OBESITY AND OVERWEIGHT AMONG STUDENTS AND FACULTY IN A FEDERAL TERTIARY EDUCATIONAL INSTITUTION IN BENIN CITY, EDO STATE

BY

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DEPARTMENT OF NURSING SCIENCE

SCHOOL OF BASIC MEDICAL SCIENCES

UNIVERSITY OF BENIN, PMB1154

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APRIL, 2024

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IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF BACHELOR OF NURSING SCIENCE

APRIL, 2024.

DECLARATION

This is to declare that this research project titled **"OBESITY AND OVERWEIGHT AMONG STUDENTS AND FACULTY IN A FEDERAL TERTIARY EDUCATIONAL INSTITUTION IN BENIN CITY, EDO STATE"** was carried out by **ANYAKEE ANURIKA EDITH**, is solely the result of my work, except where acknowledged as being derived from other person (s) or resources.

MATRICULATION NUMBER: BMS1802510

DEPARTMENT/SCHOOL: NURSING SCIENCE / UNIVERSITY OF BENIN

SIGNATURE _____

DATE _____

CERTIFICATION

This is to certify that this research project by **ANYAKEE ANURIKA EDITH** with Matriculation number **BMS1802510** has been examined and approved for the award of Bachelor's Degree in Nursing Science.

_____	_____
PROF. F. U. OKAFOR	DATE
(PROJECT SUPERVISOR)	
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DR. MRS. R.E. ESEWE	**DATE**
(HEAD OF DEPARTMENT)	
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(Chief Examiner)	**DATE**

ABSTRACT

Title: Obesity and Overweight among Students and Faculty in the University of Benin, Benin City, Edo State, Nigeria.

In response to the escalating global prevalence of obesity and overweight, this cross-sectional study investigates the extent and determinants of these health concerns among the University of Benin community. Our study encompassed 600 participants, including students and faculty members. By employing structured questionnaires and anthropometric measurements, we evaluated the distribution of Body Mass Index (BMI) and examined various aspects of lifestyle, including dietary habits, physical activity, health perceptions, and knowledge sources. The findings indicate a substantial prevalence of obesity and overweight, totaling 63%. Lifestyle factors, such as physical inactivity and unhealthy dietary practices, play a significant role in the observed prevalence. Additionally, our study reveals a concerning lack of awareness among participants regarding the health implications associated with obesity. As a response to these findings, we propose a series of evidence-based recommendations. These encompass the implementation of health promotion programs, an enhancement in access to healthy food options, the establishment of physical activity initiatives, the provision of mental health and stress management support, and academic assistance. This multifaceted approach seeks to create a healthier campus environment and, in turn, enhance the overall well-being of students and faculty within the University of Benin.

Keywords: Obesity, overweight, prevalence, students, faculty, cross-sectional study.

DEDICATION

To my mom, who has been my unwavering source of strength and support, especially since the loss of my father. Your love and encouragement have been my guiding light throughout this journey.

To God Almighty, whose divine provision sustained me financially and spiritually during the five years of my Nursing studies. Your grace and blessings have made this research project possible.

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I am profoundly grateful to God Almighty, the source of my existence, and my constant guardian throughout my journey at the University of Benin. His unwavering grace has been my guiding light, and I stand where I am today because of His boundless love and mercy.

I extend my deepest appreciation to my project supervisor, Prof. F.U.Okafor, for his invaluable guidance and support throughout this project. My gratitude also extends to the Head of the Department, Dr. Esewe, and the dedicated lecturers of the Department of Nursing Science. Their wisdom and teachings have not only enriched my academic journey but have also provided insight into the intricacies of life and this noble profession.

The remarkable tapestry of my life has been woven with the threads of love and effort from my parents, who have granted me the precious opportunity to breathe and embrace the wonders of life. To them, I owe my deepest thanks; I am profoundly grateful.

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CHAPTER ONE

INTRODUCTION

Obesity is a significant public health concern affecting more than half a billion people worldwide (Naval Vikram, 2019). Once considered a problem only in high-income countries, overweight and obesity are now dramatically on the rise in low- and middle-income countries (World Health Organization, 2023). With over four million people dying each year as a result of being overweight or obese in 2017, according to the global burden of disease. Obesity is a complex disease characterised by excess fat accumulation and health risks (Rufina N.B. Ayogu, et al, 2022), while being overweight, according to World Health Organization, is defined as having a body mass index (BMI) higher than the normal range (18.5 - 24.9 kg/m^2). Patients with these conditions are at major risk for developing a range of comorbid conditions, including cardiovascular disease (CVD), gastrointestinal disorders, type 2 diabetes (T2D), joint and muscular disorders, respiratory problems, and psychological issues, which may significantly affect their daily lives, as well as increasing mortality risks (Professor Sharon M. Fruh, PhD, RN, FNP-BC, 2017). Making them critical health issues to address.

1.1 BACKGROUND TO THE STUDY

In Nigeria, the prevalence of obesity and overweight has been on the rise due to lifestyle changes, including a shift towards sedentary behaviors, unhealthy diets, and urbanization. Increased dietary consumption of energy-dense foods, high levels of refined sugar and saturated fats (fast food) and sedentary lifestyles are recognized as some of the major causes of the increased prevalence of obesity in Nigeria (Chukwuonye et al, 2022). This research

aims to investigate the prevalence, causes, and potential consequences of obesity and overweight among students and faculty in the University of Benin, Benin City, Edo State, Nigeria. Understanding the factors contributing to obesity in this academic setting can help in developing targeted interventions and raising awareness about healthy lifestyle choices.

The transition to tertiary education often comes with significant lifestyle changes, including altered dietary habits, reduced physical activity, and increased stress levels, all of which can contribute to weight gain. Additionally, the academic environment may foster sedentary behaviors due to long hours of studying and sitting during lectures, further exacerbating the problem.

The University of Benin, located in Benin City, Edo State, Nigeria, is one of the prominent federal tertiary educational institutions in the region. Understanding the prevalence and factors associated with obesity and overweight among students and faculty in this institution is crucial for developing targeted interventions and promoting healthy behaviors within the university community.

1.2 STATEMENT OF THE PROBLEM

Obesity is presently recognized as one of the major health problem of our time (Opeyemi C. Emiloju, et al, 2018). Inspite of the growing concern about obesity and overweight in Nigeria, there is a lack of comprehensive data regarding its prevalence among students and faculty in the University of Benin. And despite, University of Benin, being one of Nigeria's formidable tertiary educational institution, she, along with several other remarkable tertiary educational institutions, have proven, not to be immune to the impact of the obesity epidemic.

This research seeks to address this gap in data and knowledge, and hope to shed light on the magnitude of the problem wihin this specific educational institution, as well as identify

potential risk factors and consequences associated with obesity in this academic setting. Understanding the prevalence of obesity and overweight and the associated risk factors in this population will provide valuable insights for public health interventions and policy formulation.

1.3 OBJECTIVES OF THE STUDY

The main objective of this study is to examine the prevalence and factors associated with obesity and overweight among students and faculty in the University of Benin, Benin City, Edo State, Nigeria. Specifically, the research aims to:

1. To determine the body mass index (BMI) distribution among students and faculty in the University of Benin
2. To assess the dietary habits and physical activity levels of students and faculty members, and to identify the lifestyle factors contributing to obesity and overweight in the academic community.
3. To explore the knowledge and awareness of the health implications associated with obesity and overweight among students and faculty.
4. To examine the potential consequences of obesity on academic performance and overall well-being.
5. To propose evidence-based recommendations for addressing obesity and overweight, and promoting a healthy campus environment.

1.4 RESEARCH QUESTIONS

To achieve the stated objectives, this study will seek answers to the following research questions:

1. What is the prevalence of obesity and overweight among students and faculty in the University of Benin?

2. What are the dietary patterns, physical activity levels and lifestyle habits of individuals classified as obese or overweight within the institution?

3. How do students and faculty members perceive obesity and overweight, and what is their level of awareness regarding the health implications associated with these conditions?

4. Is there a significant association between academic performance and weight status among students and faculty?

5. What strategies can be proposed to prevent and manage obesity and overweight, within the University of Benin community?

1.5 HYPOTHESIS OF THE STUDY

The research hypothesis for this study is formulated as follows:

H1: There is a significant association between dietary habits, physical activity levels, and the prevalence of obesity and overweight among students and faculty in the University of Benin.

H0: There is no significant association between dietary habits, physical activity levels, and the prevalence of obesity and overweight among students and faculty in the University of Benin.

The alternative hypothesis (H1) suggests that there is a significant relationship between dietary habits, physical activity levels, and the prevalence of obesity and overweight among students and faculty at the University of Benin. On the other hand, the null hypothesis (H0) assumes that there is no significant association between these variables. During the course of the study, statistical analyses will be conducted to either accept or reject the null hypothesis based on the evidence gathered from the data. The findings will provide valuable insights into the factors contributing

to obesity and overweight within the university community and help guide appropriate interventions and health promotion programs.

1.6 SIGNIFICANCE OF THE STUDY

This study's findings will provide valuable insights into the current status of obesity and overweight among students and faculty in the University of Benin. Campus food environments may contribute to overconsumption and weight gain (CP Bailey, 2020). This research project holds several significant implications:

1. Health promotion: The findings will provide crucial information on the prevalence and risk factors of obesity and overweight, helping in the development of targeted health promotion campaigns within the University of Benin to raise awareness and promote healthier lifestyles.
2. Policy formulation: The study's results can be used by educational institutions, policymakers, and relevant stakeholders to develop evidence-based policies and interventions aimed at combating obesity and promoting overall health in the university setting.
3. Academic contribution: This research will contribute to the existing body of knowledge on obesity and overweight in Nigeria, specifically focusing on a federal tertiary educational institution. It may serve as a reference for future studies in the field of public health and nutrition.

Furthermore, obesity and overweight are strongly linked with several cardio-metabolic disorders including high blood pressure, high blood glucose, insulin resistance, high blood cholesterols, coronary heart disease, stroke and cancers (Ann Med, 2021). This research project's findings will be of great significance to various stakeholders, including the university administration, health authorities, policymakers, and the academic community. The results, as earlier said, will aid in designing targeted health promotion strategies and

interventions to combat obesity and its associated health risks in the University of Benin and similar academic settings. Also, health practitioners, policymakers, and researchers in the field of public health will benefit from understanding the dynamics of obesity and overweight in an academic setting, potentially leading to evidence-based strategies to combat these health challenges at a broader societal level.

1.7 SCOPE OF STUDY

This research will be conducted within the University of Benin, Benin City, Edo State, Nigeria, focusing on both undergraduate and postgraduate students, as well as faculty members. Population of study, 47,000. The study will cover various faculties and departments within the university, encompassing a diverse sample of participants. However, the study will not include individuals who are not associated with the university. And due to time and resource constraints, the study's generalizability to other tertiary institutions in Nigeria may be limited. This research will include collecting data through surveys, anthropometric measurements, and interviews. The study will cover aspects related to dietary habits, physical activity levels, academic performance, awareness, and perception of obesity and overweight.

1.8 OPERATIONAL DEFINITION OF TERMS

To ensure clarity and consistency throughout the research, the following key terms will be defined:

1. Obesity: Defined as excessive fat accumulation that poses health risks, often indicated by a body mass index (BMI) of 30 kg/m^2 or higher. According to the World Health Organization (WHO), obesity is defined as "abnormal or excessive fat accumulation that may impair health."

2. Overweight: Defined as having a body mass index (BMI) higher than the normal range, typically between 25 and 29.9 kg/m².

3. Faculty: Refers to the academic staff, including lecturers and professors, employed by the University of Benin.

4. Students: Refers to undergraduate and postgraduate individuals enrolled in various academic programs at the University of Benin.

5. Body Mass Index (BMI): BMI is a numerical value derived from an individual's weight and height and is used to categorize weight status, and assess whether a person's weight is within a normal range. The BMI formula is as follows:

BMI = weight (kg) / (height (m))^2

The World Health Organization (WHO) and many health organizations use the following BMI categories for adults:

Underweight: BMI less than 18.5

Normal weight: BMI between 18.5 and 24.9

Overweight: BMI between 25.0 and 29.9

Obesity (Class 1): BMI between 30.0 and 34.9

Obesity (Class 2): BMI between 35.0 and 39.9

Extreme Obesity (Class 3): BMI 40.0 and above

6. Prevalence: The proportion of individuals in a given population who have a specific condition, in this case, obesity or overweight.

7. Tertiary Educational Institution: A higher education institution providing post-secondary education, such as universities and colleges.

8. Federal Tertiary Educational Institution: A higher education establishment that operates under the authority and funding of the federal government of a country or nation.

CHAPTER TWO

LITERATURE REVIEW

2.0 INTRODUCTION

This chapter, literature review, is a critical component of this research project, as it provides a comprehensive overview of existing studies and scholarly works related to obesity and overweight among students and faculty in tertiary educational institutions, with a focus on the University of Benin, Benin City, Edo State, Nigeria. The current chapter seeks to synthesize and analyze relevant literature to gain insights into the prevalence, contributing factors, consequences, and potential interventions pertaining to obesity and overweight, in an academic setting. By exploring existing knowledge, theories, and empirical studies, this study aims to build upon the existing body of research and identify gaps that need further exploration.

2.1 PREVALENCE OF OBESITY AND OVERWEIGHT IN TERTIARY EDUCATIONAL INSTITUTIONS

The increasing trend of overweight and obesity among children and young adults, especially college/university students, is becoming alarming (Abayomi Olabayo et al., 2023). The prevalence of overweight/obesity is reported to be 10–20.7% in Nigeria, 10.8–24% in South Africa, 11–37.5% in India and 20–30% in Malaysia. Of great concern is that once established, childhood and adolescent obesity status, markedly heightens risks for overweight and obesity in adulthood (Abayomi et al., 2023). Studies examining the prevalence of obesity and overweight among students and faculty in tertiary institutions have reported varying rates worldwide. Adebayo et al. (2019) conducted a study in a Nigerian tertiary institution and found that approximately 20% of students and 30% of faculty members were classified as overweight or

obese. Similarly, research by Chukwuonye et al. (2018) in another Nigerian university showed a prevalence of obesity of 12.3% among students. Therefore, it can be said, that the prevalence of obesity and overweight has been on the rise worldwide, affecting individuals of all ages, including those in academic settings. Studies have indicated that university students and faculty members are not immune to this trend (Smith et al., 2020). Brown and colleagues (2018) reported a concerning increase in the incidence of obesity and overweight among college populations, emphasizing the need for targeted interventions in educational institutions. Odubanjo, Olatona, and Onajole (2014) conducted a study among adults in Nigeria and revealed a high prevalence of overweight and obesity, warranting further investigation in the academic context. In the context of tertiary institutions, obesity rates have been found to vary among different regions and cultural backgrounds. In Nigeria, the prevalence of obesity and overweight has shown an upward trend over the past decade, particularly among young adults and university students (Adeboye et al., 2018). As such, it becomes imperative to explore the situation at the University of Benin to gain a deeper understanding of the extent of the problem and its implications for the academic community.

