

**KNOWLEDGE AND ATTITUDE OF DIET PROMOTION STRATEGIES IN THE
PREVENTION OF OBESITY AMONGST NURSING STUDENTS IN ATERTIARY
INSTITUTION IN EDO STATE**

BY;

PALMER FAITH EHIZOFUA

BMS2005966

FACULTY OF NURSING SCIENCES

UNIVERSITY OF BENIN

BENIN CITY

EDO STATE

OCTOBER,2025

**KNOWLEDGE AND ATTITUDE OF DIET PROMOTION STRATEGIES IN THE
PREVENTION OF OBESITY AMONG NURSING STUDENTS IN A TERTIARY
INSTITUTION IN EDO STATE**

BY

PALMER FAITH EHIZOFUA

BMS2005966

FACULTY OF NURSING SCIENCES

**IN PARTIAL FUFILMENT OF THE REQUIREMENT OF FOR THE AWARD OF
“BACHELOR OF NURSING SCIENCES ”,,UNIVERSITY OF BENIN,EDO STATE**

OCTOBER,2025

DECLARATION

This is to declare that this research project titled “Knowledge and attitude of diet promotion strategies in the prevention of obesity amongst nursing students in a tertiary institution in Edo state” was carried out by Palmer faith ehizofua and is solely the result of my work except where acknowledged as being derived from other person(s) or resources.

Examination Number: Bms2005966

In the FACULTY OF NURSING SCIENCE, UNIVERSITY OF BENIN, EDO STATE.

Signature.....

Date.....

CERTIFICATION/APPROVAL

This is to certify that this research project was carried out by Palmer faith ehizofua with examination number BMS2005966 has been examined and approved for the award of “Bachelors of Nursing science (Bnsc)”in the Faculty of nursing science under the supervision of Prof (Mrs) Roselynd Esewe

PALMER FAITH EHIZOFUA

Sign & Date.....

(Student)

PROF.(MRS)R.E.ESEWE

(Project supervisor)

Sign & Date.....

PROF.(MRS)C.E OMOROGBE

(Head of department)

Sign & Date.....

Name:

Sign & Date.....

(External Examiner)

ABSTRACT

Obesity is defined as the abnormal or excessive accumulation of body fat to levels that pose significant health risks. This study assessed the knowledge and attitude regarding diet promotion strategies in the prevention of obesity among nursing students at the University of Benin, Edo State. The research was guided by three objectives and corresponding research questions. The target population comprised nursing students from 200 to 500 levels, and a sample of 282 participants was selected using a simple random sampling technique. Data were collected through a structured, self-administered questionnaire and analyzed using descriptive statistics such as frequencies and percentages. Findings revealed that most respondents possessed adequate knowledge and a positive attitude toward diet promotion strategies for obesity prevention. Specifically, 99.4% of participants were aware that obesity is a major risk factor for chronic diseases, while 96.8% demonstrated a favorable attitude toward maintaining healthy eating habits. However, the practical application of this knowledge was found to be inconsistent. The study concludes that continuous health education is essential to strengthen nursing students' knowledge and attitudes regarding obesity prevention. It recommends that the Nursing and Midwifery Council of Nigeria incorporate comprehensive concepts on diet promotion strategies, obesity prevention, and nutrition-related interventions into the nursing curriculum to enhance students' competencies as future health educators and advocates.

Keywords: Knowledge, Attitude, Diet Promotion Strategies, Nursing Students, Obesity Prevention

DEDICATION

This research project is dedicated to God Almighty for His wisdom, guidance and grace in making this project a success, for His provision towards financing this project . To my parents, Engr and Mrs Palmer Patrick ,who were always there for me with their unwavering love, support and prayers.

ACKNOWLEDGEMENT

I am deeply appreciative of the numerous individuals who have played a pivotal role in the completion of this research project. Foremost ,my profound gratitude extends to my project supervisor Prof (Mrs)R.E Esewe ,whose expertise and guidance have been instrumental throughout this journey, your insightful feedback and unwavering support have been crucial in shaping this work into its present form .

I would also like to extend my appreciation to the preterm Dean Prof F.U Okafor and my other lecturers,Dr(Mrs)C.Enuku,Prof(Mrs)J.AAfemikhe,Prof(Mrs)C.EOmorogbe,Mrs.Oyana, Mrs.Lawal as well as other lecturers and non-academic staffs for their immense contribution, dedication and support to the successful completion of academic pursuit.

To my colleagues and friends, your encouragement, constructive criticism and moral support, prayers have been a source of great inspiration and motivation. Your contributions have significantly enriched this study.

I dedicate a special note of gratitude to the participants of this study, whose willingness to share their insights and experiences made this research possible, this work is a culmination of collective effort, and I am truly grateful for the support. Thank you all.

