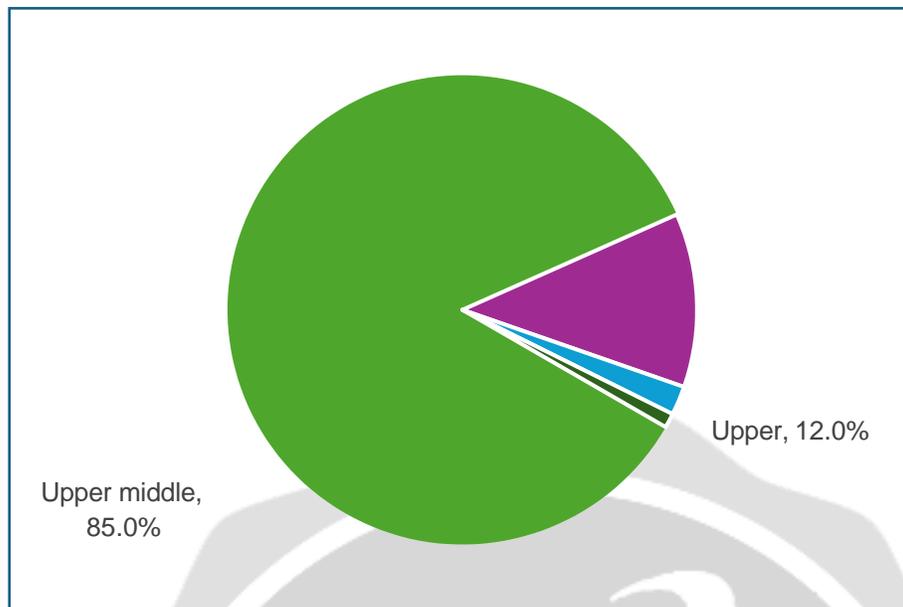
Among the 100 individuals above the age of 18 who participated in the study, the distribution of socioeconomic classes varied notably. The majority, comprising 85% of the total sample, identified themselves as belonging to the upper-middle socioeconomic class. Additionally, 12% reported being in the upper class, while smaller proportions identified as lower middle (2%) or upper-lower (1%) socioeconomic classes. Notably, none of the participants identified themselves as belonging to the lower socioeconomic class.
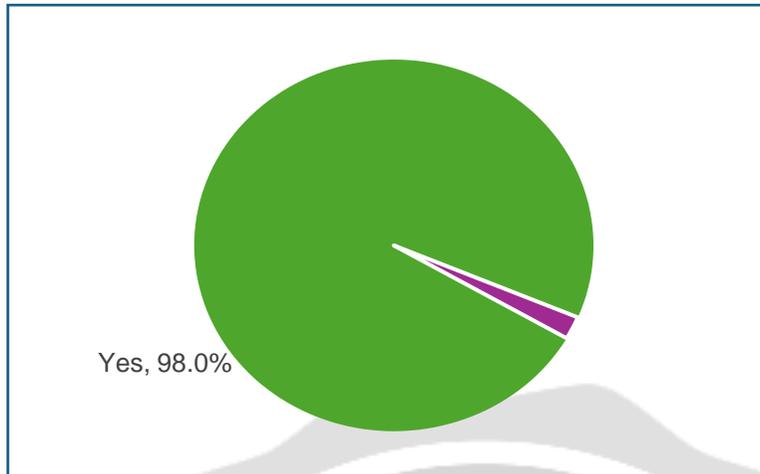
Q4. Do you have access to affordable, nutritious food options?

Table 3.9: Access to affordable nutritious food of patients (n=100)

	No.	*%*
● Yes	98	98.0%
● No	2	2.0%
Total	**100**	-

No.: No of count.