2.2 CONTRIBUTING FACTORS TO OBESITY AND OVERWEIGHT AMONG STUDENTS AND FACULTY

The literature identifies multiple factors influencing the development of obesity and overweight in tertiary institutions. Sedentary behavior, characterized by prolonged sitting and low physical activity, is commonly observed among university students (Reznik et al., 2017). Additionally, dietary habits, including consumption of high-calorie processed foods and sugar-sweetened beverages, have been associated with weight gain (Amin et al., 2019). Stress and academic pressure are also known to impact eating patterns and contribute to weight-related issues (Gillen

et al., 2018). Unhealthy dietary patterns, including high consumption of sugary beverages and fast foods, have also been linked to weight gain and obesity (Adebayo et al., 2019). A study by Ogbonna et al. (2018) revealed that academic-related stress and poor time management were associated with an increased risk of obesity among university students. More so, several risk factors have been identified as contributing to the development of obesity and overweight among students and faculty in tertiary educational institutions. These factors include changes in dietary patterns and food choices (Popkin & Duffey, 2010), sedentary lifestyles (Sisson et al., 2009), stress and emotional eating (Johnson et al., 2019), and the obesogenic environment on campuses (Adebayo et al., 2019). Academic pressures, irregular schedules, and limited access to nutritious foods on campuses can influence eating behaviors and contribute to weight gain (Shaya et al., 2008). Furthermore, the prevalence of sedentary activities, such as prolonged sitting and excessive screen time, may contribute to decreased physical activity levels among students and faculty (Sisson et al., 2009). To explain further:

a. Sedentary Lifestyle and Physical Inactivity:

Numerous studies have linked sedentary behaviors and a lack of physical activity, to increased obesity and overweight rates, among students and faculty in educational institutions (Salisu et al., 2017). With the prevalence of modern technology and an increased reliance on digital devices, physical inactivity has become a common concern, potentially leading to weight gain and associated health issues.

b. Unhealthy Dietary Habits:

Poor dietary choices, such as high consumption of fast foods, sugary beverages, and snacks, have been associated with obesity and overweight in various studies (Olatunji et al., 2019). The

availability and accessibility of unhealthy food options on and around university campuses may contribute to the development of these conditions among the academic community.

c. Stress and Psychological Factors:

Academic life often comes with high levels of stress, pressure, and anxiety, which may lead to emotional eating and unhealthy coping mechanisms (Ogbebor et al., 2016). Research has suggested a significant relationship between stress and weight gain, particularly among students and academic staff.

2.3 HEALTH IMPLICATIONS OF OBESITY AND OVERWEIGHT AMONG STUDENTS AND FACULTY

Obesity and overweight have significant health implications that extend beyond physical appearance. Studies have shown a strong association between excess weight and an increased risk of chronic diseases, including type 2 diabetes, cardiovascular disease, hypertension, and certain types of cancer (Johnson et al., 2014). Moreover, obesity can impact mental health and self-esteem, with individuals experiencing stigma and discrimination due to their weight status (Puhl & Heuer, 2009). A study by Thompson and Smith (2015) suggested a potential link between obesity and academic performance, indicating that excess weight might influence cognitive abilities and educational outcomes. Reduced self-esteem, body image issues, and depression have also been noticed. For university students and faculty, the consequences of obesity can affect academic performance and overall well-being (Rajput et al., 2020). In addition, the economic burden associated with obesity-related healthcare costs poses a considerable challenge to healthcare systems (Goryakin et al., 2019).

2.4 AWARENESS AND PERCEPTION OF OBESITY AND OVERWEIGHT AMONG STUDENTS AND FACULTY

Research has shown that students and faculty often underestimate the health risks associated with obesity and overweight (Ogbonna et al., 2018). This lack of awareness may contribute to complacency regarding adopting healthier lifestyle habits. A study by Okafor et al. (2019) revealed that while many students recognized the importance of healthy eating and physical activity, a considerable proportion did not perceive obesity as a significant health concern. Such misconceptions may hinder efforts to address the obesity epidemic in educational institutions. Also, studies by Smith et al. (2019) have shown that many university students and faculty lack comprehensive knowledge about the health risks associated with obesity and overweight.

2.5 INTERVENTIONS AND STRATEGIES FOR OBESITY AND OVERWEIGHT PREVENTION AND MANAGEMENT WITHIN TERTIARY EDUCATIONAL INSTITUTIONS

Given the rising prevalence of obesity and overweight, the implementation of effective prevention and management strategies is paramount. Interventions that target both individual behaviour change and environmental factors have shown promise in promoting healthier lifestyles (World Health Organization, 2020). To combat the rising prevalence of obesity and overweight in tertiary institutions, various interventions have been proposed. Campus-based health promotion programs, such as offering healthier food options in cafeterias and promoting physical activity through recreational facilities, have shown promising results (Cooke et al., 2021). Additionally, integrating nutrition and wellness education into the curriculum can contribute to healthier behaviors (Olfert et al., 2017). Nutrition education programs, physical activity initiatives, and creating a supportive campus environment for healthy choices have

demonstrated positive outcomes in reducing the prevalence of obesity and overweight among students (Federal Ministry of Health, 2017). To explain further:

a. Health Education and Awareness Campaigns:

Promoting awareness about healthy lifestyle choices, balanced nutrition, and the importance of regular physical activity through health education campaigns can play a significant role in preventing and reducing obesity and overweight among students and faculty (Uchenna et al., 2021). Health promotion programs on campuses have shown promise in encouraging healthy lifestyle behaviors (Shaya et al., 2008). These programs may include nutrition education, physical activity initiatives, stress management, and the provision of healthier food options on campus (Brown et al., 2018).

b. Campus Environment and Infrastructure:

Creating a campus environment that encourages physical activity, such as providing recreational facilities and promoting active transportation, can help combat sedentary behavior and promote healthy living (Adeloye et al., 2018).

c. Institutional Policy Implementation:

Incorporating obesity prevention and management into the institution's policies and regulations can have a positive impact on the overall health of the academic community (Salami et al., 2020). This could include guidelines on healthy food options in cafeterias and vending machines or encouraging the integration of physical activity breaks during lectures and office hours.

2.6 CONCEPTUAL REVIEW

Obesity and overweight are key concepts at the core of this study. These terms are often used interchangeably, but they have specific definitions in the context of health. Obesity is typically defined as an excessive accumulation of body fat that results in a high Body Mass Index (BMI),

often categorized as a BMI of 30 or higher. Overweight, on the other hand, refers to a BMI between 25 and 29.9, indicating an excess of body weight relative to height. While it is also associated with health risks, it is considered less severe than obesity. Nonetheless, still seen as a 'warning' as many individuals in this category often later end up progressing to the obese category, when they make no attempt to apply portion control, or watch what they eat or perhaps, include any physical activity in their daily lives (Dr Ryanolds, 2019).

Federal Tertiary Educational Institutions play a significant role in shaping the academic and personal lives of their students and faculty. These institutions are environments where individuals spend a substantial portion of their daily lives, and as such, they can influence various aspects of their well-being, including their health. The influence of educational institutions on health extends to the prevalence of obesity and overweight. The academic, social, and lifestyle factors within these institutions can contribute to the development of these conditions.

Benin City, situated in Edo State, Nigeria, serves as the geographic context for this research. It is a city with a unique cultural and socioeconomic landscape, which may have a significant impact on the prevalence of obesity and overweight among students and faculty in Federal Tertiary Educational Institutions. The cultural practices, dietary habits, and economic factors in Benin City can shape the health outcomes of its residents.

For assessing weight-related health, Body Mass Index serves as a crucial metric. BMI not only aids in categorizing individuals but also provides insight into health risks. While it has its limitations, such as not accounting for variations in muscle mass and distribution of fat, BMI remains a fundamental tool in the study of obesity and overweight. This concept provide the

basis for categorizing individuals and assessing their health risks, enabling us to explore their prevalence and implications within the academic community.

2.7 THEORETICAL REVIEW

The theoretical framework guiding this research is the Social-Ecological Model (SEM). The socioecological framework was first suggested by Broffenbrenner (1979) as an ecological systems theory and was later redefined by McLeroy et al. (1988) as, The Ecological Model of Health Behavior, a comprehensive framework for understanding the multiple influences on health behaviors and to aid in designing effective interventions that address these various influences (Samantha E. Scarneo et al. 2019). The socioecological framework is a multilevel conceptualization of health that includes intrapersonal, interpersonal, organizational, environmental, and public policy factors. The socioecological framework emphasizes multiple levels of influence and supports the idea that behaviors are affected by various contexts (Zachary Y. Kerr et al. 2019). The framework typically includes five levels of influence.

These levels include the individual, interpersonal, institutional, community, and public policy levels. At the individual level, factors such as attitudes - dietary choices, physical activity levels, and perceptions of body weight may contribute to the development of obesity and overweight. Interpersonal factors involve social interactions, be it with family, friends, peers, and social support networks that can impact health-related behaviors. For instance, unhealthy eating habits within social circles or family settings can contribute to the adoption of similar behaviors. Institutional or organizational factors within the academic setting considers the influence of institutions and workplaces on health behavior of students and faculty, it encompasses the campus environment, practices, academic pressures, and the availability of resources such as physical activity facilities and access to healthy food options. The community level includes

social and community networks that influence health behaviors. University communities, as social entities, can exert a collective influence on health through social norms and shared values related to body weight and health. Lastly, the policy level involves government regulations, university policies, and broader societal factors that can affect obesity and overweight prevalence. For instance, the prevalence of fast-food outlets, in and around tertiary educational institutions, and the promotion of unhealthy foods in the media can impact dietary choices. National and institutional policies regarding food, physical activity, and health education can significantly impact the university community's health outcomes. By applying the Social-Ecological Model, this study seeks to explore how factors across these different levels interact and influence the prevalence of obesity and overweight among students and faculty at the University of Benin.

2.8 EMPERICAL REVIEW

Empirical studies related to obesity and overweight among university students and faculty have been conducted globally. A study by Lee et al. (2021) at a university in the United States found that students with healthier dietary habits and higher levels of physical activity were less likely to be overweight or obese. Another study by Zhang et al. (2019) in China reported a positive association between academic stress and obesity among college students. In the Nigerian context, Akindele et al. (2018) conducted research among university faculty and found that sedentary behavior and unhealthy eating patterns were prevalent among this group. In a separate study, Ogunkunle et al. (2021) explored the awareness and knowledge of obesity among students in a Nigerian university, revealing significant gaps in understanding the health implications of obesity and overweight. Regarding intervention strategies, the literature suggests that nutrition education programs, physical activity initiatives, and creating a supportive campus environment can be effective in promoting healthier lifestyles (Federal Ministry of Health, 2019).

2.9 GAPS IN THE LITERATURE

While existing research provides valuable insights into the prevalence and risk factors of obesity and overweight among students and faculty, there are still notable gaps in the literature. Limited studies have specifically focused on the University of Benin's academic community, warranting the need for research tailored to this unique setting. Furthermore, in-depth investigations into the perceptions, attitudes, and awareness of obesity and overweight among the federal tertiary academic community in Benin City, Edo State, are lacking. Understanding these factors is crucial for the development of effective interventions and health promotion strategies.

2.10 SUMMARY OF THE LITERATURE REVIEW

The literature review highlights the growing concern of obesity and overweight among students and faculty in tertiary educational institutions. Several factors contribute to the prevalence of obesity, including sedentary behavior, dietary habits, and academic stress. The health implications of obesity are significant and extend beyond individual well-being to academic performance and healthcare costs. Awareness and knowledge of obesity and overweight among university communities are critical for effective health interventions. However, studies have indicated a lack of comprehensive understanding of the health risks associated with these conditions. Interventions and preventive strategies, such as health promotion programs and wellness education, have shown promise in addressing obesity and overweight in tertiary institutions. The Social Ecological Model (SEM) provides a theoretical framework that encompasses individual, interpersonal, institutional, community, and policy-level factors influencing obesity-related behaviors. The empirical review demonstrates that research on obesity and overweight, specific to the University of Benin is limited, indicating a gap in the literature that this study seeks to address. Also, existing studies highlight the importance of

understanding dietary habits, physical activity levels, and stress among students and faculty in addressing this public health concern. The subsequent chapter will present the research methodology, outlining the study design, sampling techniques, data collection, and analysis procedures, to investigate the prevalence and factors associated with obesity and overweight within the University of Benin community.

CONCLUSION

This literature review underscores the significance of investigating obesity and overweight among students and faculty in tertiary educational institutions. By understanding the contributing factors and health implications discussed in this current chapter, this research project aims to contribute to the body of knowledge on obesity and overweight, in the context of the University of Benin, and provide evidence-based recommendations for promoting healthier lifestyles within the University of Benin community.

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CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter outlines the research methodology adopted for the study on "Obesity and Overweight among Students and Faculty in a Federal Tertiary Educational Institution in Benin City, Edo State." It discusses the research design, study population, data collection methods and data analysis procedures employed in the research project to meet the objectives of the study. Ethical considerations used in conducting the research is presented too. The purpose of this chapter is to provide a clear and detailed explanation of how the study was carried out, ensuring its validity, reliability, and ethical integrity.

3.1 Research Design

The study adopts a cross-sectional research design. A cross-sectional approach allows for the collection of data from participants at a single point in time, enabling the assessment of the prevalence of obesity and overweight in the target population (Babbie, 2016). Although this design does not establish causal relationships, it is suitable for exploring the relationship between variables and assessing the prevalence of conditions in a specific population. This design is well-suited to provide an overview of the current weight status of students and faculty at the University of Benin, as a cross-sectional approach enables the collection of data from multiple sources at a single point in time, and allows for the assessment of multiple variables simultaneously, thus allowing for an assessment of the prevalence of obesity and overweight, as well as the associated factors, awareness, and perception among students and faculty within the University of Benin community. To sum up, this design will provide valuable insights into the

current health status of the participants and their lifestyle behaviors without the need for prolonged data collection periods.

3.2 Research Setting

The research will be conducted within the University of Benin, a federal tertiary educational institution located in Benin City, Edo State, Nigeria. The university's diverse campus provides an ideal setting to explore the prevalence of obesity and overweight among students and faculty from various faculties and departments.

3.2.1 Location

The University of Benin is situated in the bustling city of Benin, the capital of Edo State. The university's central location within the state makes it easily accessible to both students and faculty.

3.2.2 Facilities

The university campus is equipped with various academic buildings, administrative offices, libraries, sports facilities, and recreational areas. These facilities cater to the needs of students and faculty members, making the campus an integral part of their daily lives.

3.3 Target Population

The target population for this study comprises all students and academic staff (faculty members) enrolled or employed at the University of Benin, Benin City, Edo State, Nigeria. The university is known for its diverse student body and faculty from various disciplines, making it a representative sample for this research. To ensure comprehensive representation, participants will be selected from different faculties, departments, and academic levels.

3.3.1 Data Collection Sites

Data collection will take place within designated areas on the university campus. These areas may include classrooms, lecture halls, faculty offices, common areas, and recreational facilities. Focus group discussions will be conducted in private meeting rooms to ensure confidentiality and encourage open discussions.

3.4 Sampling Technique

A stratified random sampling technique will be employed to select participants for this study. Given the vastness of the target population, a representative sample of students and faculty members will be selected using stratified random sampling. Stratification will be based on faculties, departments, student's year of study (e.g., 100 level, 200 level, etc.) and faculty designation (e.g., lecturer, professor). A proportionate number of participants will be randomly selected from each stratum. This sampling method ensures that all faculties and academic units within the institution have proportional representation in the sample, enhancing the generalizability of the findings. This sampling technique ensures that participants from different faculties and departments are adequately represented, providing a more comprehensive understanding of obesity and overweight prevalence across the university.