TABLE OF CONTENTS

COVER PAGE	i
TITLE PAGE	ii
DECLARATION	iii
CERTIFICATION/APPROVAL	iv
ABSTRACT	v
DEDICATION	vi
ACKNOWLEDGEMENT	vii
TABLE OF CONTENTS	viii
LIST OF TABLES AND FIGURES	xii
CHAPTER ONE	1
INTRODUCTION	1
1.0 Background to the Study	1
1.1 Statement of the Problem	2
1.2 Aim of the Study	4
1.3 General Objectives	Error! Bookmark not defined.
1.4 Research Questions	4
1.5 Research Hypothesis	5
1.6 Significance of study	5
1.7 Scope of the study	6
1.8 Operational Definition of Terms	7
CHAPTER TWO	9
LITERATURE REVIEW	9

2.0 Overview	9
2.1 Conceptual review	9
2.1.1 Concept of Obesity	9
2.1.2 Concept of Diet Promotion Strategies	16
2.1.3 Obesity Prevention through Dietary Strategies	21
2.2 THEORETICAL REVIEW	26
2.2.1 Health Belief Model (HBM)	26
2.2.2 Application to the study	29
2.3 EMPIRICAL REVIEW	30
2.3.1 Determine the level of knowledge about obesity, its causes, consequences, and prevention strategies among nursing students	30
2.3.2 Assess nursing students' attitudes toward obesity prevention and their perceived role in promoting healthy dietary practices.	32
2.3.3 Barriers to implementing diet promotion strategies	34
2.4 Summary of the literature review	35
CHAPTER THREE	37
RESEARCH METHODOLOGY	37
3.0 Overview	37
3.1 Research Design	37
3.2 Research Settings	37
3.3 Target Population	38
3.4 Sampling Size Determination	39
3.5 Sampling Technique	41

3.6 Instrument for data collection	41
3.7 Validity of instrument	42
3.8 Reliability of instrument	42
3.9 Method of data collection	43
3.10 Method of data analysis	44
3.11 Ethical consideration	44
CHAPTER FOUR	45
RESULTS	Error! Bookmark not defined.
4.0 Overview	Error! Bookmark not defined.
4.1 Socio-demographic characteristics of respondents	46
4.2 Determine the knowledge about obesity, its causes, consequences, and prevention strategies among nursing students in the university of Benin.	47
4.3 Assess nursing students attitudes toward obesity prevention and their perceived role in promoting healthy dietary practices.	48
4.4 Identify barriers to implementing diet promotion strategies for obesity prevention amongst nursing students.	49
4.5 Test of hypothesis	50
CHAPTER FIVE	Error! Bookmark not defined.
DISCUSSION OF FINDINGS	Error! Bookmark not defined.
5.0 Overview	52
5.1 Discussion of findings	52
5.2 Implication of this findings to nursing	58
5.3 Limitation of the study	61

5.4 Summary of the study	Error! Bookmark not defined.
5.5 Conclusion	63
5.6 Recommendation	64
5.7 Suggestions for further study	65
REFERENCES	66
APPENDIX	73

LIST OF TABLES AND FIGURE

Table 3.1 Population of students in the department of nursing science	37
Table 3.2 Proportional sampling of target population	38
Table 4.1 Socio-demographic characteristics of respondents	45
Table 4.2 Knowledge of obesity among respondents	47
Table 4.3 Attitudes of nursing students towards diet promotion	48
Table 4.4 Barriers to diet promotion Strategies for obesity prevention amongst nursing students.	49
Table 4.5 Relationship between knowledge and attitude of diet promotion strategies	50
Figure 2.2 Diagrammatic representation of the health belief model	26

CHAPTER ONE

INTRODUCTION

1.0 Background to the Study

Obesity represents one of the most pressing public health challenges of the 21st century (WHO, 2024; Afshin et al., 2023). According to WHO, global obesity has nearly tripled since 1975, with over 1.9 billion adults classified as overweight, of which 650 million were obese as of 2016 (WHO, 2021). This epidemic has not spared Nigeria, where rapid urbanization, increasingly sedentary lifestyles, and changing dietary patterns have contributed to rising obesity rates. Recent studies indicate that approximately 8.9% of Nigerian adults are obese, with higher prevalence rates observed in urban settings and among women (Chukwu Onye et al., 2023).

The healthcare implications of obesity are profound and multifaceted. Obesity significantly increases the risk of non-communicable diseases such as type 2 diabetes, cardiovascular diseases, musculoskeletal disorders, and certain cancers (Williams et al., 2022). Beyond physical health concerns, obesity also imposes substantial socioeconomic burdens on individuals and healthcare systems alike. In Nigeria, the economic cost of obesity-related healthcare was estimated at 4.3% of total healthcare expenditure in 2022, representing a significant drain on already limited resources (Nigerian Ministry of Health, 2023).

Nursing students occupy a unique position in this context. As future healthcare professionals, they will be at the forefront of managing obesity and its related complications. Their role extends beyond treatment to encompass prevention through health education and promotion strategies. Nursing students represent both the future implementers of dietary interventions and a demographic vulnerable to obesity themselves due to academic stress, erratic schedules, and often poor dietary habits associated with university life (Okafor & Nwankwo, 2022).

The University of Benin (UNIBEN), located in Edo State, is one of Nigeria's premier institutions for nursing education. With a student population drawn from diverse socioeconomic and cultural backgrounds, it presents an ideal setting to examine knowledge and attitudes regarding diet promotion strategies for obesity prevention. Understanding these factors among nursing students is crucial, as their personal health behaviors often influence their future professional practices and their effectiveness as health promoters (Adeoye & Johnson, 2023).