Figure 3.8: Access to affordable nutritious food of patients (n=100)

Among the 100 individuals above the age of 18 who participated in the study, the vast majority, comprising 98% of the total sample, reported having access to affordable nutritious food. This indicates a high level of accessibility to healthy food options within the study population. However, a small proportion, representing 2% of the sample, reported lacking access to affordable nutritious food.
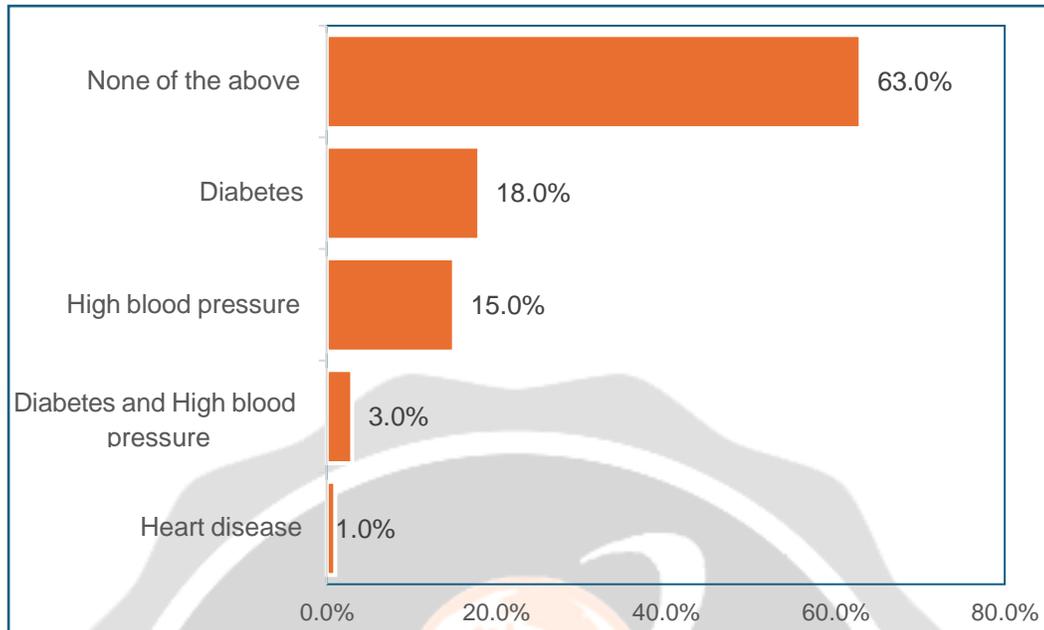
Medical Conditions

Q5) Do you have any existing medical conditions from the below?

Table 3.10**: Medical conditions of patients (n=100)**

	No.	*%*
• Diabetes	18	18.0%
• High blood pressure	15	15.0%
• Diabetes and High blood pressure	3	3.0%
• Heart disease	1	1.0%
• None of the above	63	63.0%
Total	**100**	**-**

No.: No of count

Figure 3.9**: Medical conditions of patients (n=100)**

Among the 100 individuals above the age of 18 who participated in the study, various existing medical conditions were reported. The most prevalent condition was diabetes, affecting 18% of the total sample, followed by high blood pressure, which affected 15%. Additionally, 3% of participants reported having both diabetes and high blood pressure. A smaller proportion reported having heart disease, affecting 1% of the sample. The majority of participants, comprising 63%, reported having none of the listed medical conditions.

Unhealthy eating habits

Q5) Do you consume fast food or processed food?