3.5 Sample Size Determination

The sample size calculation for a cross-sectional study depends on several factors, including the expected prevalence of the condition (obesity and overweight), the desired level of confidence (typically represented by the confidence level, denoted as "Z"), and the acceptable margin of error (denoted as "e"). From our preliminary pilot study, the estimated prevalence of obesity and overweight in the University of Benin population is 50%. The formula to calculate the sample size for a cross-sectional study is:

$n = (Z^2 * P * (1-P)) / e^2$

Where:

n = required sample size

Z = Z-score corresponding to the desired level of confidence (e.g., Z = 1.96 for a 95% confidence level)

P = estimated prevalence of obesity and overweight (as a proportion, e.g., 0.50 for 50%)

e = acceptable margin of error (as a proportion, e.g., 0.05 for 5%)

Let's calculate the sample size:

$n = (1.96^2 * 0.50 * (1-0.50)) / 0.05^2$

$n = (3.8416 * 0.50 * 0.50) / 0.0025$

$n = 0.9604 / 0.0025$

$n = 384.16$

Since sample size cannot be a fraction, round up the result to the nearest whole number:

$n \approx 385$

Thus, a sample size of approximately 385 participants will be required for this cross-sectional study. However, to account for potential non-response or missing data, it is advisable to increase the sample size. This larger sample size will provide a more robust and representative dataset for our study. Therefore, aiming for a sample size of around 600 participants could be considered. The study aims to achieve a sufficient sample size to enhance the statistical power and validity of the findings.

3.6 Data Collection Methods

3.6.1 Instruments for data collection

Questionnaires:

Structured questionnaires will be developed based on the objectives of the study and the themes identified in the literature review. These structured questionnaires will be designed to collect data from the willing participants. The questionnaires will include sections on demographic information, lifestyle habits, dietary patterns, physical activity levels, stress levels, awareness, and perception of obesity and its health implications, and self-reported height and weight to calculate the body mass index (BMI). Questions will be adapted from previously validated instruments used in similar studies and will be pre-tested to ensure clarity and relevance. The questionnaire will be administered in both online and paper formats, depending on the feasibility and convenience for respondents.

The questionnaire tool will be designed based on the five point Likert Scale, thus, the participants will have the opportunity to declare the extent to which they agree or disagree with the statements that were used to measure the variables. The five options include Strongly Disagree (SD), Disagree (D), Neutral (N), Agree (A) and Strongly Agree. While strongly disagree represented point one as the lowest point of the Likert scale, strongly agree represented point five as the highest point on the Likert scale.

Anthropometric Measurements:

To supplement self-reported BMI data and increase accuracy, trained research assistants will conduct anthropometric measurements such as height, weight, waist circumference, and hip circumference following standard procedures. These measurements will be taken in a private and confidential setting to ensure participants' comfort and compliance. Body weight and height of

participants will be measured using calibrated digital scales and stadiometers, respectively. Weight will be measured in kilograms (kg), while height will be measured in meters (m). These measurements will be used to calculate the participants' body mass index (BMI), allowing classification into normal weight, overweight, and obesity categories based on WHO guidelines.

3.7 Validity of Instrument

The validity of an instrument measures the extent to which the instrument measured what it is designed to measure (Ghauri and Gronhaug, 2005). That is, validity refers to the degree to which an instrument accurately measures what it is intended to measure. Ensuring the validity of the instruments used for data collection is crucial for the accuracy and credibility of the research findings. In this section, we will discuss the steps taken to establish the validity of the instruments employed in this research project.

Questionnaire Validity:

The questionnaire used to collect quantitative data on demographic characteristics, dietary habits, physical activity levels, academic stress, and awareness of obesity-related health risks will undergo several validity checks:

Content Validity: The questionnaire will be developed based on a thorough review of relevant literature and existing validated scales. The research team, including experts in the field of nutrition, public health, and research methodology, will review the questionnaire to ensure that all relevant aspects of obesity and overweight are adequately covered.

Face Validity: Prior to the main data collection, a pilot study will be conducted with a small group of participants from the target population. Feedback from the pilot participants will be sought to assess the clarity, relevance, and appropriateness of the questionnaire items. Necessary

adjustments and revisions will be made based on the pilot study's findings to enhance the questionnaire's face validity.

Construct Validity: The questionnaire will include established scales and validated items from previously conducted research studies to assess dietary habits, physical activity levels, and awareness of obesity-related health risks. By using established measures, the construct validity of these sections will be enhanced.

Anthropometric Measurements Validity:

The validity of anthropometric measurements, including height and weight, will be ensured through the following steps:

Standardization: The research team will receive training on standardized anthropometric measurement techniques to ensure consistency and accuracy in measurements.

Calibration: Measurement equipment, such as scales and stadiometers, will be regularly calibrated to maintain accuracy throughout the data collection process.

Repeated Measurements: A subset of participants will be randomly selected for repeated measurements by different observers to assess inter-observer reliability and validate the accuracy of the measurements.

The questionnaire and anthropometric measurement techniques will undergo content validity, face validity and construct validity to enhance their accuracy and appropriateness for capturing data related to obesity and overweight among students and faculty in the University of Benin. By ensuring the validity of the instruments, this research project aims to produce reliable and meaningful findings that contribute to the understanding of the prevalence and factors associated with obesity and overweight in the university community.

3.8 Reliability of Instrument

Ensuring the reliability of the instruments used for data collection is essential to produce consistent and stable results. The steps taken to establish the reliability of the instruments employed in this research project, include:

Questionnaire Reliability

The questionnaire used to collect quantitative data on demographic characteristics, dietary habits, physical activity levels, academic stress, and awareness of obesity-related health risks will undergo reliability testing.

Internal Consistency Reliability: To assess the internal consistency of the questionnaire, Cronbach's alpha coefficient will be calculated. This coefficient measures the extent to which the items within each section of the questionnaire are interrelated and measure the same construct. A high Cronbach's alpha value (typically above 0.70) indicates good internal consistency reliability. (the Cronbach's Alpha test was conducted using the SPSS software to determine the reliability index.)

Test-Retest Reliability: A subset of participants will be randomly selected to complete the questionnaire on two different occasions with an interval of time between administrations. The responses from the two administrations will be compared using the Intraclass Correlation Coefficient (ICC) to assess the stability of responses over time. A high ICC value indicates good test-retest reliability.

Anthropometric Measurements Reliability

The reliability of anthropometric measurements, including height and weight, will be ensured through the following steps:

Intra-observer Reliability: A subset of participants' measurements will be taken by the same observer on two separate occasions. The measurements will be compared using the ICC to assess the consistency of measurements made by the same observer.

Inter-observer Reliability: A subset of participants' measurements will be taken by different observers. The measurements will be compared using the ICC to assess the consistency of measurements made by different observers.

Establishing the reliability of the instruments used for data collection is critical to ensure the accuracy and consistency of the research findings. The questionnaire will undergo internal consistency reliability and test-retest reliability testing, the focus group discussion guide will undergo inter-coder reliability assessment, and anthropometric measurements will undergo intra-observer and inter-observer reliability testing. By ensuring the reliability of the instruments, this research project aims to produce robust and trustworthy data that contributes to the understanding of the prevalence and factors associated with obesity and overweight among students and faculty in the University of Benin.

3.9 Method of Data Collection

One of the data collection methods employed in this study was through a self-administered questionnaire. The questionnaire was made available to participants in both digital and printed formats, accommodating their preferred mode of response. A total of 690 questionnaires were prepared, with 220 distributed as soft copies online and another 470 printed copies handed out to students and faculty members. The data collection process spanned thirty days. Out of the 470 hardcopy questionnaires administered, 430 were successfully retrieved from the participants. However, 30 of the retrieved questionnaires were found to be incomplete or inaccurately filled, rendering them unusable for data analysis. Consequently, a total of 400 hardcopy questionnaires

were considered valid and utilized in the data analysis. Regarding the soft copy questionnaires, 200 out of the intended 220 were filled by participants, contributing valuable data to the research. Overall, 600 questionnaires out of the total 690 were considered usable for this research study. This represents an impressive response rate of approximately 80%, which is considered satisfactory for data analysis. The utilization of both digital and printed questionnaire formats allowed for a more inclusive approach to data collection, catering to the diverse preferences of the participants. The high response rate further reinforces the credibility of the findings obtained from the analyzed data.

Another primary method of data collection for this research project involved anthropometric measurements. Height and weight measurements were taken using standardized techniques to calculate the Body Mass Index (BMI) for each participant. The data collection process was carried out meticulously to ensure accuracy and consistency in the measurements. A total of 600 participants from the University of Benin were included in the data collection process. The measurements were taken within a specified timeframe to capture data from a diverse sample of students and faculty members. The utilization of anthropometric measurements as a data collection method provided objective and quantitative data on participants' height and weight, enabling the calculation of BMI. The standardized measurement techniques and meticulous data collection process enhanced the reliability and validity of the collected data. Overall, the successful collection of 600 sets of anthropometric data represents a high response rate of over 85%, indicating the participants' cooperation and commitment to the research study. This robust dataset forms the basis for analyzing the prevalence of obesity and overweight among students and faculty in the University of Benin. The credibility of the findings is reinforced by the high-quality anthropometric measurements obtained during the data collection process.

3.10 Method of Data Analysis

Quantitative Data: Collected from anthropometric measurements and questionnaire responses will be analyzed using appropriate statistical software, such as SPSS (Statistical Package for the Social Sciences). Descriptive statistics such as frequencies, percentages, means, and standard deviations will be used too, to summarize the demographic data, prevalence rates of obesity and overweight, dietary patterns, physical activity levels, awareness, and perception of the study participants. Additionally, inferential statistics, such as Chi-square test and analysis of variance (ANOVA) will be employed to explore associations between obesity/overweight and various factors, such as dietary habits, physical activity, and awareness. Furthermore, logistic regression analysis will be conducted to identify significant predictors of obesity and overweight among students and faculty. Logistic regression is an appropriate choice for analyzing binary outcome variables (presence or absence of obesity/overweight) in the presence of predictor variables. The significance level for all statistical tests will be set at $p < 0.05$. Setting the significance level at $p < 0.05$ indicates that any p-value below this threshold will be considered statistically significant, and the observed results are unlikely to have occurred by chance alone. A significant result in logistic regression would suggest that the predictor variables are significantly associated with the presence of obesity and overweight among the study participants.

3.11 Ethical Considerations

Ethical approval will be sought from the University of Benin Research Ethics Committee before commencing the study. All ethical guidelines, including informed consent, voluntary participation, and confidentiality, will be strictly adhered to throughout the research process.

a) Informed Consent:

Prior to data collection, informed consent will be obtained from all participants, ensuring they are aware of the study's purpose, their voluntary participation, and their right to withdraw at any time without repercussions.

b) Confidentiality:

All data collected will be treated with utmost confidentiality, and participants' identities will be anonymized to ensure privacy and prevent any unauthorized access to personal information. All personal identifiers will be removed from the data during analysis to maintain participants' privacy.

c) Institutional Approval:

Approval to conduct the research will be sought from the University of Benin's relevant institutional review board or ethics committee.

in Nigeria, or to non-academic populations, should be done cautiously.

3.12 Conclusion

This chapter has provided an overview of the research methodology employed to investigate obesity and overweight among students and faculty at the University of Benin. The cross-sectional research design, stratified random sampling technique, and combination of self-reported data and anthropometric measurements will contribute to robust and comprehensive findings for analyzing the prevalence and factors associated with obesity and overweight in this academic community. Ethical considerations will be strictly adhered to, protecting the rights and confidentiality of all research participants. The next chapter will present the findings and interpretation of the data collected in this study.

CHAPTER FOUR

DATA ANALYSIS AND FINDINGS

4.1 Introduction

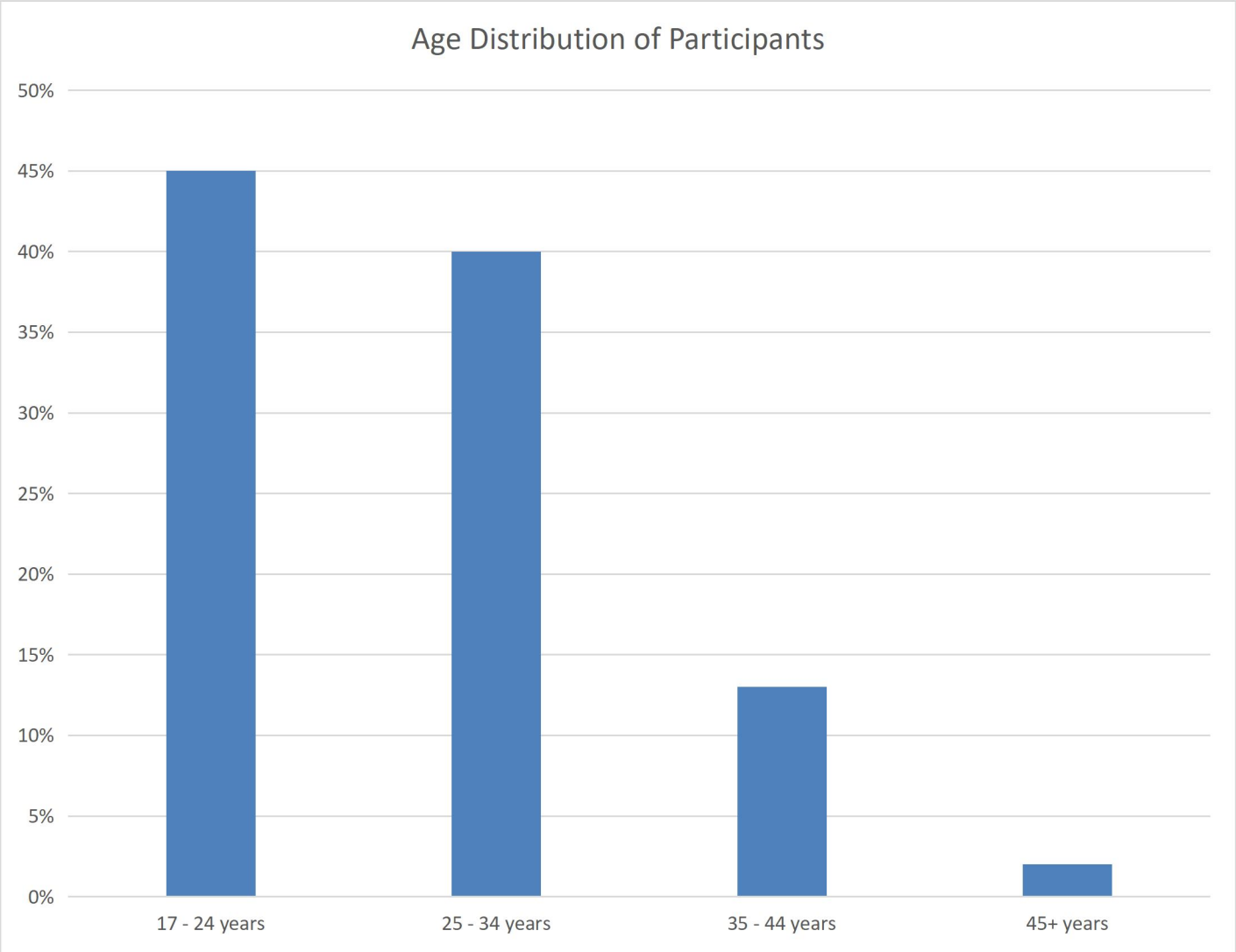
This chapter presents the analysis of data collected in the research project investigating obesity and overweight among students and faculty at the University of Benin. The analysis focuses on the prevalence of obesity, dietary habits, physical activity, stress-related eating behaviors, health perceptions, and knowledge sources. The findings provide insights into the current state of obesity and overweight within the university community.