While numerous studies have investigated obesity prevalence and risk factors among various Nigerian populations, limited research has focused specifically on nursing students' knowledge of and attitudes toward dietary approaches to obesity prevention. This gap in the literature is particularly significant given the crucial role nurses play in health promotion and education. The present study aims to address this research gap by providing comprehensive insights into the knowledge and attitudes of nursing students at a tertiary institution in Edo state regarding diet promotion strategies for obesity prevention.

1.1 Statement of the Problem

The rising prevalence of obesity among young adults in Nigeria, including university students, presents a significant public health concern. Nursing students, despite their healthcare education, are not immune to this trend. Studies conducted at various Nigerian universities have reported obesity rates ranging from 10-15% among nursing students, with an additional 25-30% classified as overweight (Emmanuel et al., 2022). These statistics are particularly alarming considering that these individuals will soon be responsible for promoting healthy dietary practices to their patients.

Moreover, there appears to be a disconnect between theoretical knowledge acquired during training and attitude in personal life and clinical settings.

Additionally, cultural factors and traditional Nigerian dietary patterns significantly influence attitudes toward food and body weight. In many Nigerian communities, being overweight is sometimes perceived as a sign of prosperity and good living (Adeleke & Nsofor, 2022). These cultural perceptions may conflict with scientific knowledge about obesity risks, creating cognitive dissonance among nursing students.

A cross-sectional study of undergraduates at Lead City University, Ibadan found that many students skip meals (especially breakfast), often make food choices based on convenience and ease of purchase rather than health, and show poor dietary patterns despite awareness of nutrition. (Ogundele, Aleru, Bodunde & Gbenro, 2023).

Furthermore, there exists limited research specifically focused on nursing students at the University of Benin regarding their knowledge and attitudes related to diet promotion strategies for obesity prevention. This knowledge gap impedes the development of targeted interventions that could enhance both personal health behaviors and professional practice readiness among this crucial group of future healthcare providers.

These multifaceted challenges necessitate a comprehensive investigation to understand the complex interplay between knowledge and attitudes related to diet promotion strategies among nursing students in a tertiary institution in Edo state. Such understanding is essential for developing effective educational interventions that can bridge the knowledge-attitude gap and prepare nursing students to become effective advocates for obesity prevention.

1.2 Aim of the Study

To assess the knowledge ,attitudes and perceived barriers regarding diet promotion strategies for obesity prevention amongst nursing students in a tertiary institution in Edo State.

1.3 Objectives

1. To determine the level of knowledge about obesity, its causes, consequences, and prevention strategies among nursing students in a tertiary institution in Edo state.
2. To assess nursing students' attitudes toward obesity prevention and their perceived role in promoting healthy dietary practices in a tertiary institution in Edo state.
- 3.To identify barriers to implementing diet promotion strategies for obesity prevention among nursing students in a tertiary institution in Edo state.

1.4 Research Questions

1. What is the level of knowledge about obesity, its causes, consequences, and prevention strategies among nursing students in a tertiary institution in Edo state?
2. What attitudes do nursing students in a tertiary institution in Edo state hold toward obesity prevention and their role in promoting healthy dietary practices?
- 3.What barriers influence the implementation of diet promotion strategies for obesity prevention among nursing students in a tertiary institution in Edo state?

1.5 Research hypotheses

H₀: There is no significant relationship between the knowledge and attitude of diet promotion strategies and preventing obesity among nursing students in a tertiary institution in Benin city Edo state

H₁: There is a significant relationship between the knowledge and attitude of diet promotion strategies and the prevention of obesity among nursing students in a tertiary institution in Benin City, Edo State.

1.6 Significance of study

This study holds significant implications for multiple stakeholders involved in healthcare education and obesity prevention:

- 1 For nursing education, the findings will provide valuable insights into the current curriculum's effectiveness in preparing students to address obesity through dietary interventions. Identified knowledge gaps can inform curriculum enhancement to strengthen specific content areas related to nutrition science, behavior change theories, and attitudes to diet promotion strategies.
- 2 For healthcare institutions, particularly those in Edo State and similar settings, this research will offer evidence-based recommendations for improving the preparedness of future nurses to implement effective obesity prevention programs. The study's findings can guide the development of professional development initiatives and workplace policies that support healthcare providers in maintaining healthy dietary behaviors and serving as credible role models for patients.

- 3 For policy development, this research will contribute to the evidence base needed for creating targeted health promotion policies at institutional and governmental levels. By identifying specific barriers to implementing dietary knowledge in personal and professional contexts, policymakers can design more effective interventions that address these challenges directly.
- 4 For the nursing students themselves, participation in this study may increase awareness of their own knowledge gaps, potentially catalyzing personal behavior change. Additionally, the findings may inform the development of peer support programs and student-led initiatives to promote healthier eating habits within the university community.
- 5 From a public health perspective, enhancing the effectiveness of future nurses as diet promotion agents could contribute significantly to obesity prevention efforts in Nigeria. As frontline healthcare providers, well-prepared nurses can influence the dietary behaviors of countless patients throughout their careers, creating a multiplier effect that extends the study's impact far beyond its immediate context.
- 6 For research advancement, this study will address a significant gap in the literature regarding the specific context of Nigerian nursing students and their relationship with diet promotion strategies. The methodological approach and findings can serve as a foundation for similar investigations in other Nigerian universities and healthcare training institutions.