Table 3.11: Consumption of fast food or processed food in patients (n=100)

	No.	%
• Yes	100	100.0%
• No	0	0.0%
Total	**100**	**-**

No.: No of count

Figure 3.10**: Consumption of fast food or processed food in patients (n=100)**
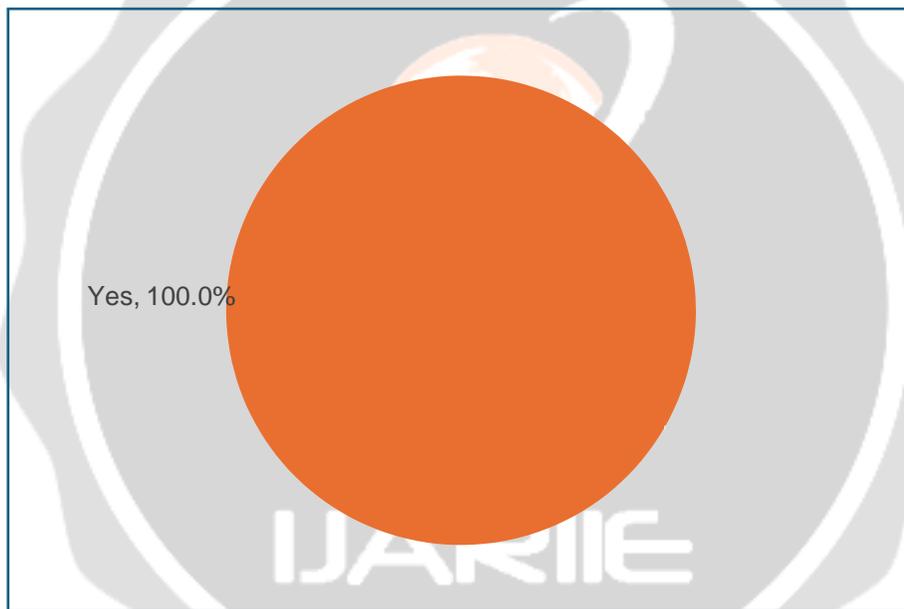
Among the 100 individuals above the age of 18 who participated in the study, all reported consuming fast food or processed food.

Q6) If yes then how often do consume fast food or processed food?

Table 3.12**: Duration of consumption of fast food or processed food (n=100)**

	No.	*%*

●	Daily	56	56.0%
●	2 times a week	32	32.0%
●	Once in a week	7	7.0%
●	Once in 15 days	3	3.0%
●	Once in a month	2	2.0%
Total		**100**	**-**

No.: No of count

Figure 3.11: Duration of consumption of fast food or processed food (n=100)
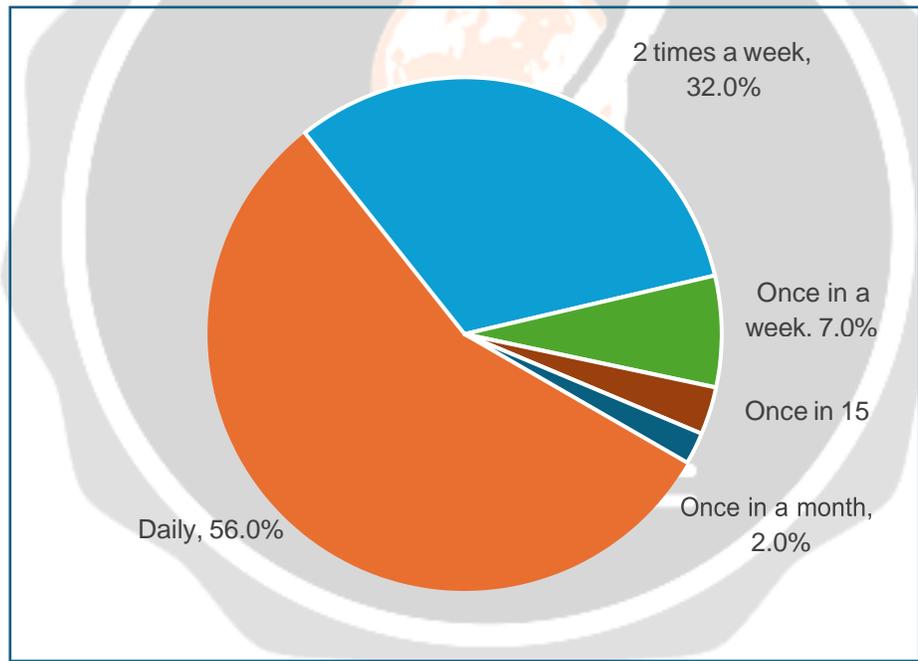
Among the 100 individuals above the age of 18 who participated in the study and reported consuming fast food or processed food, the frequency of consumption varied significantly. The majority, comprising 56% of the total sample, reported consuming fast food or processed food on a daily basis. Additionally, 32% reported consuming it two times a week, while smaller proportions reported consuming it once a week (7%), once in 15 days (3%), or once a month (2%).