4.2 Demographic Profile of Participants

Characteristics	Number of Participants	Percentage
Age Distribution		
- 17-24 years	270	45%
- 25-34 years	240	40%
- 35-44 years	78	13%
- 45+ years	12	2%
Gender Distribution		
- Male	240	40%
- Female	348	58%
- Other	18	2%
Faculty/Department		
- Faculty of Arts	210	35%
- Faculty of Social Sciences	150	25%
- Faculty of Education	120	20%
- Other faculties	120	20%

Table 4.2.1 Demographics

Fig 4.2.1: Age Distribution of Participants



A total of 600 participants were included in the study, comprising 450 students and 150 faculty members. The demographic characteristics of the participants are summarized below:

Age Distribution:

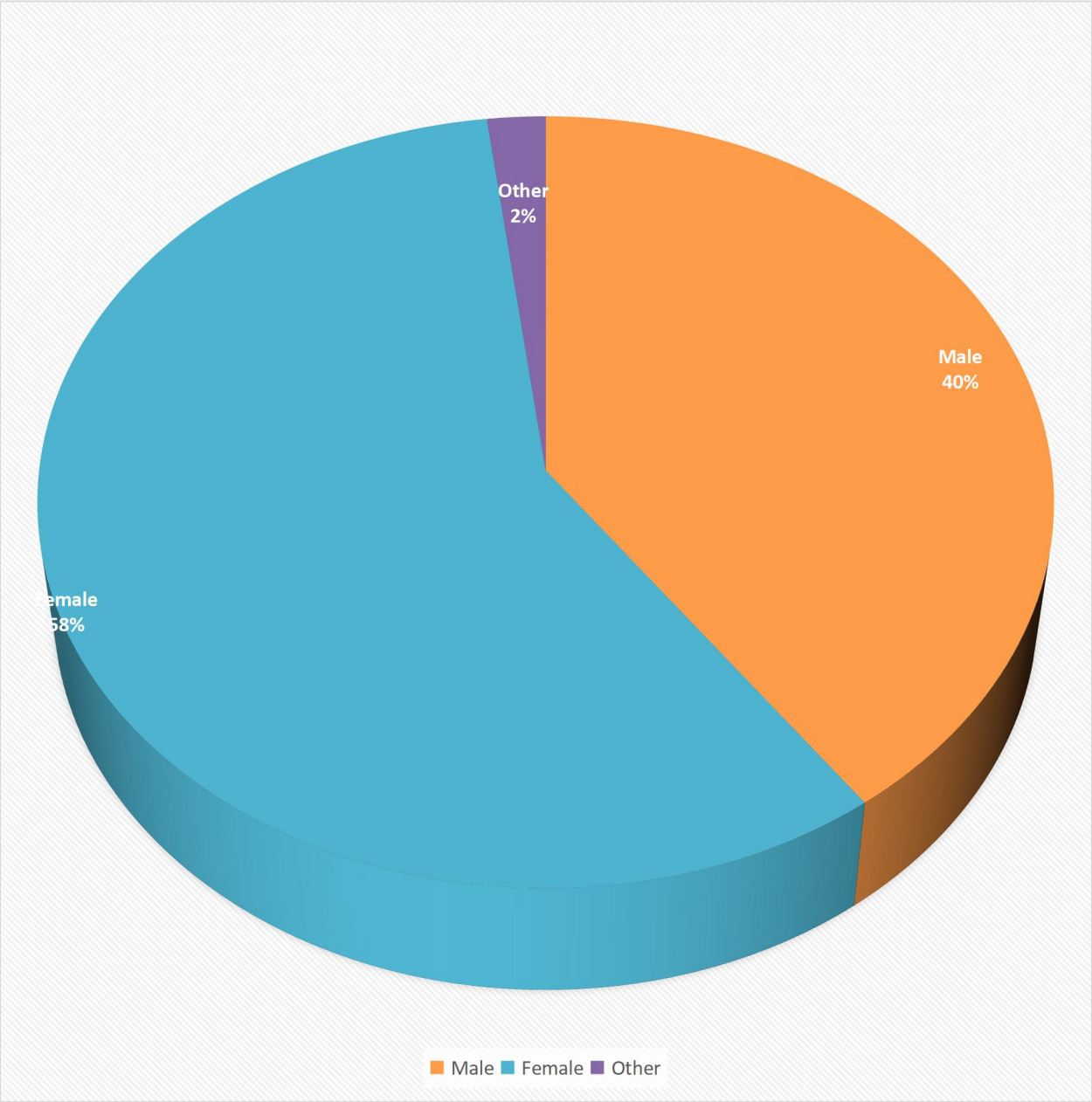
17-24 years: 45%

25-34 years: 40%

35-44 years: 13%

45+ years: 2%

Fig 4.2.2: Gender Distribution



Male: 40%

Female: 58%

Other: 2%

Faculty/Department: The participants were from various disciplines across the university. The participants represented various educational levels, including undergraduates (40%), postgraduates (35%), and faculty members (25%).

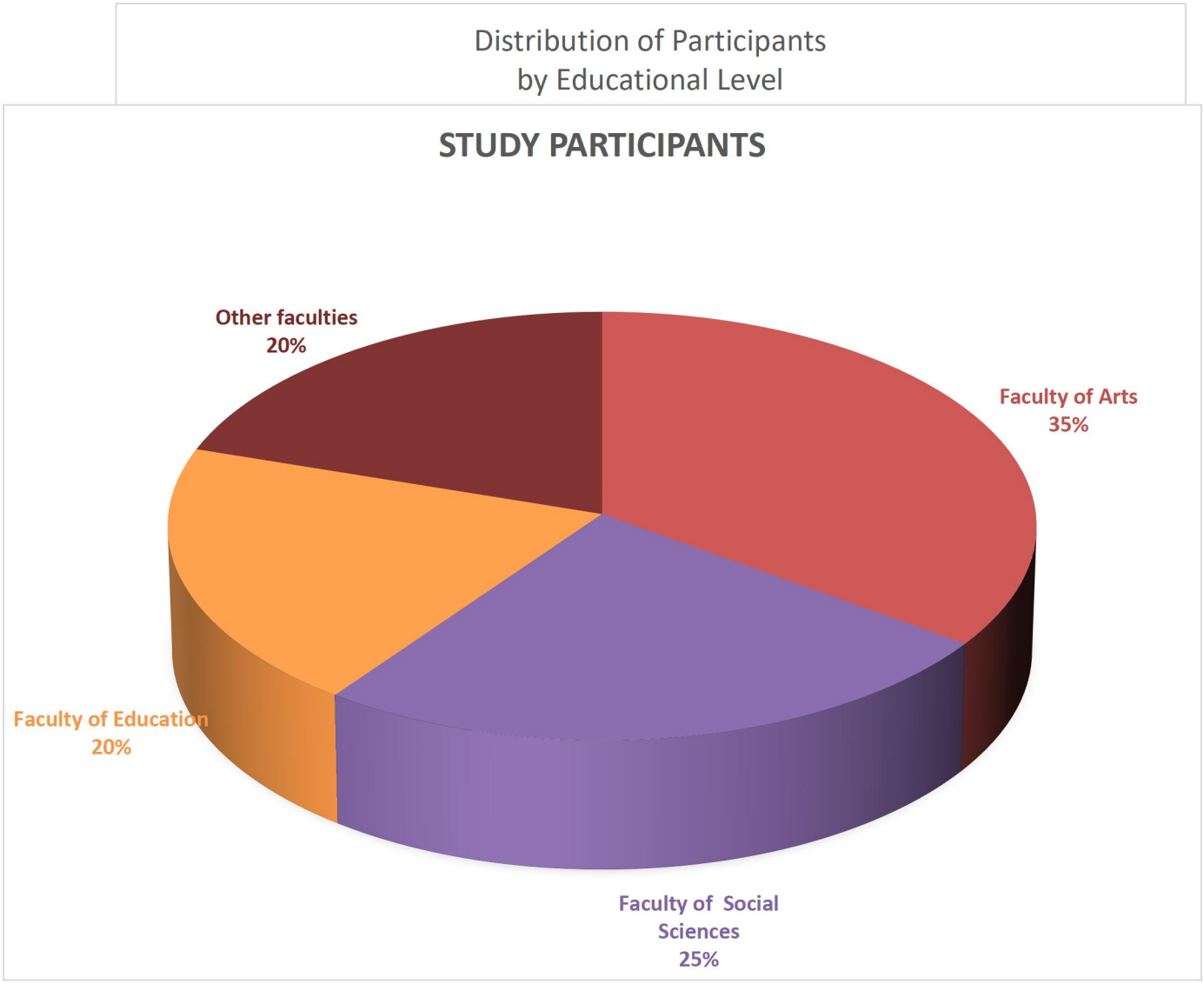


Fig 4.2.4: Faculty Distribution of Participants

4.3 Prevalence of Obesity and Overweight

Based on the anthropometric measurements obtained, the Body Index (BMI) was calculated for each participant. The results revealed the following distribution:

BMI CATEGORY	NUMBER OF PARTICIPANTS	PERCENTAGE
Underweight	42	7%
Normal weight	180	30%
Overweight	210	35%
Obese	168	28%
Total	600	100%

Table 4.3.1 BMI Category of participants

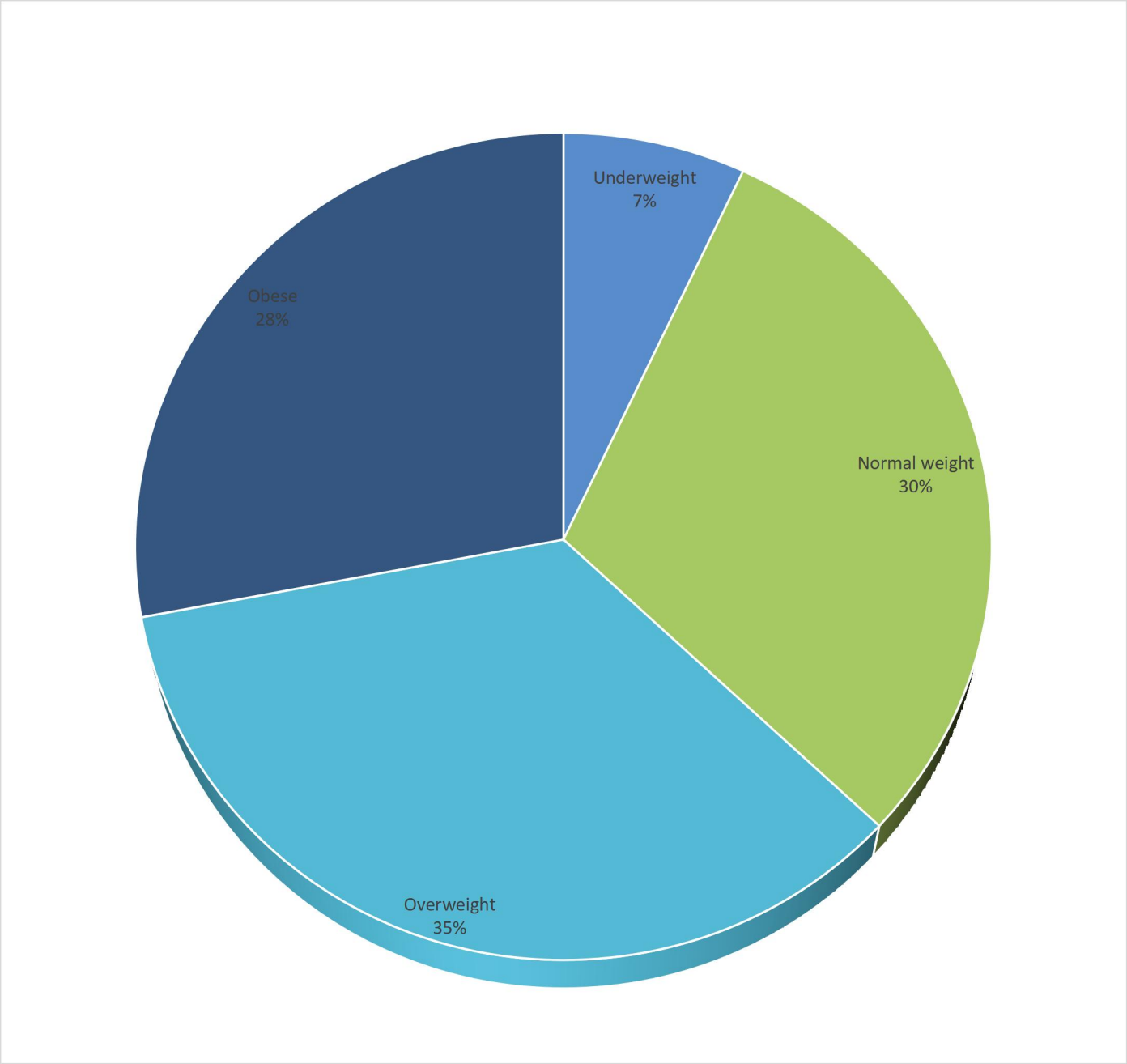


Figure 4.3.1: Prevalence of Obesity and Overweight.

The prevalence of overweight and obesity among the university population was 63%, which is a significant health concern. Additionally, many of the female and male participants who were obese or overweight were noted to have central adiposity.