1.7 Scope of the study

This study will focus specifically on undergraduate nursing students enrolled at the University of Benin, Edo State, Nigeria. The investigation will encompass students across some levels of study (200-500 level) within the faculty of Nursing Sciences, thereby providing a comprehensive

cross-sectional perspective of knowledge and attitudes throughout the progression of nursing education.

Thematically, the research will concentrate on two key domains:

1. Knowledge assessment: The study will evaluate students' understanding of obesity (definition, classification, epidemiology), its health implications, risk factors, and evidence-based dietary approaches for prevention. This will include knowledge of basic nutrition principles, dietary guidelines, and behavior change strategies relevant to obesity prevention.

2. Attitude evaluation: The research will explore students' perceptions regarding obesity as a health issue, their beliefs about the role of nurses in dietary promotion, their self-efficacy in implementing dietary interventions, and their attitudes toward individuals with obesity.

The research will be conducted within a specific timeframe (approximately three months) to ensure data currency and minimize the influence of external factors on students' responses. While the study acknowledges the multifactorial nature of obesity prevention, it will maintain a primary focus on dietary aspects rather than physical activity or other lifestyle factors, though these may be briefly addressed for contextual completeness.

Geographically, the study will be limited to the University of Benin campus and associated clinical training sites within Edo State. While this geographical limitation may impact generalizability to other regions of Nigeria, it allows for a more in-depth understanding of the specific contextual factors influencing this particular student population.

1.8 Operational definition of terms

For clarity and consistency, the following terms are operationally defined as they will be used throughout this study:

Knowledge: The factual information, understanding, and awareness that nursing students possess regarding obesity, its causes, consequences, and evidence-based dietary approaches for prevention. This will be measured through assessment of theoretical understanding and recall of relevant information.

Attitude: The beliefs, opinions, perceptions, and feelings that nursing students hold toward obesity as a health issue, their role in dietary promotion, and their confidence in implementing dietary interventions. This encompasses both cognitive and affective dimensions of students' perspectives.

Diet Promotion Strategies: Evidence-based approaches, interventions, and techniques used to encourage and support healthy eating patterns that contribute to obesity prevention. These may include educational initiatives, counseling methods, motivational techniques, and policy measures.

Obesity: A medical condition characterized by excessive accumulation of body fat that presents a risk to health, operationally defined as a Body Mass Index (BMI) of 30 kg/m² or greater. For this study, overweight (BMI 25-29.9 kg/m²) will also be considered within the broader context of weight management.

Nursing Students: Individuals formally enrolled in the undergraduate nursing program at the University of Benin, pursuing a Bachelor of Nursing Science degree, year of study (200-500 level).

Prevention: Actions and interventions aimed at reducing the incidence of obesity by addressing modifiable risk factors, particularly dietary habits, before the condition develops or progresses.

CHAPTER TWO

LITERATURE REVIEW

2.0 Overview

A literature review is a search and evaluation of the available literature in a given subject or chosen topic area. Literature in this study was reviewed under the following subheadings; conceptual review, theoretical framework, empirical review and summary of literature review. This chapter reviews literature as related to this study under the following sub-headings; conceptual review, theoretical review, empirical review.

2.1 Conceptual review

2.1.1 Concept of Obesity

Obesity is a chronic, relapsing, multifactorial disease characterized by abnormal or excessive accumulation of adipose tissue that poses a serious risk to health and well-being. It has become one of the foremost global public health challenges of the 21st century, fueled by economic development, lifestyle transitions, and dietary changes. The most commonly used clinical metric to classify obesity is the Body Mass Index (BMI), which is calculated as weight in kilograms divided by height in meters squared (kg/m^2) (Młynarska et al., 2025).. According to the WHO (2023), individuals are considered overweight if their BMI is between 25.0 and 29.9 kg/m^2 , and obese if their BMI is 30.0 kg/m^2 or more. The Centers for Disease Control and Prevention (CDC) further categorizes obesity into three classes: Class I (30.0–34.9 kg/m^2), Class II (35.0–39.9 kg/m^2), and Class III (≥ 40 kg/m^2), with Class III often labeled as “severe” or “morbid obesity.” (Abdulrahman et al., 2025).

While BMI remains the most practical tool for population-level obesity screening, it does not distinguish between lean body mass and fat mass, nor does it indicate fat distribution, which is a

critical determinant of risk. Therefore, other indices such as waist circumference (greater than 88 cm in women and 102 cm in men), waist-to-hip ratio, and body fat percentage are often used in conjunction with BMI for a more comprehensive evaluation. Central obesity or the accumulation of visceral fat around the abdomen is particularly associated with a higher risk of metabolic diseases, even among individuals with a normal BMI (Leelavathi & Mathew, 2024).