Q7) What usually you eat in fast food?

Table 3.13: Fast food eaten by patients (n=100)

	No.	*%*
• Farsan	65	65.0%
• Waffers	78	78.0%
• Bakery products	85	85.0%
• Processed foods	57	57.0%
Total	**100**	**-**

No.: No of count

Figure 3.12**: Fast food eaten by patients (n=100)**
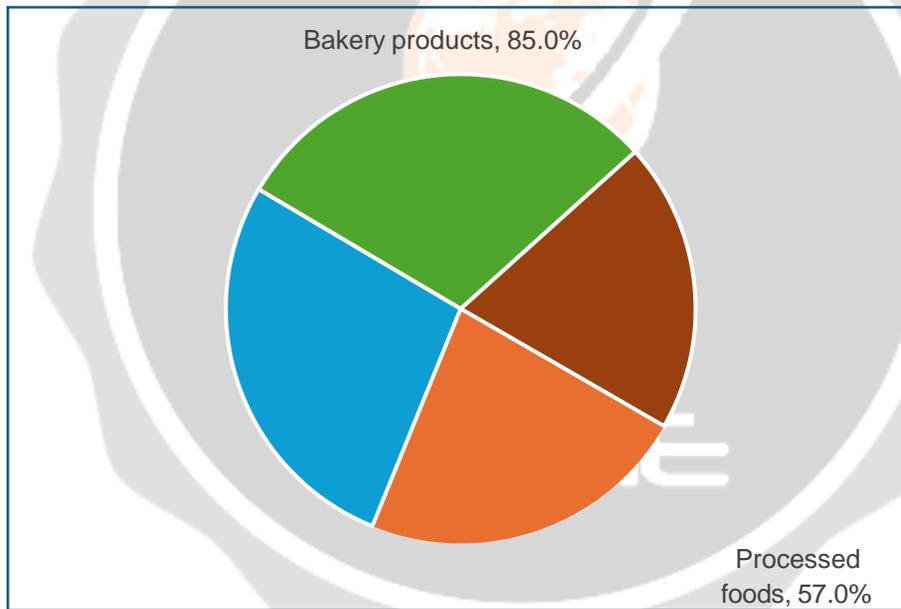
Among the 100 individuals above the age of 18 who participated in the study and reported consuming fast food, various types of fast food were commonly consumed. The most prevalent fast food item was bakery products, with 85% of participants reporting consumption. Additionally, wafers were consumed by 78% of participants, followed by farsan, which was consumed by 65% of participants. Processed foods were also commonly consumed, with 57% of participants reporting consumption.

Physical activity

How is your lifestyle?

Table 3.14**: Lifestyle of patients (n=100)**

	No.	*%*
● Sedentary	97	97.0%
● Moderate	3	3.0%
● Active	0	0.0%
Total	**100**	-

No.: No of count.