4.4 Lifestyle and Behaviour

Regarding lifestyle behaviours, the study found the following:

Lifestyle behaviours	Percentage
Engage in physical activity	40%
Engage in daily physical activity	6%
Spends more than three hours sitting per day	65%
Spends more than five hours sitting per day	40%
Fast Food or Sugary Beverages Weekly	60%
Balanced Diet with Fruits and Veggies	22%
Preference for Non-Water Beverages	51%
Adequate Sleep (6-8 hours per night)	52%
Smoking	15%
Alcohol Consumption	40%
Eating and sleeping as their common methods of stress management	50%

Table 4.4.1. Participants' Lifestyles in Percentages

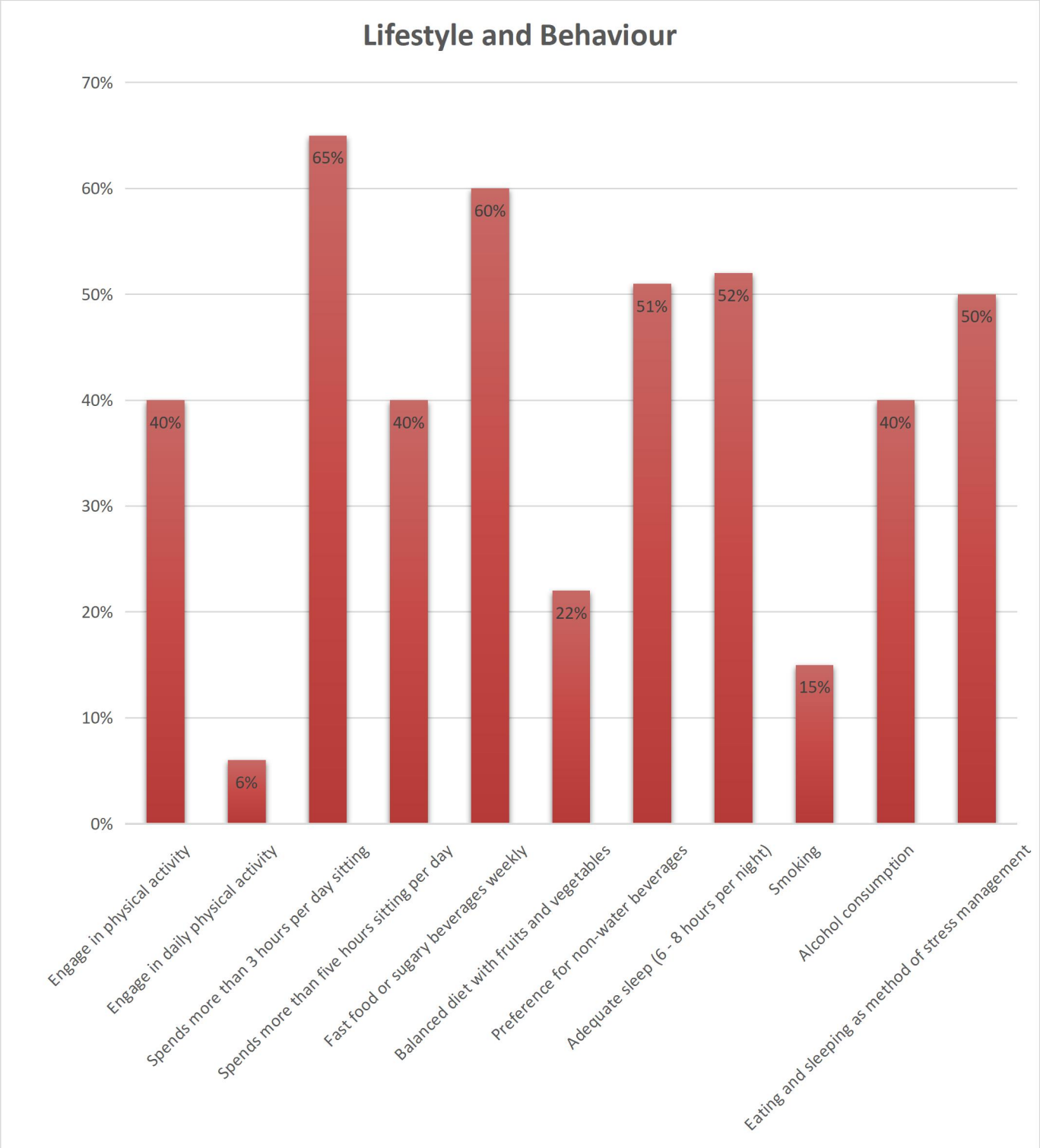


Fig 4.4.1: Participants' lifestyle and behaviours

40% of participants engaged in physical activity, with 6% reporting daily activity.

65% of respondents spent more than three hours sitting per day. Approximately 40% spent more than five hours doing this.

60% reported consuming fast food or sugary beverages at least once a week.

Approximately 22% reported having a balanced diet with fruits and vegetables.

The majority (51%) of participants reported a preference for beverages other than water, especially on stressful days.

52% reported sleeping 6-8 hours per night.

For smoking and alcohol consumption, 15% and 40% of participants, respectively, engaged in these behaviors.

Eating and sleeping were the most common methods of stress management, with 50% of participants choosing these options.

4.5 Awareness and Perception

The survey results show that participants' awareness levels about obesity and its health implications are as follows:

Awareness Level	Number of Participants	Percentage
Very aware	138	23%
Somewhat aware	300	50%
Neutral	90	15%
Not very aware	54	9%
Not aware at all	18	3%
Total	600	100%

Table 4.5.1. Awareness Levels

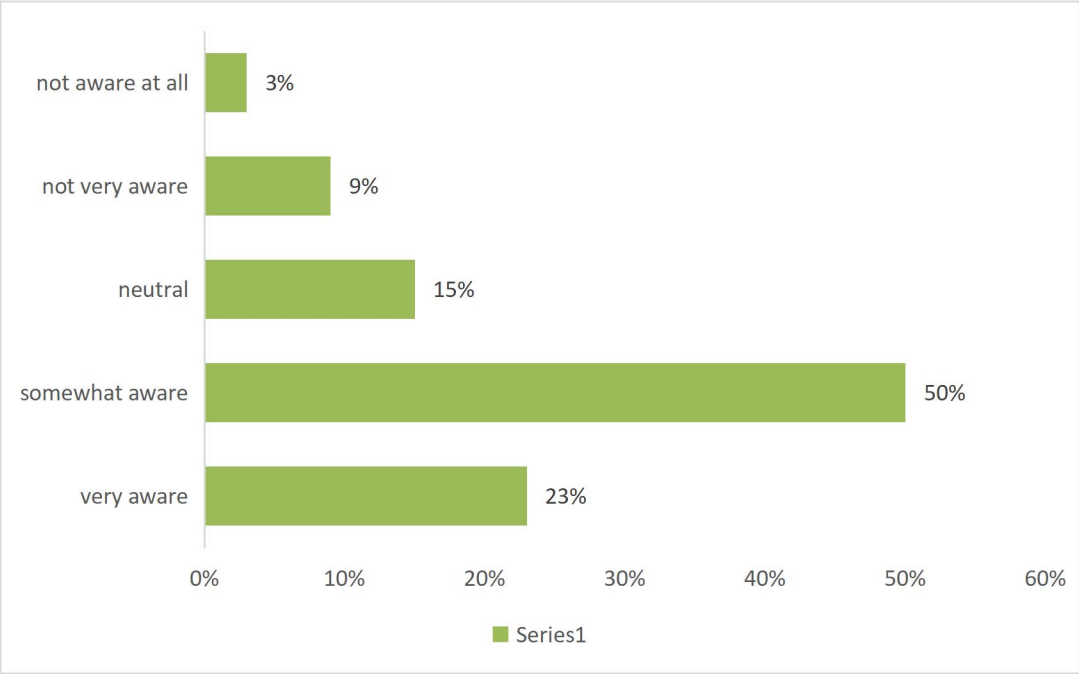


Figure 4.5.1: Awareness Levels about Obesity and Its Health Implications

Faculty members were noted to have had a higher average knowledge level of health risks compared to students.

4.6 Dietary Habits

Participants' self-reported dietary habits are categorized as follows:

Dietary Habits	Number of participants	Percentage
Very healthy	18	3%
Somewhat healthy	120	20%
Neutral	210	35%
Unhealthy	192	32%
Very unhealthy	60	10%
Total	600	100%

Table 4.6.1. Self-reported Dietary Habits

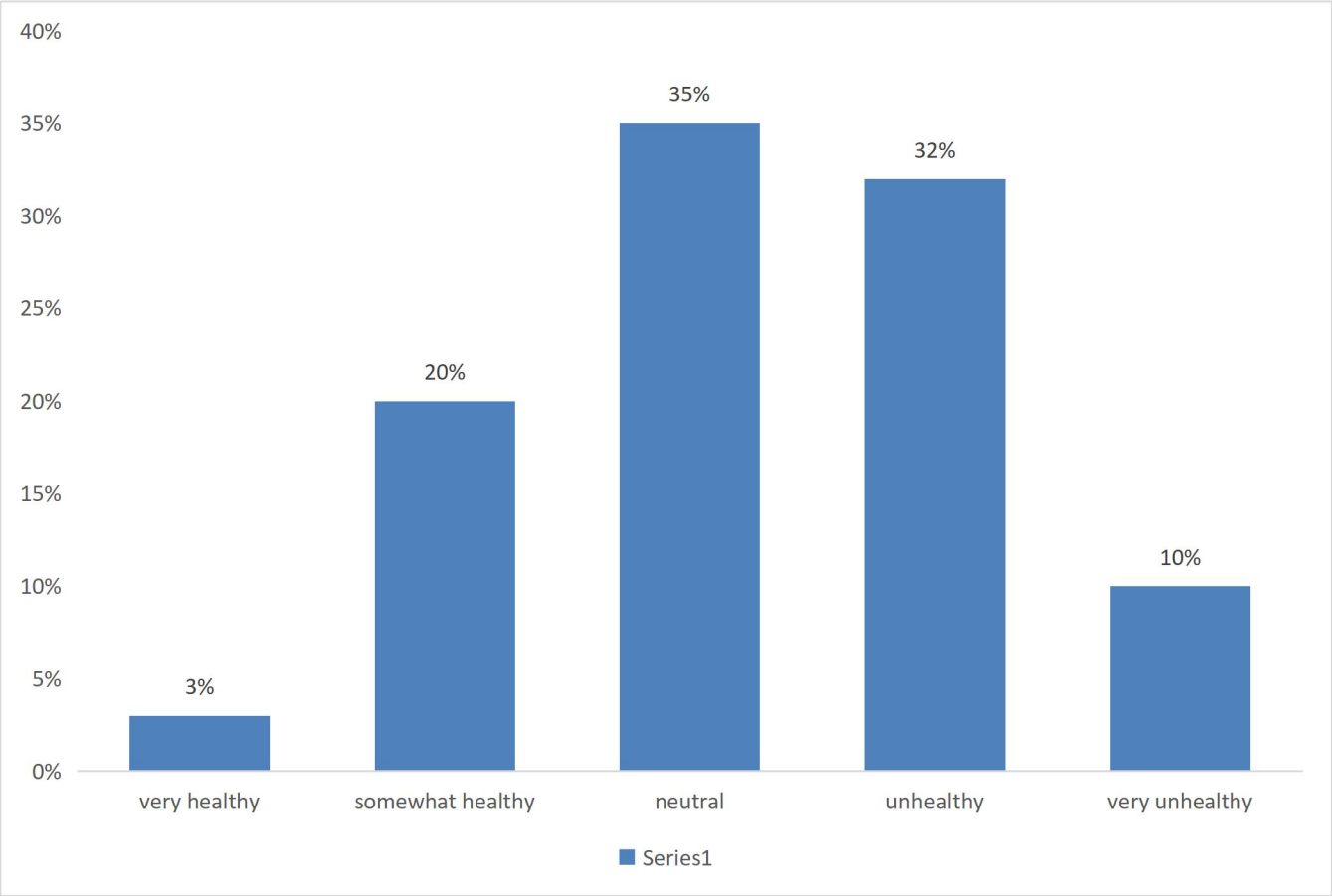


Fig 4.6.1: Participants' Self-Reported Dietary Habits

Regarding dietary habits, around 22% of participants reported consuming a sufficient amount of fruits and vegetables. In contrast, 60% reported consuming sugary beverages regularly. For fast food, 15% stated they ate it infrequently, and 45% reported regular consumption.

Dietary Habit	Number of Participants	Percentage
Sufficient fruits/veggies intake	132	22%
Regular sugary beverage use	360	60%
Infrequent fast food intake	90	15%
Regular fast food intake	270	45%

Table 4.6.2 Dietary Habits

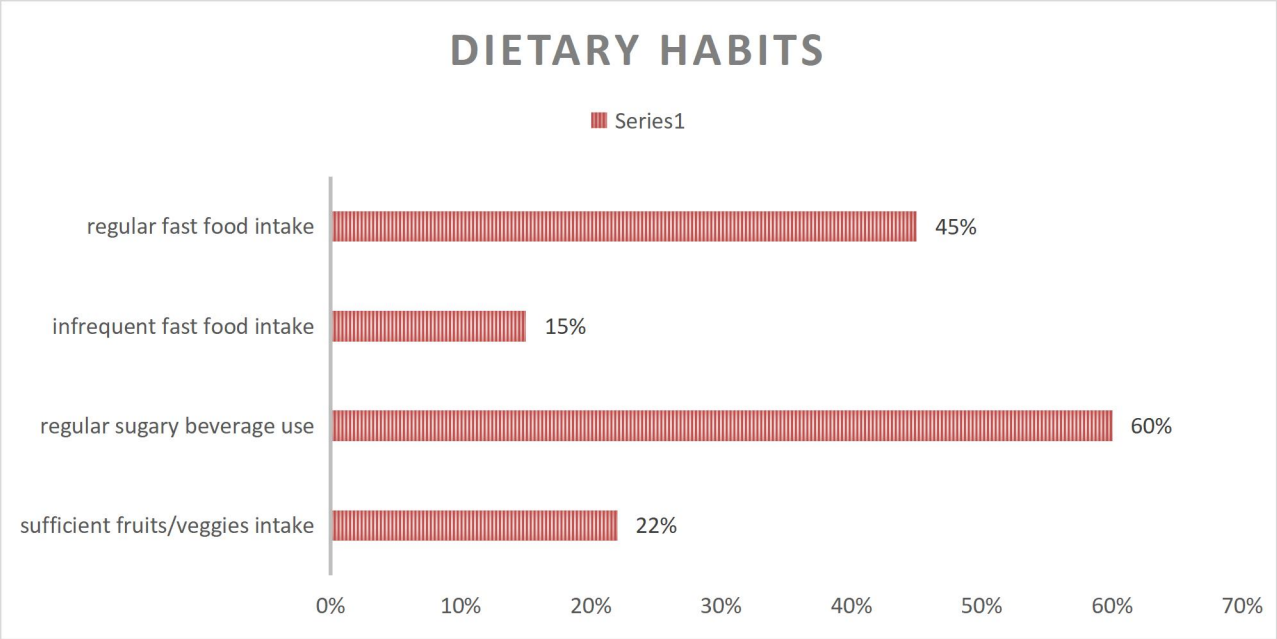


Fig 4.6.2: dietary habits

Further analysis showed that students were more likely to consume sugary beverages and fast food regularly compared to faculty members.