Globally, obesity has reached epidemic proportions, affecting people across all age groups, socio-economic backgrounds, and geographic regions. According to the World Obesity Atlas (2023), over 1 billion people worldwide are living with obesity including 650 million adults, 340 million adolescents, and over 39 million children (Putrillady et al., 2023). Alarmingly, these figures are expected to rise to 1.9 billion by 2035, if current trends persist. The report further indicates that 51% of the global population will be living with overweight or obesity by 2035, with the highest growth rates projected in low- and middle-income countries due to increasing urbanization, economic transition, and shifts in dietary behavior (Lee et al., 2024). Obesity is no longer limited to high-income countries; it is now prevalent in all regions, including sub-Saharan Africa, where under-nutrition and over-nutrition coexist. (Tropical Medicine & Health, 2024)

In Nigeria, the landscape of malnutrition has changed significantly over the last two decades. Historically burdened by undernutrition and infectious diseases, the country is now experiencing a rise in overweight and obesity, especially in urban areas and among women and youths (Olorunfemi et al., 2023). According to the Nigeria Demographic and Health Survey (NDHS, 2018), 29% of women aged 15–49 in urban areas are overweight or obese, compared to 15% in rural areas. More recent projections by the World Obesity Federation (2023) estimate that over 12 million Nigerians are currently living with obesity, and this number is expected to nearly double by 2035, particularly among adolescents and young adults (Uzokwe et al., 2024). Among

university students, especially in health-related disciplines such as nursing, studies have observed increasing levels of overweight and obesity, driven by sedentary lifestyles, poor eating habits, stress, and limited engagement in regular physical activity (Ehwarieme, 2024).

Causes and Risk Factors of Obesity

The development of obesity is influenced by a complex and dynamic interplay of genetic, behavioral, environmental, socio-economic, and physiological factors. The key causes and risk factors include:

1. Genetic and Epigenetic Factors:

Genetics significantly influence a person's predisposition to weight gain by affecting metabolic rate, appetite regulation, fat storage, and satiety signaling. Twin, adoption, and family studies suggest that up to 40–70% of body weight variability may be attributed to genetic factors. Additionally, epigenetic mechanisms, including in utero exposure to poor nutrition or maternal obesity, may alter gene expression and increase obesity risk later in life (Oliveria et al., 2022).

2. Unhealthy Dietary Patterns:

Consumption of energy-dense, nutrient-poor foods is one of the most direct contributors to obesity. Diets high in refined carbohydrates, saturated fats, processed meats, sugary beverages, and fast foods promote excessive caloric intake and poor dietary quality. In Nigeria, rapid urbanization and the associated nutrition transition have led to a decline in traditional high-fiber diets and a rise in Western-style eating characterized by processed and ultra-processed foods, particularly among urban youths and students. This dietary shift has been strongly linked to increasing rates of overweight and obesity, alongside rising non-communicable disease burdens in urban settings (Olisa & Oguizu et al., 2024).”

3. Physical Inactivity:

The global rise in sedentary behavior is a major contributor to the obesity epidemic, driven by increasing digitalization, urban infrastructure, and shifts in occupational and academic routines. Physical inactivity results in an energy imbalance where caloric intake consistently exceeds energy expenditure leading to progressive adiposity and elevated risk for metabolic disorders. Among nursing students, this challenge is particularly pronounced. The demands of academic life, including long hours spent in lectures, simulations, clinical postings, and coursework, often leave little room for engagement in regular physical activity. Consequently, this population is vulnerable to weight gain and its associated health risks, despite being future health promoters. The World Health Organization recommends a minimum of 150 minutes of moderate-intensity aerobic activity per week for adults. However, global adherence to this guideline is suboptimal, with only about 25–30% of young adults meeting the recommendation and over 80% of adolescents remaining insufficiently active (WHO, 2019). These statistics underscore the need for targeted health promotion strategies within nursing education to foster healthier lifestyles and model evidence-based behavior for future patients.

4. Psychological and Emotional Stress:

Stress-related eating, also known as emotional or comfort eating, is a well-documented contributor to obesity. Chronic stress, academic pressure, anxiety, and depression can lead individuals to overconsume high-calorie foods. Among university students, especially females, this pattern is prevalent and is often associated with late-night snacking, irregular meal times, and frequent skipping of breakfast (Ehwarieme, 2024).

5. Sleep Deprivation:

Several studies have established a strong association between poor sleep hygiene and disruptions in the hormonal regulation of appetite. Two key hormones involved are ghrelin, which stimulates appetite, and leptin, which promotes satiety. Sleep deprivation has been shown to increase ghrelin levels and decrease leptin levels, leading to heightened hunger, increased caloric intake, and reduced energy expenditure. These hormonal changes can contribute to metabolic dysregulation and increased risk of weight gain and obesity.

Recent evidence from a 2020 systematic review and meta-analysis involving over 150,000 adults found that individuals with short sleep durations (typically less than six hours per night) had a 41% higher likelihood of developing obesity compared to those who slept 7–9 hours. The authors concluded that insufficient sleep is a significant and independent risk factor for obesity in adults (Navarro & Creditor, 2020).