Figure 3.13**: Lifestyle of patients (n=100)**
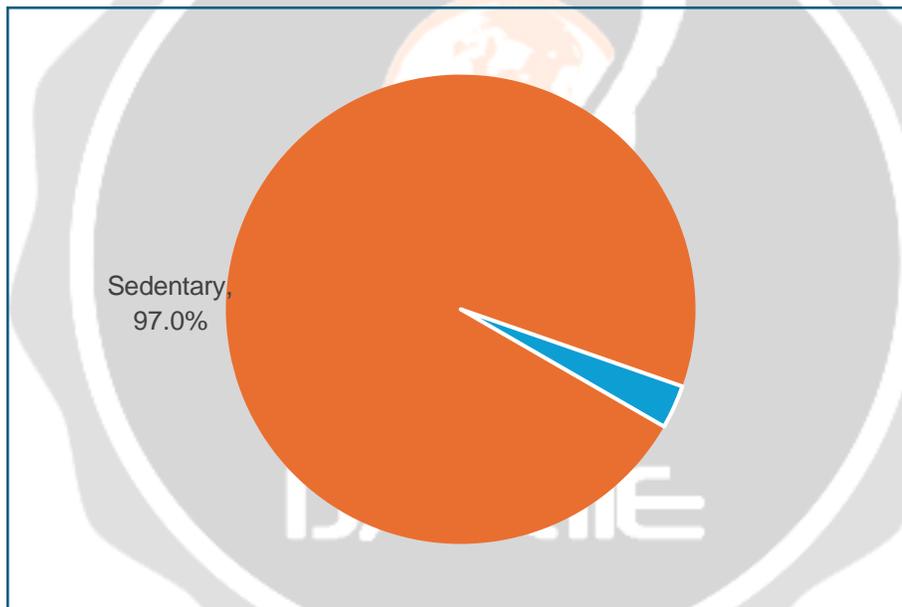
Among the 100 individuals above the age of 18 who participated in the study, the vast majority, comprising 97% of the total sample, reported having a sedentary lifestyle. This indicates a prevalent pattern of low physical activity levels within the study population. In contrast, only 3% of participants reported having a moderate lifestyle, and none reported having an active lifestyle.

Q9) Do you do any exercise

Table 3.15**: Exercise status of patients (n=100)**

	No.	*%*
yes	56	56.0%
No	44	44.0%
Total	**100**	**-**

No.: No of count

Figure 3.14**: Exercise status of patients (n=100)**
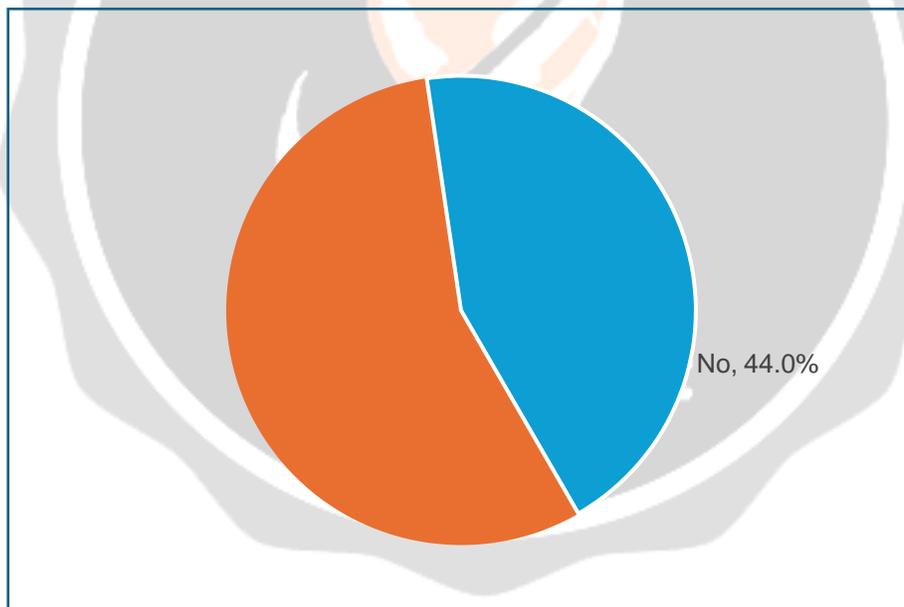
Among the 100 individuals above the age of 18 who participated in the study, 56% reported engaging in some form of exercise, while 44% reported not engaging in any exercise.