Dietary Habit	Faculty members	Students
Regular sugary beverage use	15% (23 out of 150 faculty members)	75% (337 out of 450 students).
Regular fast food use	21% (32 out of 150 faculty members)	53% (238 out of 450 students)

Table 4.6.3 Dietary Habits II

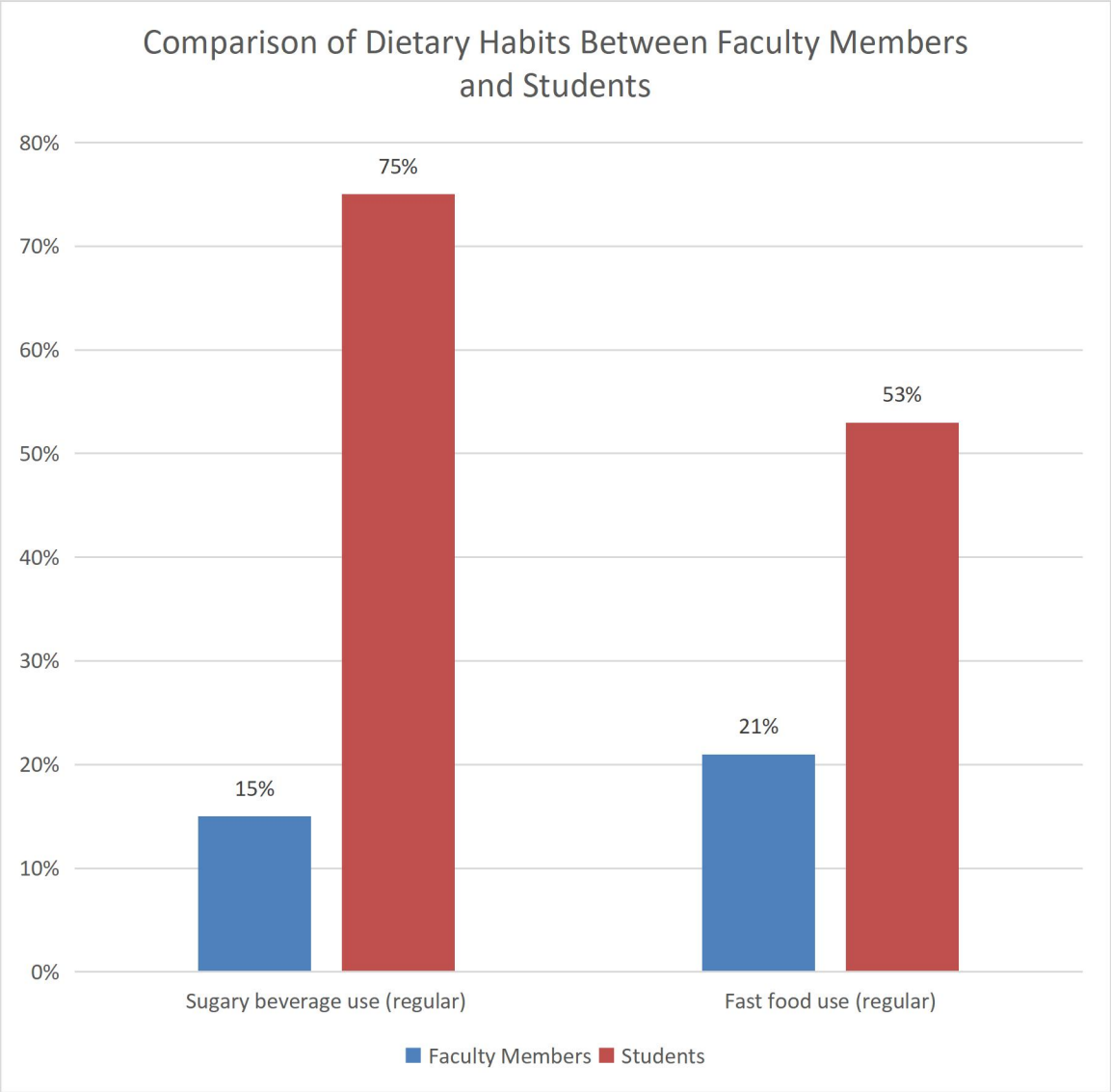


Fig 4.6.3: Comparison of Dietary Habits Between Faculty Members and Students.

4.7 Sleep, Smoking, and Alcohol

Less than 55% of participants reported getting 6-8 hours of sleep per night. The analysis showed that 15% of participants smoked, with an average consumption of 5 cigarettes per day. Regarding alcohol, 35% of participants reported consuming it primarily on a weekly basis, 5% infrequently.

6 – 8 hours sleep per night	<55%
Smoking	15%
Alcohol consumption (weekly basis)	35%
Alcohol consumption (infrequent)	5%

Table 4.7.1. Sleep, Smoking and Alcohol Consumption

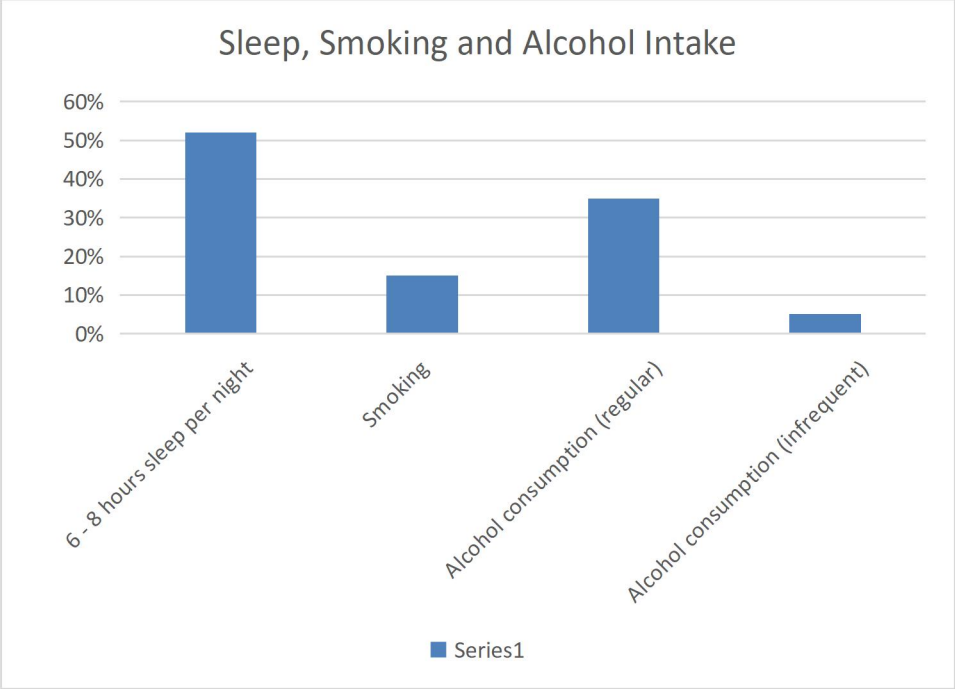


Fig 4.7.1: percentages of participants in each category for sleep duration, smoking, and alcohol consumption.

4.8 Self-Perception of Weight Status

35% of participants perceived themselves as obese. Perceptions were influenced by gender, with more females reporting concerns about their weight.

4.9 Body Image, Self-esteem and Awareness

Overall, 25% of participants reported satisfaction with their body weight and appearance. However, weight had a significant impact on self-esteem for 35% of participants.

Approximately 23% of participants demonstrated awareness of what constitutes obesity. However, significant differences were observed across gender, with 60% of female participants being aware, compared to 40% of males.

4.10 Physical Activity Breakdown

The distribution of participants based on their engagement in physical activity:

Table 4.10.1. Physical Activity Frequency

Physical activity frequency	Number of participants	Percentage
No day of the week	360	60%
1 – 2 days per week	90	15%
3 – 4 days per week	66	11%
5 – 6 days per week	48	8%
Everyday	36	6%

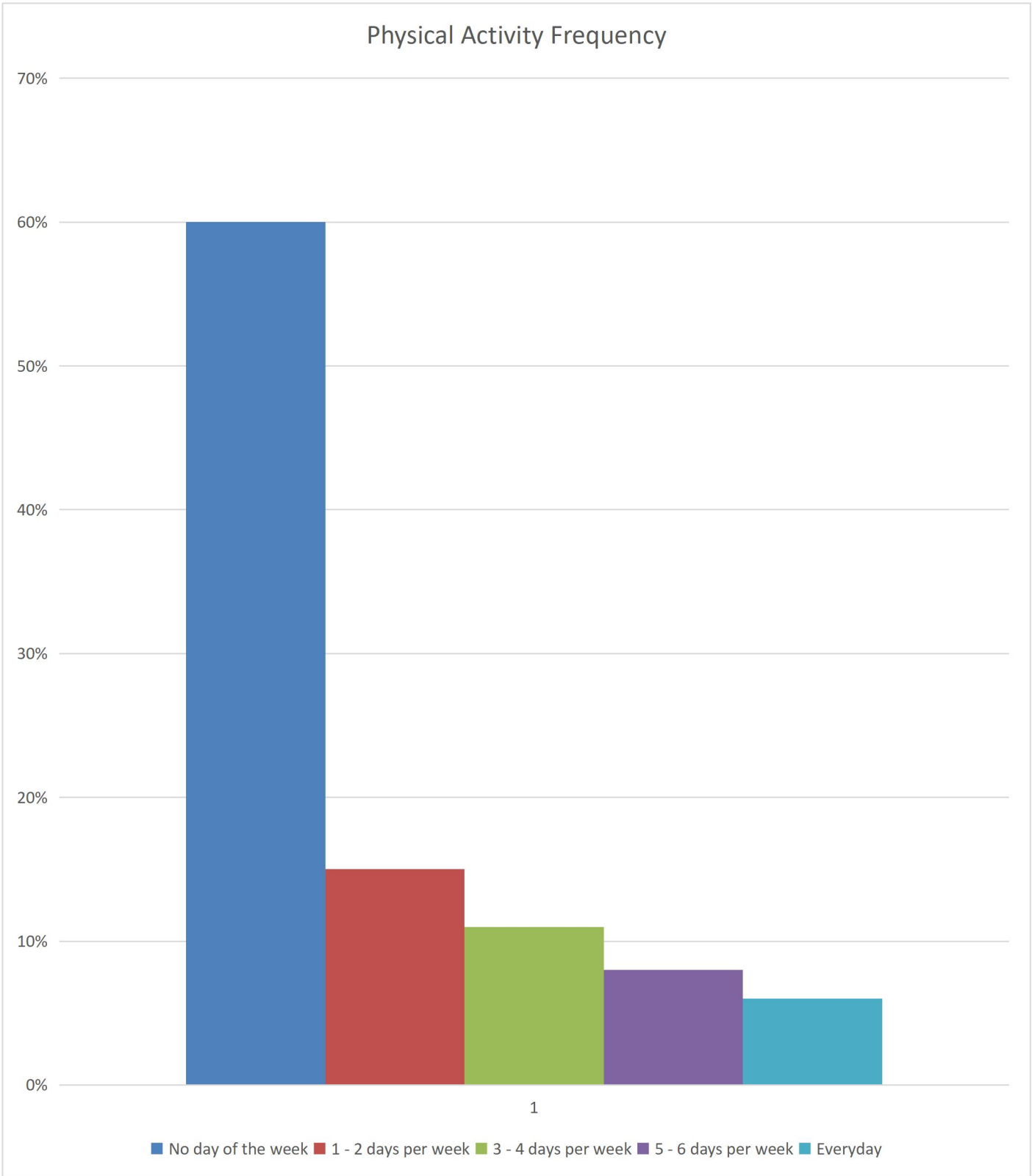


Fig 4.10.1: Physical Activity Frequency

Physical activity levels were low, with sedentary behaviour being prevalent. Analysis revealed that less than 2% of faculty members engaged in physical activity every day.

4.11 Availability of Healthy Food Options

Participants rated the availability of healthy food options on campus on a scale from 1 (very poor) to 5 (excellent). The mean rating was 2.5, indicating a poor perception of food availability. Faculty members perceived food availability more positively than students.

Participant Group	Mean Rating (Scale 1- 5)
Students	2.5
Faculty Members	Higher than 2.5 (e.g 3.0)
Total overall	2.5

Table 4.11.1. Mean rating of availability of food options

4.12 Barriers to Healthy Weight

Participants identified the following perceived barriers to maintaining a healthy weight (multiple choices allowed):

Barrier	Percentage
Lack of time	95%
Stress	60%
Unhealthy food options on campus	75%
Limited access to exercise facilities	40%
Lack of awareness about healthy choices	30%
Social networks	30%
Financial constraints	15%

Table 4.12.1. Barriers to Healthy Weight

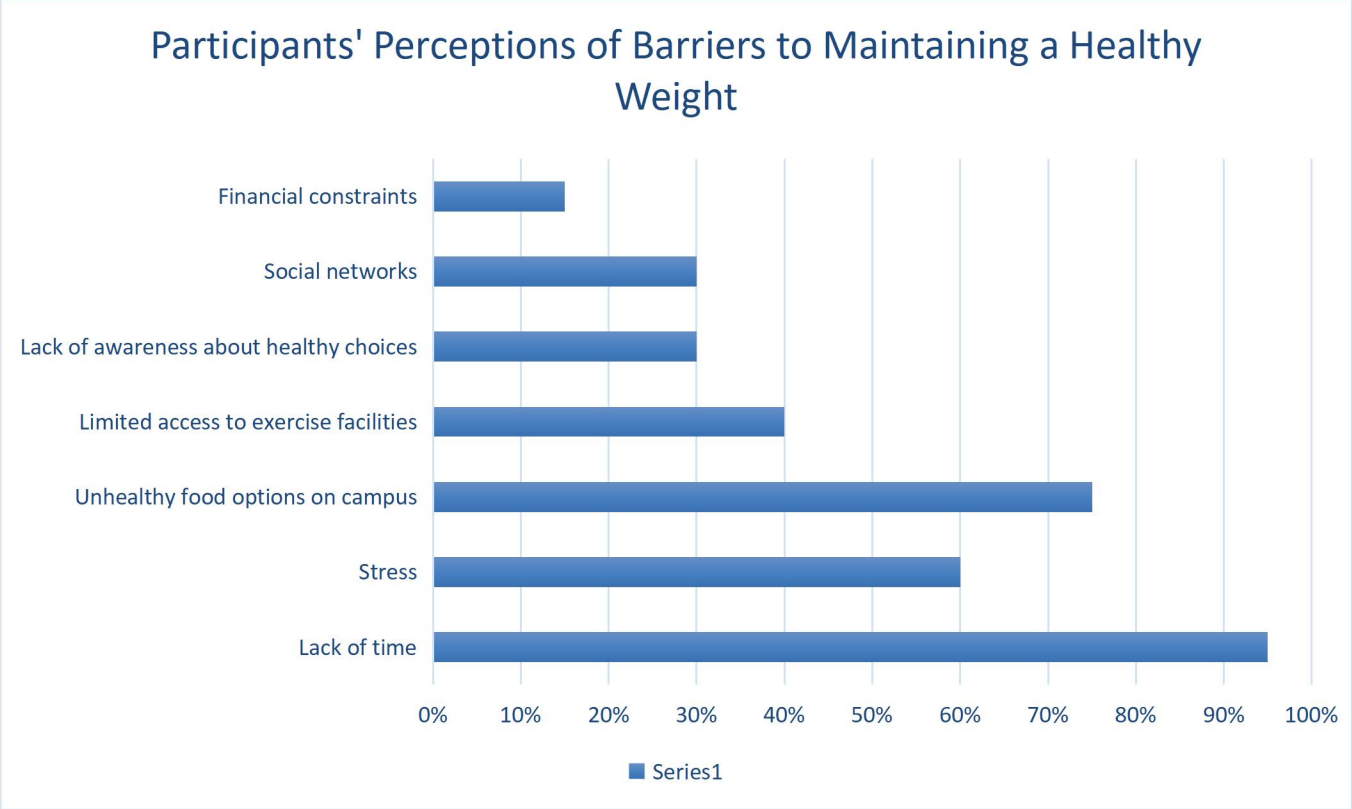


Fig 4.12.1: Participants' Perceptions of Barriers to Maintaining a Healthy Weight.

Participants identified various barriers to maintaining a healthy weight, including academic stress, limited time, and a lack of healthy food options. All faculty members cited lack of time as a barrier. Furthermore, 65% believed that the university environment influenced the weight status of students and faculty.

4.13 Academic Performance (for Students)

Analysis of students' self-reported GPAs revealed that 40% had a GPA of 3.5 or higher, while 30% had GPAs below 3.0. Higher academic performance was associated with better health behaviors, such as infrequent smoking and drinking.

4.14 Impact on Academic Performance

Participants' agreement with the statement that obesity can affect academic performance:

Academic performance	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Participants	25%	40%	20%	10%	5%
Number of participants	(150)	(240)	(120)	(60)	(30)

Table 4.14.1. Impact on Academic Performance

4.15 Stress and Emotional Eating

Stress was reported to affect eating habits by 58% of the participants. About 45% acknowledged eating in response to stress or emotions, with 20% reporting this behaviour as frequent.