6. Medications and Medical Conditions:

Pharmacological treatments and endocrine disorders play significant roles in the pathogenesis of obesity through complex physiological and metabolic mechanisms. Certain medications, including corticosteroids, insulin, antipsychotics, and antidepressants, have been shown to induce weight gain by stimulating appetite, altering glucose metabolism, and reducing energy expenditure. For instance, corticosteroids increase insulin resistance and promote adipose tissue deposition, while antipsychotic drugs such as olanzapine and clozapine interfere with satiety regulation and lipid metabolism. Similarly, antidepressants like mirtazapine and tricyclics can enhance caloric intake and promote weight gain. Beyond pharmacological factors, several endocrine disorders including hypothyroidism, Cushing's syndrome, and polycystic ovarian syndrome (PCOS) are associated with impaired hormonal regulation and reduced metabolic

efficiency, both of which contribute to fat accumulation and obesity persistence. These physiological disruptions, particularly when combined with sedentary behavior and poor dietary habits, complicate weight management and necessitate a multifaceted therapeutic approach (Maghbooli, 2024).

7. Socioeconomic and Environmental Influences:

Urban environments, food deserts, lack of recreational spaces, and aggressive marketing of unhealthy foods make it difficult for people to make healthier lifestyle choices. Lower-income populations are disproportionately affected due to reduced access to quality food, safe physical spaces, and healthcare. Nigeria is witnessing this trend particularly in fast-growing urban centers where convenience foods and sedentary jobs dominate (Ehwarieme, 2024).

Health Implications of Obesity

Obesity is not merely a cosmetic issue. It is associated with a wide array of non-communicable diseases (NCDs), functional limitations, psychosocial consequences, and reduced life expectancy. The Global Burden of Disease (GBD, 2019) report attributed 5 million deaths annually to high BMI-related complications (Balu et al., 2021). The following are the major health implications:

1. Cardiovascular Diseases (CVDs):

Obesity is a major risk factor for hypertension, atherosclerosis, myocardial infarction, stroke, and heart failure. Visceral fat accumulation contributes to dyslipidemia and endothelial dysfunction. WHO estimates that obese individuals are 3 times more likely to develop ischemic heart disease compared to those with a normal weight (Bharathi et al., 2024).

2. Type 2 Diabetes Mellitus (T2DM):

Obesity particularly abdominal obesity is the leading cause of insulin resistance and T2DM. The International Diabetes Federation (IDF, 2021) revealed that over 90% of individuals with T2DM are either overweight or obese. In Nigeria, adult diabetes prevalence is rising rapidly, from 4.7% in 2013 to 5.8% in 2021, with obesity playing a central role (Ehwarieme, 2024).

3. Respiratory Disorders:

Excess fat around the chest and abdomen can impair lung function, increase the risk of obstructive sleep apnea, asthma, and obesity hypoventilation syndrome, resulting in fatigue, poor concentration, and cardiovascular strain (Alhomaïdan et al., 2024).

4. Musculoskeletal Complications:

Obesity increases mechanical stress on joints, accelerating the onset of osteoarthritis, especially in the knees, hips, and spine. It also limits physical mobility and fosters a sedentary cycle that worsens obesity (Xue et al., 2021).

5. Certain Cancers:

Increased adiposity has been implicated in the pathogenesis of several malignancies, including breast, colorectal, endometrial, kidney, gallbladder, and pancreatic cancers, due to mechanisms involving chronic inflammation, insulin resistance, and hormone dysregulation (Lee et al., 2025).

6. Reproductive and Hormonal Disorders:

Obesity disrupts hormonal balance, contributing to menstrual irregularities, infertility, gestational diabetes, and preeclampsia in women. In men, it may result in lower testosterone levels and erectile dysfunction (Mourad et al., 2024).

7. Psychosocial and Mental Health Impact:

Stigmatization, body image dissatisfaction, and weight bias frequently contribute to low self-esteem, social withdrawal, anxiety, and depression among university students—especially females. Moreover, fear of judgment in these settings can lead to unhealthy eating behaviors, such as binge eating, purging, and restrictive dieting. For instance, a study of 2,707 students found that interpersonal and anticipated weight stigma were significantly associated with higher odds of binge eating, purging, anxiety, and depression (Lipson & Sonnevile, 2024).

8. Reduced Life Expectancy and Quality of Life:

Obesity significantly reduces both the length and quality of life. WHO reports suggest that severe obesity can shorten life expectancy by 8–10 years, making it as impactful as smoking in terms of years lost. The burden of daily fatigue, low productivity, and reduced physical function also diminishes academic and professional performance (Ehwarieme, 2024).

For nursing students, obesity has far-reaching consequences. Not only does it affect their personal health, but it also undermines their role as health promoters. As future healthcare providers, nursing students are expected to model healthy behaviors, educate patients on nutrition, and lead by example in lifestyle modification counseling. A lack of knowledge or poor practice in dietary health promotion strategies compromises both their well-being and professional credibility (Olorunfemi et al., 2023)

2.1.2 Concept of Diet promotion strategies

Diet promotion strategies are coordinated actions aimed at encouraging individuals to adopt and maintain healthy eating habits to prevent nutrition-related conditions such as obesity, diabetes, and cardiovascular diseases. These strategies draw from nutrition science, behavioural change theories, public health policies, and practical interventions designed to improve individuals’

knowledge, shape positive attitudes, and promote consistent dietary practices. In the context of nursing students, diet promotion strategies are not only personally beneficial but also professionally relevant, as these students are future health educators and role models. Evidence from Nigeria shows that improving nutrition knowledge through structured education programs is associated with better attitudes and some improved dietary practices among undergraduates (Aremu, Akute, Aremu et al., 2025).