Q10) How many times you do exercise?

Table 3.16**: Duration of exercise of patients (n=100)**

	No.	*%*
2-3 times in a week	30	30.0%
Daily	23	23.0%
Once in a week	3	3.0%
Once in a month	2	2.0%
Not applicable	42	42.0%
Total	**100**	-

No.: No of count

Figure 3.15**: Duration of exercise of patients (n=100)**
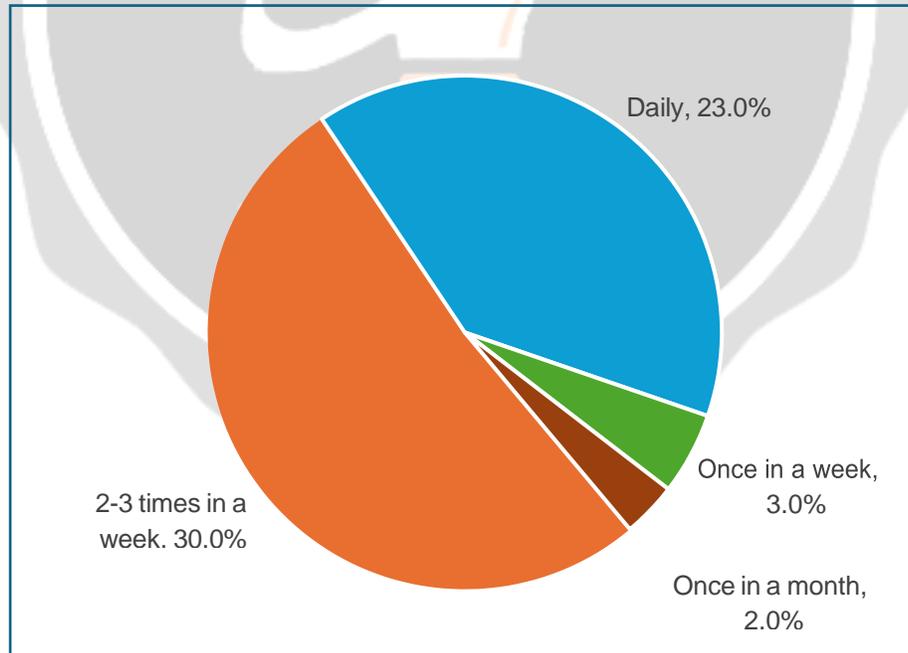
Among the 100 individuals above the age of 18 who participated in the study, various durations of exercise were reported. Thirty percent reported exercising 2-3 times a week, while 23% reported exercising daily. Additionally, smaller proportions reported exercising once a week (3%) or once a month (2%). Notably, 42% of participants reported exercise as not applicable, indicating that they did not engage in any exercise.

Q11) What kind of physical activity you are doing?

Table 3.17**:Type of physical activity done by patients (n=100)**

	No.	*%*
Walking	23	23.0%
Gym	9	9.0%
Running	8	8.0%
Sports	6	6.0%
Cycling	6	6.0%
Yoga	5	5.0%
Not applicable	43	43.0%
Total	**100**	**-**