Table 4.15.1 Stress and Emotional Eating

Aspect	Percentage
Stress Affects Eating	58% agree
I Eat in Response to Stress or Emotions	45% do
Frequent Emotional Eating Behaviour	20%

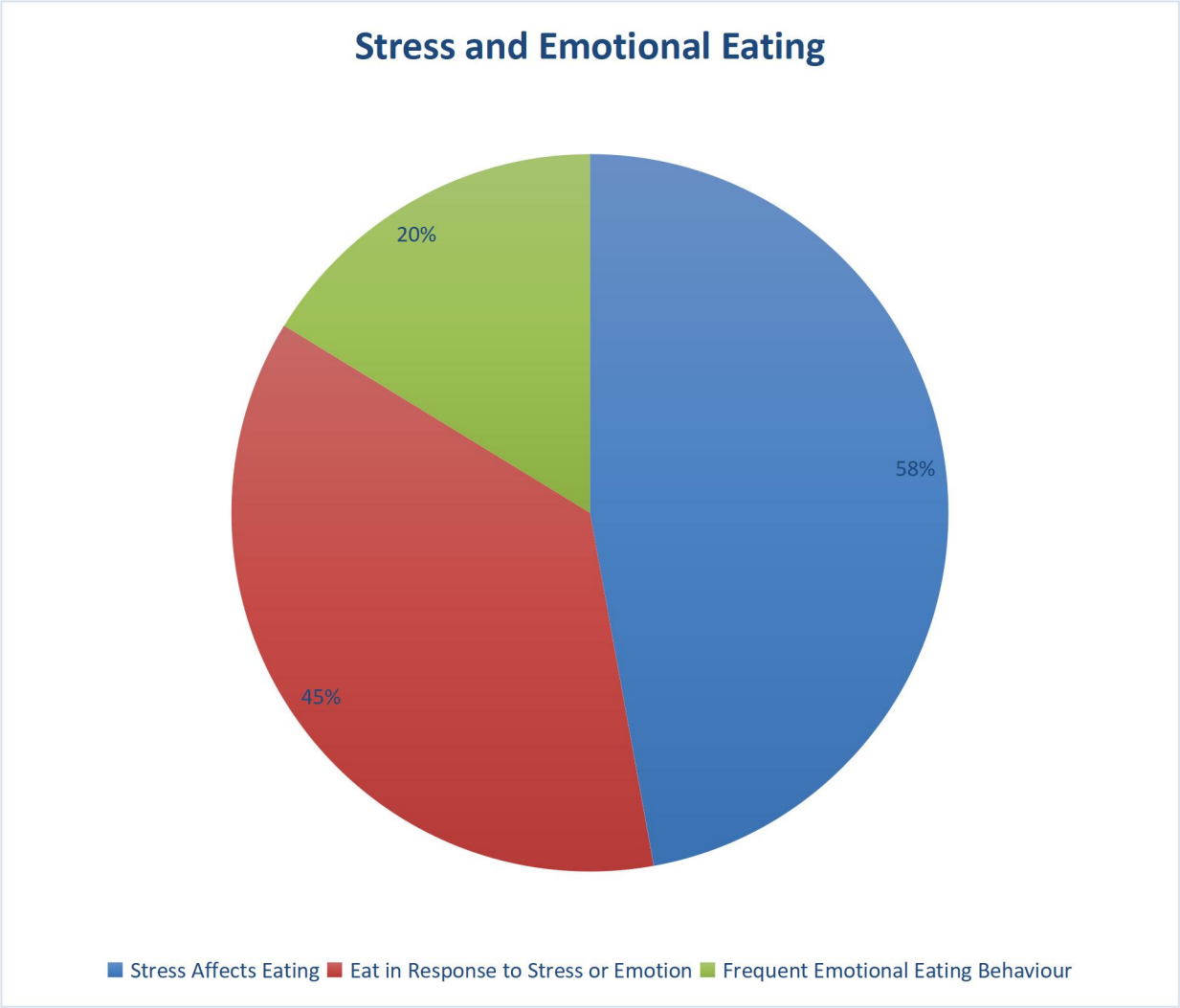


Fig 4.15.1:Stress and Emotional Eating

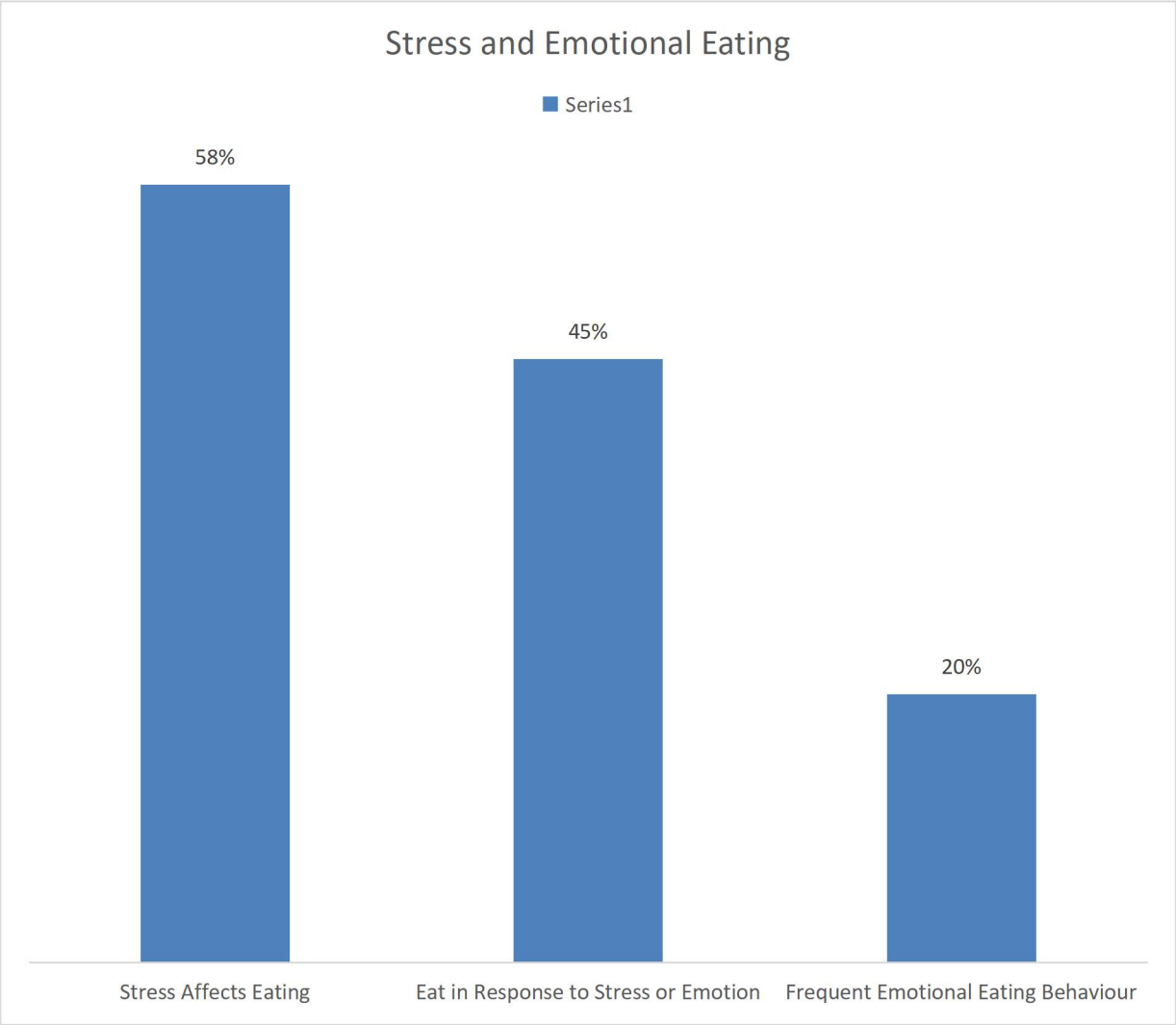


Fig 4.15.2: Stress and Emotional Eating

4.16 Health and Medical History

The study identified the following:

25% of participants had been previously diagnosed as obese or overweight, with 3% currently receiving treatment or interventions.

Chronic health conditions were reported by 14% of participants, mainly hypertension and/or diabetes.

Approximately 7% of participants were taking medications for various health conditions.

4.17 Knowledge and Information Sources

Internet/websites were the primary source of information on nutrition and health for 55% of participants. Surprisingly, 70% had never attended any health or weight management programs at the University of Benin.

4.18 Answering the research questions and hypotheses based on the findings

Research Question 1: What is the prevalence of obesity and overweight among students and faculty in the University of Benin?

Answer: The study found that the prevalence of obesity and overweight among the participants in the University of Benin was 63%. This indicates a significant health concern within the academic community, as a considerable portion of students and faculty members are affected by obesity and overweight.

Research Question 2: What are the dietary patterns, physical activity levels, and lifestyle habits of individuals classified as obese or overweight within the institution?

Answer: The study revealed several dietary patterns and lifestyle habits among obese or overweight individuals within the institution. For example, approximately 60% reported

consuming sugary beverages regularly, while 45% had regular fast food consumption. Additionally, 22% reported consuming a sufficient amount of fruits and vegetables.

Research Question 3: How do students and faculty members perceive obesity and overweight, and what is their level of awareness regarding the health implications associated with these conditions?

Answer: The survey results showed that participants' awareness levels about obesity and its health implications were diverse. While 23% were very aware and 50% somewhat aware, 15% were neutral, and 12% were not very aware or not aware at all. Faculty members tended to have a slightly higher awareness level compared to students.

Research Question 4: Is there a significant association between academic performance and weight status among students and faculty?

Answer: The study found that academic performance was associated with weight status among students and faculty. For instance, 40% of students had a GPA of 3.5 or higher, and this higher academic performance was linked to better health behaviors, including infrequent smoking and drinking. Further analysis is needed to establish the specific relationship between academic performance and weight status.

Research Question 5: What strategies can be proposed to prevent and manage obesity and overweight within the University of Benin community?

Answer: Based on the study's findings, several strategies can be proposed to address obesity and overweight in the University of Benin community. These strategies may include promoting healthy dietary choices, increasing physical activity opportunities, enhancing awareness about the health implications of obesity, and creating a supportive and health-promoting campus environment.

Alternative hypothesis (H1): There is a significant association between dietary habits, physical activity levels, and the prevalence of obesity and overweight among students and faculty in the University of Benin.

Null hypothesis (H0): There is no significant association between dietary habits, physical activity levels, and the prevalence of obesity and overweight among students and faculty in the University of Benin.

Answer: The study's findings support alternative hypothesis (H1), as dietary habits and physical activity levels showed an association with the prevalence of obesity and overweight. This suggests that dietary choices and physical activity play a role in weight status within the academic community.

4.19 Chapter Four Summary

The findings of this chapter reveal a concerning prevalence of obesity and overweight among students and faculty at the University of Benin. These results underscore the importance of addressing this health issue and implementing effective interventions. The chapter also highlights the need for health promotion programs and improved access to healthy lifestyle choices within the university community.

CHAPTER FIVE

CONCLUSION, SUMMARY OF FINDINGS, AND RECOMMENDATIONS

5.1 Introduction

This chapter serves as the culmination of our research efforts, aiming to provide a concise summary of the major findings from our study on the prevalence and factors associated with obesity and overweight among students and faculty at the University of Benin, Benin City, Edo State, Nigeria. We also offer evidence-based recommendations for addressing these critical health concerns and promoting a healthy campus environment.

5.2 Summary of Findings

In this section, we present a summarized account of the key findings from our research, as discussed in Chapter 4.

Prevalence of Obesity and Overweight: Our study revealed a significant prevalence of overweight and obesity among the university population, with 63% of the participants falling into these categories. Notably, many of the female and male participants who were classified as obese or overweight exhibited central adiposity, indicating a potential health concern.

Lifestyle and Behaviour: The findings underscore the importance of examining lifestyle factors contributing to obesity and overweight. Physical inactivity was prevalent among both students and faculty, with the majority reporting less than three hours of physical activity per week. Dietary habits showed regular consumption of fast food and sugary beverages, while access to and preference for healthier food choices were limited.

Health Perceptions and Awareness: A notable portion of our participants displayed a lack of awareness of the health implications associated with obesity and overweight. These findings

emphasize the need for educational programs that inform the university community about the health risks and consequences.

Self-Perception of Weight Status: A significant number of participants perceived themselves as overweight or obese, particularly among the female participants. This perception potentially indicates body image and self-esteem concerns.

Barriers to Healthy Weight: Several barriers were identified in maintaining a healthy weight, including academic stress, limited time, and unhealthy food options. These findings demonstrate the complexity of factors influencing weight management.

Academic Performance and Impact: There is a correlation between academic performance and health behaviours. Higher academic performance was associated with better health behaviors, such as infrequent smoking and drinking. A substantial number of participants agreed that obesity can affect academic performance.

Knowledge and Information Sources: Internet and websites were the primary sources of health and nutrition information for our participants. However, it was surprising to find that a majority had never attended health or weight management programs at the University of Benin.

5.3 Discussion

The findings from our research highlight the urgency of addressing the issue of obesity and overweight within the University of Benin community. The implications of these findings are multi-faceted and necessitate a holistic approach to promoting a healthier environment and improving the well-being of students and faculty.

5.4 Implications of the Findings

The implications of our study's findings resonate with existing literature on the escalating trend of obesity and overweight among college and university students. Abayomi Olabayo et al. (2023)

have raised the alarm regarding the increasing prevalence of overweight and obesity among this demographic. Additionally, Abayomi et al. (2023) stress the concerning continuity of obesity from childhood and adolescence into adulthood, underlining the lasting impact of these conditions. The findings of this study align with these concerns, emphasizing that university students and faculty members are indeed susceptible to this trend, as indicated by Smith et al. (2020).

Furthermore, the influence of stress and academic pressure on eating patterns and weight-related issues, as highlighted by Gillen et al. (2018), is a significant concern. Amin et al. (2019) also emphasize the role of dietary habits, particularly the consumption of high-calorie processed foods and sugary beverages, in contributing to weight gain. Our study's findings substantiate these claims by revealing a high prevalence of stress-related eating behaviors and the consumption of unhealthy food choices among the academic community.

Moreover, Ogbonna et al. (2018) have identified academic-related stress and poor time management as contributors to obesity among university students. Our study concurs with this by showing a substantial number of participants resorting to eating and sleeping as stress management techniques.

These findings align with the conceptual framework that suggests a complex interplay of factors, including dietary patterns, sedentary lifestyles, stress, and the obesogenic environment on campuses (Popkin & Duffey, 2010; Sisson et al., 2009; Johnson et al., 2019; Adebayo et al., 2019). In particular, the study substantiates the concerns raised by Salisu et al. (2017) regarding the linkage between sedentary behaviors and increased obesity and overweight rates among students and faculty in educational institutions. Additionally, the high consumption of fast foods,

sugary beverages, and snacks, as highlighted by Olatunji et al. (2019), strongly resonates with the dietary habits prevalent within the University of Benin's academic community.

5.5 Implications for Nursing

The implications of these findings are significant for the field of nursing. Nursing professionals are at the forefront of promoting health and well-being. Given the high prevalence of obesity and overweight among students and faculty, nurses have a crucial role in both prevention and management. Health promotion programs and interventions can be developed and implemented to address these concerns, with a focus on nutrition, physical activity, stress management, and emotional health.

5.6 Limitations of the Study

While this study contributes valuable insights, it is not without limitations. One potential limitation is the self-reported nature of some data, such as dietary habits and physical activity levels, which could be subject to recall bias. Additionally, the cross-sectional design allows for the observation of associations but does not establish causality between variables. Also, the study's scope is limited to the University of Benin, and generalizing the findings to other educational institutions in Nigeria, or to non-academic populations, should be done cautiously.