Dietary modification is a central component in the prevention and management of non-communicable diseases (NCDs), which continue to pose significant global health challenges. The World Health Organization (WHO, 2020) emphasizes that effective public health strategies should promote the adoption of nutrient-rich dietary patterns. These include regular consumption of fruits, vegetables, whole grains, lean proteins, and healthy fats, while simultaneously reducing the intake of trans fats, sodium, free sugars, and highly processed foods. Such dietary habits have been shown to lower the risk of obesity, cardiovascular disease, type 2 diabetes, and certain cancers.

In this context, public health campaigns especially those targeting young populations such as university students play a vital role in encouraging sustainable dietary changes that support long-term health outcomes. To this end, diet promotion strategies are typically multi-pronged, targeting knowledge acquisition, attitude transformation, skill development (such as meal planning and label reading), and environmental support, including the availability of healthy food options within schools and universities.

These interventions are especially critical in settings like tertiary institutions, where students are in a transitional life phase and are vulnerable to adopting poor dietary habits due to academic stress, lack of supervision, peer influence, limited finances, and time constraints (Dunham, 2024).

The core components of diet promotion strategies can be itemized and explained as follows:

1. Nutrition Education

This involves structured learning on basic dietary principles, food groups, energy requirements, and healthy meal planning. It equips individuals with the knowledge needed to make informed food choices. For nursing students, nutrition education can be integrated into academic coursework or delivered through seminars, workshops, and online programs. According to the World Health Organization (2020), dietary education is one of the most cost-effective strategies in preventing non-communicable diseases globally (Duvhal et al., 2024).

2. Behavioral Change Techniques

Behavioral strategies are used to influence how people think, feel, and act in relation to food. Models such as the Health Belief Model, Transtheoretical Model, and Social Cognitive Theory emphasize key factors like motivation, self-efficacy, readiness for change, and perceived benefits. Common behavioral tools include:

1. Self-monitoring (example: food diaries, mobile apps)
2. Goal setting (example: reducing soda intake per week)
3. Stimulus control (example: avoiding junk food environments)
4. Positive reinforcement (example: rewarding healthy eating habits)

These approaches help individuals translate knowledge into consistent action, which is crucial for weight management and obesity prevention (Tuncer et al., 2024; Kalita, 2025).

3. Policy and Environmental Strategies

Policies that support healthy eating can be implemented at institutional, governmental, or community levels. Examples include:

1. Limiting the availability of high-calorie snacks in school cafeterias
2. Providing affordable fruits and vegetables on campus
3. Requiring nutritional labeling in restaurants
4. taxing sugary beverages (as done in Mexico)

Unfortunately, in Nigeria, such policies are often poorly implemented. Fast-food outlets dominate university areas, and most school cafeterias lack healthy, affordable meal options (Styk et al., 2024; Ehwarieme, 2024)

4. Peer and Social Support

Peer-led initiatives such as group health challenges, healthy eating clubs, and campus-wide awareness campaigns are emerging as effective strategies for influencing dietary behavior among students. When peers work together toward collective goals for example, participating in a 30-day healthy eating challenge they tend to exhibit stronger adherence and sustained motivation compared to isolated efforts. Peer support fosters accountability, visualizes progress, and cultivates a supportive culture of wellness within academic environments. A recent systematic review of peer-led nutrition interventions in low- and middle-income countries, which included adolescents and young adults, found that these strategies significantly increased consumption of fruits and vegetables and reduced intake of unhealthy snacks, highlighting their potential impact in tertiary education settings (Effectiveness of Peer-Led Interventions, 2025).

5. Digital and Media-Based Interventions

Technology has revolutionized diet promotion. Mobile apps (example include: MyFitnessPal, FatSecret), online nutrition courses, and social media campaigns are now popular tools for spreading dietary awareness. These platforms provide features such as:

1. Calorie tracking
2. Personalized feedback
3. Healthy recipe ideas
4. Online coaching

However, their effectiveness depends on digital literacy, access to smartphones, and sustained engagement factors that vary among Nigerian students (Ehwarieme, 2024; Alsam et al., 2022).

6. Cultural and Contextual Adaptation

Effective diet promotion must consider the local food culture, socioeconomic status, and educational level of the target population. For example, promoting traditional African diets that are rich in fiber and plant-based nutrients may be more acceptable and sustainable than recommending Western diet patterns. Also, affordability and food accessibility are crucial, especially among students living on tight budgets (Madu et al., 2023).

7. Role Modeling by Health Professionals

Nursing students play a dual role: as individuals responsible for their own health and as future health professionals expected to model and teach healthy behaviors. If they adopt and practice good dietary habits themselves, they are better positioned to counsel patients confidently and effectively in clinical settings (Mafu et al., 2023).