Figure 3.16**: Type of physical activity done by patients (n=100)**
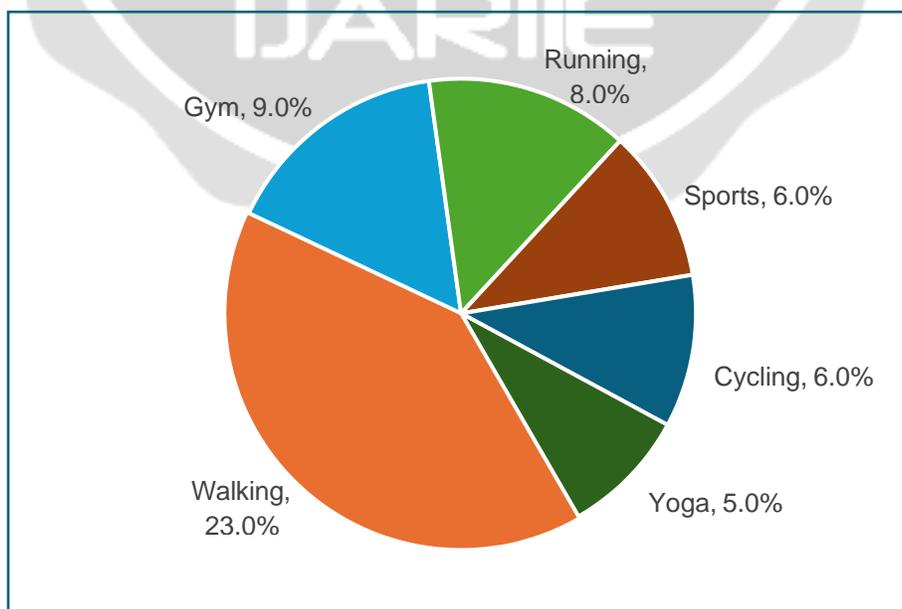
Among the 100 individuals above the age of 18 who participated in the study and reported engaging in physical activity, various types of physical activities were reported. The most prevalent type of physical activity was walking, with 23% of participants engaging in this activity. Additionally, smaller proportions reported engaging in gym workouts (9%), running (8%), sports (6%), cycling (6%), and yoga (5%). Notably, 43% of participants reported physical activity as not applicable, indicating that they did not engage in any specific type of physical activity.

4. CONCLUSIONS

This study aimed to assess the prevalence of risk factors associated with obesity among individuals aged 18 and above. The findings provide valuable insights into the demographic, genetic, socioeconomic, medical, dietary, and physical activity profiles of the participants, highlighting significant correlations with obesity.

Demographically, the study participants had a mean age of 24.35 years and a mean BMI of 34.49 kg/m², categorizing them on average as obese. There was a balanced gender distribution and a high level of willingness to participate, indicating robust engagement from the sample group.

Genetic factors revealed that 67% of the participants reported a family history of obesity, underscoring the potential hereditary influence on obesity prevalence. Socioeconomically, the majority of participants belonged to the upper-middle class, with high levels of education and occupation status among heads of households. Most participants reported high monthly family incomes, reflecting a relatively affluent cohort.

Despite the socio-economic advantage, the study uncovered significant lifestyle-related risk factors. Nearly all participants (98%) had access to affordable, nutritious food, yet 100% reported consuming fast food, with 56% consuming it daily. This suggests that availability does not necessarily translate into healthy eating habits. The prevalent consumption of bakery products, wafers, and processed foods further highlighted poor dietary choices.

Physical activity patterns were concerning, with 97% of participants leading a sedentary lifestyle. Although 56% reported engaging in some form of exercise, the frequency and intensity were often insufficient, with only 23% exercising daily and 30% exercising 2-3 times a week. Walking was the most common form of exercise among those who were active, but a significant portion (43%) did not engage in any physical activity.

Medical conditions also played a role, with 18% of participants having diabetes and 15% having high blood pressure, both of which are risk factors for obesity. The interplay between these medical conditions and obesity suggests a complex relationship that warrants further investigation.

In summary, the study highlights the multifaceted nature of obesity, influenced by genetic predisposition, socioeconomic status, unhealthy eating habits, lack of physical activity, and existing medical conditions. Addressing obesity requires a comprehensive approach that includes promoting healthy eating, encouraging regular physical activity, and managing medical conditions effectively. The high prevalence of risk factors among the participants underscores the need for targeted interventions and public health strategies to combat obesity and its associated health risks.

5. ACKNOWLEDGEMENT

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