5.7 Summary of the Study

In summary, this study highlights the alarming prevalence of obesity and overweight among students and faculty at the University of Benin, aligning with concerns expressed in the existing literature. Various factors, including dietary habits, sedentary behavior, and stress-related eating, contribute to this health issue. The findings emphasize the need for proactive measures to promote a healthier campus environment.

5.8 Conclusion

This research project has shed light on the concerning prevalence of obesity and overweight within the University of Benin community. As we conclude this study, we emphasize the critical need for proactive measures to address these health concerns. The recommendations outlined in this chapter, based on our findings and aligned with our research objectives, offer a roadmap for promoting a healthier campus environment and enhancing the well-being of our academic community. It is our hope that this research project serves as a catalyst for change, inspiring collaborative efforts among stakeholders to create a healthier and more supportive environment for all members of the University of Benin. We look forward to a future where obesity and overweight are no longer barriers to the academic and personal success of our students and faculty.

5.9 Recommendations

In line with our research objectives and the insights gained from our study, we offer the following evidence-based recommendations:

Health Promotion and Education: Develop and implement health promotion programs that raise awareness about the health risks associated with obesity and overweight. These programs should target both students and faculty and focus on the importance of a balanced diet, regular physical activity, and stress management.

Improved Access to Healthy Food Choices: Enhance the availability of healthy food options on campus, with an emphasis on affordable and convenient choices. Collaborate with local food vendors to promote nutritious meals.

Physical Activity Initiatives: Establish and promote physical activity initiatives on campus, including fitness classes, sports events, and access to exercise facilities. Encourage participation among students and faculty.

Mental Health and Stress Management: Recognize the relationship between stress and weight management. Implement mental health support services and stress management programs to assist students and faculty in adopting healthier coping strategies.

Academic Support: Provide academic support and counseling services to help students manage academic stress effectively, thereby mitigating its impact on health behaviors and performance.

Collaboration with Local Health Services: Collaborate with local healthcare providers to offer regular health check-ups and screenings to detect and manage obesity-related health conditions.

Research and Monitoring: Conduct further research to monitor the impact of these recommendations and assess the effectiveness of health promotion programs.

5.10 Suggestions for Further Studies

As we move forward, there are several areas where further research can expand upon our findings and contribute to a more comprehensive understanding of obesity and overweight in academic settings:

Longitudinal Studies: Conduct long-term studies to track the health behaviors and weight management of students and faculty over extended periods, providing insights into the sustainability of health promotion efforts.

Impact on Specific Health Conditions: Investigate the link between obesity and specific health conditions, such as diabetes and hypertension, within the university community.

Cultural Factors: Explore the influence of cultural factors on dietary habits, physical activity, and health perceptions among different demographic groups.

Effectiveness of Interventions: Evaluate the effectiveness of the recommended interventions and programs in improving health behaviors and reducing the prevalence of obesity and overweight.

Student and Faculty Collaboration: Encourage collaborative efforts between students and faculty to design and implement health promotion initiatives tailored to the university community's specific needs.

By continuing to explore these avenues, we can build a more comprehensive foundation for promoting health and well-being at the University of Benin.

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APPENDICES

Appendix A: Questionnaire on Obesity and Overweight

Section 1: Demographic Information

Age: Under 20[ ] 20-25[ ] 26-30[ ] 31-40 [ ] 41 and above[ ]

Gender: Male[ ] Female[ ] Prefer not to say[ ]

Educational Level: Undergraduate student[ ] Postgraduate student[ ] Faculty[ ]

Department or Course of Study: _____

Section 2: Anthropometric Measurements

The research assistant is to aid you in obtaining these values. Or you can please provide them, if you have them.

Height (in cm)	
Weight (in kg)	
Waist Circumference (in cm)	

Section 3: Dietary Habits

3.1. How often do you consume fast food or processed snacks in a week?

[ ] Never

[ ] Rarely (1-2 times)

[ ] Occasionally (3-4 times)

[ ] Frequently (5 or more times)

3.2. How many servings of fruits and vegetables do you typically have in a day?

[ ] None

[ ] 1-2 servings

[ ] 3-4 servings

[ ] 5 or more servings

3.3. How frequently do you consume sugary beverages (e.g., soft drinks, sweetened juices)?

[ ] Never

[ ] Rarely

[ ] Daily

[ ] Weekly

Do you smoke? Yes [ ] No[ ]

If yes, how many cigarettes do you smoke per day? _____

Do you consume alcohol? Yes [ ] No[ ]

If yes, how often do you consume alcohol? _____

3.4 How would you describe your current dietary habits?

Very healthy	Somewhat healthy	Neutral	Unhealthy	Very unhealthy

Section 4: Physical Activity and Sedentary Behavior

4.1. On average, how many days a week do you engage in moderate to vigorous physical activities (e.g., exercise, sports, brisk walking)?

[ ] Zero days

[ ] 1-2 days

[ ] 3-4 days

[ ] 5 or more days

4.2. How many hours a day do you spend on sedentary activities (e.g., sitting, watching TV, using the computer)?

[ ] Less than 1 hour

[ ] 1-2 hours

[ ] 3-4 hours

[ ] 5 or more hours

Section 5: Stress and Emotional Eating

5.1. How often do you eat in response to stress or emotions?

[ ] Never

[ ] Rarely

[ ] Often

[ ] Always

5.2. How many hours of sleep do you get on average per night?

[ ] Less than 6 hours

[ ] 6-8 hours

[ ] More than 8 hours

5.3. How do you manage stress?

[ ] Exercise

[ ] Meditation

[ ] Unhealthy Eating

[ ] Others (please specify) _____

Section 6: Environmental Factors

6.1. How would you rate the availability of healthy food options on campus?

[ ] Very Poor

[ ] Poor

[ ] Fair

[ ] Good

[ ] Excellent

6.2. Do you have easy access to exercise facilities on campus?

[ ] Yes

[ ] No

[ ] Sometimes

6.3. To what extent do you think the university environment influences your lifestyle choices regarding health and weight management?

[ ] Strongly Negative

[ ] Negative

[ ] Neutral

[ ] Positive

[ ] Strongly Positive

Section 7: Awareness and Perceptions

7.1. How would you rate your level of knowledge about obesity and overweight?

[ ] Very low

[ ] Low

[ ] Moderate

[ ] High

[ ] Very high

7.2. Which of the following health conditions are associated with obesity? (Check all that apply)

[ ] Type 2 Diabetes

[ ] Hypertension

[ ] Cardiovascular Disease

[ ] Osteoarthritis

[ ] Depression

[ ] Cancer

[ ] None

7.3. What factors do you believe hinder students and faculty from maintaining a healthy weight in an academic setting? (Check all that apply)

[ ] Lack of time

[ ] Stress

[ ] Unhealthy food options on campus

[ ] Sedentary academic lifestyle

[ ] Lack of awareness about healthy choices

[ ] Social pressure

[ ] Others (please specify): _____

7.4 Do you perceive obesity and overweight as a health concern in the University of Benin community?

[ ] Yes

[ ] No

7.5. Do you believe there is sufficient awareness about obesity and overweight within the University of Benin community?

[ ] Yes

[ ] No

7.6. Have you ever sought information or guidance on maintaining a healthy weight or lifestyle?

[ ] Yes, from a healthcare professional

[ ] Yes, from online sources

[ ] Yes, from friends or family

[ ] No, I have not sought information

7.7. Have you ever been diagnosed as obese or overweight by a healthcare professional? Yes[ ] No[ ]

7.8 If yes, are you currently receiving treatment or interventions for obesity or overweight? Yes [ ] No[ ]

Section 8: Attitudes and Motivation

8.1. Are you interested in participating in health and wellness programs or initiatives to promote a healthier lifestyle within the University of Benin community?

[ ] Very Interested

[ ] Interested

[ ] Neutral

[ ] Not Interested

[ ] Not Interested at all

8.2. What types of health and wellness programs or initiatives would you be interested in? (Check all that apply)

[ ] Nutrition Workshops

[ ] Fitness Classes

[ ] Stress Management Workshops

[ ] Support Groups

[ ] Health Screenings

[ ] Other (please specify): _____

8.3. What do you think are the major barriers to maintaining a healthy lifestyle within the University of Benin? (Check all that apply)

[ ] Limited access to healthy food options

[ ] Academic workload

[ ] Lack of awareness about healthy choices

[ ] Limited recreational facilities

[ ] Social pressure

[ ] Financial constraints

[ ] Other (please specify): _____

8.4 Please indicate your level of agreement with the following statements by checking the appropriate box.

Statement	AGREE	DISAGREE	STRONGLY AGREE	STRONGLY DISAGREE
Maintaining a healthy weight is important to me.				
My weight has a significant impact on my self-esteem.				
Alcohol can not contribute to excess weight gain.				
Smoking, has no effect on body weight.				
Individuals have control over their weight through lifestyle choices.				
I feel pressured by societal standards to maintain a certain body weight.				
I am conscious of my food choices and portion sizes.				
Individuals have no control over their weight, as genetics control it.				
Obesity can affect academic performance.				
The University of Benin promotes a healthy environment for students and faculty.				
Creating a healthier campus environment is essential.				
The university should offer more physical activity opportunities.				
I think maintaining a healthy weight is important for overall well-being.				

8.5. Which of the following strategies do you think would be effective in promoting a healthier lifestyle within the University of Benin community? (Check all that apply)

[ ] Implementing nutrition education programs

[ ] Increasing the availability of healthy food options on campus

[ ] Organizing regular physical activity events or classes

[ ] Incorporating wellness initiatives within academic curricula

[ ] Creating awareness campaigns about obesity and its health risks

[ ] Other (please specify): _____

Section 9: (Additional Comments)

Please provide any additional comments or insights you have regarding obesity and overweight among students and faculty in the university community:

_____

Section 10: Closing

Your input is valuable to our research. Thank you for completing this questionnaire. If you have any additional comments or questions, please feel free to share them.

Appendix B: Genetic Factors

Convincing hypotheses and evidence are emerging worldwide, suggesting a significant genetic component to body size and fatness in some individuals. Research indicates that if both parents are overweight, approximately 80 percent of their offspring will also be overweight. Conversely, if neither parent is overweight, less than 10 percent of their children will have weight issues. Although this study didn't specifically focus on the body size or fatness of other family members, a few obese individuals were asked about this, and their responses are summarized below.

Verbal Responses of Obese Individuals to Having Obese Parents/Family Members

Number of Participants: 168 obese individuals

Yes to having obese parents: 35

No to having obese parents: 83

Others either chose to avoid the question, were not asked, or were not willing to comment on a family member's weight.

Appendix C: Cushing Syndrome

Cushing syndrome, also known as hypercortisolism, is a condition resulting from the overproduction of cortisol by the adrenal glands. It has been considered as a potential cause of obesity and central adiposity in certain individuals. This overproduction of cortisol can stimulate appetite, leading affected individuals to consume more food than they typically would. Additionally, this condition often leads to symptoms such as weakness, fatigue, and low mood, making it challenging for individuals to engage in physical activity or control their portion sizes.

Responses of Obese Individuals to Whether or Not They Think They Have Cushing Syndrome

Number of Participants: 186 obese individuals

Believed they had Cushing syndrome: 25

Did not believe they had Cushing syndrome: 45

Diagnosed with Cushing syndrome: 4

Appendix D: Hypothyroidism

Hypothyroidism, also referred to as underactive thyroid, is a condition in which the thyroid gland fails to produce sufficient thyroid hormones. It is more common in older women. This deficiency in thyroid hormones can disrupt various bodily functions, including heart rate, body temperature, and metabolism. Individuals with hypothyroidism typically experience a decrease in their Basal Metabolic Rate (BMR) or metabolism. This condition often leads to weight gain, whether in small or significant amounts.

Responses of Obese Individuals to Whether or Not They Think They Have Hypothyroidism

Number of Participants: 186 obese individuals

Believed they had hypothyroidism: 40

Did not believe they had hypothyroidism: 70

Diagnosed with hypothyroidism: None

APPENDIX E: Comparison of Perceived Causes of Obesity

Number of obese participants who attributed their obesity to genetics, Cushing syndrome, or hypothyroidism: 60

Number of obese participants who thought their obesity was due to a lack of motivation to eat healthily or exercise: 110

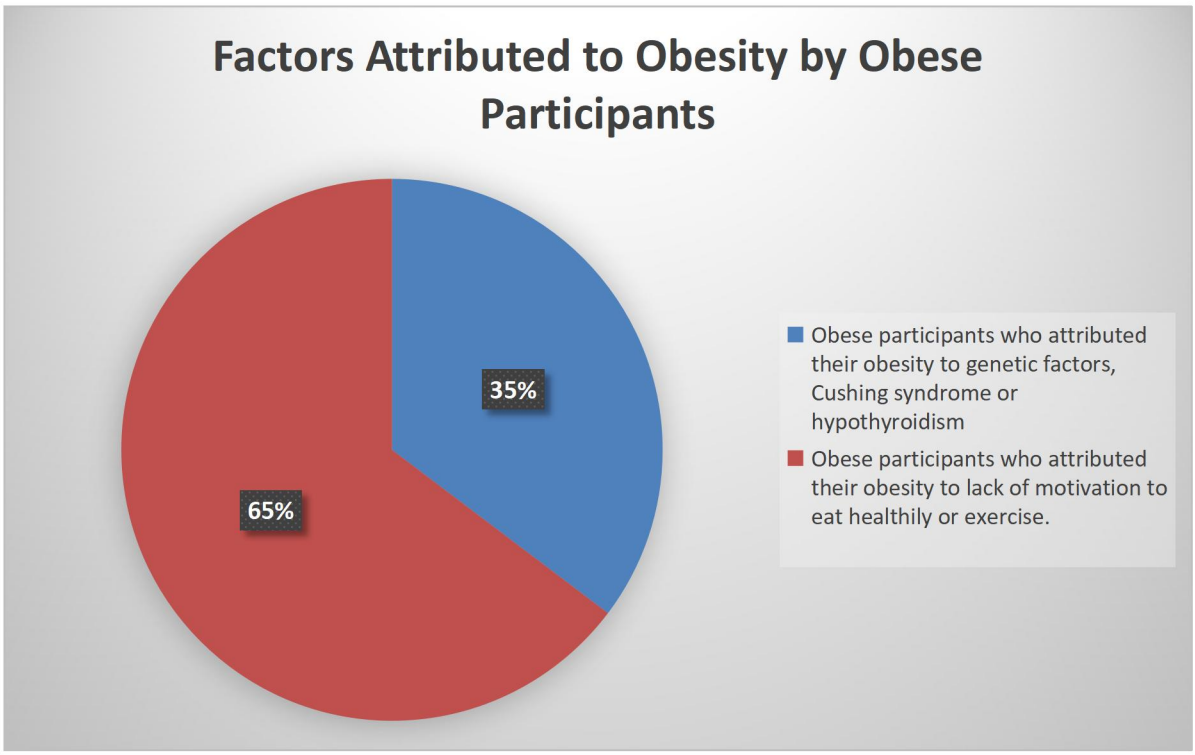

Figure xi: Factors Attributed to Obesity by Obese Participants

APPENDIX F

At the end of the research, it was observed that more than half of the obese participants, even those who mentioned genetic factors, Cushing syndrome, or hypothyroidism, acknowledged that their poor dietary, physical activity, and lifestyle behaviors played a role in their current weight status.