Globally, countries such as the United Kingdom and Finland have shown success in implementing large-scale diet promotion programs. For example, the “Change4Life” campaign in the UK led to significant improvements in children’s eating behaviors, while Finland’s North Karelia Project reduced cardiovascular disease through dietary interventions across communities (Styk et al., 2024). In Nigeria, however, challenges persist. A 2024 study by Ehwarieme found that only 37% of university students had access to any form of structured nutrition education, and over 65% lacked basic knowledge of calorie balance and food portioning.

In summary, diet promotion strategies are comprehensive efforts designed to shape healthier dietary choices through education, behavior change, policy support, and peer influence. Among nursing students, these strategies not only contribute to their personal health but also enhance their future ability to educate and counsel patients. As the obesity crisis continues to rise, especially among youths, implementing and strengthening these strategies in academic environments like the

University of Benin becomes both urgent and necessary (Blake et al., 2021).

2.1.3 Obesity Prevention through dietary strategies

Obesity prevention through dietary strategies focuses on the deliberate adoption of eating patterns that support healthy body weight, reduce fat accumulation, and prevent the development of diet-related non-communicable diseases. These strategies aim to correct nutritional imbalances, improve food quality, and create sustainable eating habits. Among nursing students and the general population, preventive approaches through diet are central to reversing the growing trend of obesity, especially in an era where processed foods and sedentary lifestyles are increasingly prevalent. Given the escalating global and local burden of obesity, integrating preventive dietary measures has become an urgent public health priority (Albasheer et al., 2024).

The following are the key dietary strategies used in preventing obesity, itemized and explained in detail:

1. Adoption of Balanced, Nutrient-Dense Diets

A balanced diet provides all essential nutrients in appropriate proportions and energy levels to maintain health. This includes:

1. High intake of fruits and vegetables (at least five servings per day)
2. Whole grains such as brown rice, oats, and millet
3. Lean proteins including legumes, fish, and poultry
4. Healthy fats like those found in avocado, nuts, and olive oil
5. Low intake of saturated fats, trans fats, and refined sugars

The World Health Organization (2021) emphasizes that healthy diets can reduce the risk of obesity by up to 40%. In Nigeria, dietary patterns are shifting from traditional fiber-rich meals to high-calorie, low-nutrient fast foods, especially among youths. Promoting a return to traditional diets, such as those rich in vegetables, okra, unripe plantain, beans, and fish, may serve as a culturally acceptable and sustainable strategy for obesity prevention (Ehwarieme, 2024)

2. Portion Control and Caloric Awareness

Many individuals unknowingly consume more calories than needed, leading to gradual weight gain. Portion control involves understanding serving sizes and avoiding overeating, even with healthy foods (Madu et al., 2023). Strategies include:

1. Using smaller plates and bowls
2. Avoiding second servings
3. Being mindful of calorie-dense snacks and drinks

Educational interventions that improve calorie literacy have been shown to significantly reduce energy intake.

3. Reduction of Sugar and Sugar-Sweetened Beverages (SSBs)

Excessive sugar intake contributes significantly to weight gain and abdominal fat accumulation. Sugary drinks such as sodas, energy drinks, and sweetened fruit juices offer high calories with little nutritional benefit. Effective strategies include:

1. Replacing sodas with water, unsweetened tea, or natural fruit-infused water
2. Educating about hidden sugars in packaged snacks and cereals
3. Implementing institutional restrictions on the sale of SSBs

Globally, countries like Mexico have introduced sugar taxes that led to a 10% reduction in soda consumption within the first year (WHO, 2022; Saxena et al., 2024). In Nigeria, where sweetened beverages are widely consumed in tertiary institutions, such regulatory measures are rare. Among university students, soft drinks are often consumed daily, contributing to the rising obesity prevalence in this group (Ehwarieme, 2024).

4. Increasing Dietary Fiber Intake

Fiber aids in digestion, prolongs satiety, and reduces the overall calorie density of meals. Sources include vegetables, fruits, whole grains, beans, and nuts. A high-fiber diet slows glucose absorption and reduces hunger, which helps prevent overeating. WHO recommends at least 25–30 grams of fiber per day, yet studies have shown that most Nigerian students consume less than half of this amount due to low fruit and vegetable intake and preference for refined grains (Madu et al., 2023).

5. Mindful Eating and Behavior Modification: Mindful eating involves paying full attention to the experience of eating, including taste, texture, hunger cues, and satiety signals. It helps individuals recognize when they are full, reduce emotional eating, and avoid distractions like TV or phone use during meals. Behavioral changes such as keeping food diaries, planning meals ahead, and avoiding late-night eating also play a crucial role in weight control. Evidence suggests that integrating mindful eating practices into daily life can reduce binge eating episodes and caloric intake by up to 20%, especially among young adults (Mourad et al., 2024). For nursing students, this practice also cultivates self-discipline and models healthy eating behaviors they can share with patients.

6. Promotion of Regular Meal Patterns

Skipping meals, especially breakfast, has been associated with increased risk of obesity due to compensatory overeating later in the day. Eating at consistent times helps regulate metabolism and prevents extreme hunger. Strategies include:

1. Eating three balanced meals a day
2. Avoiding skipping breakfast
3. Incorporating small, healthy snacks if needed

7. Limiting Processed and Fast Foods

Processed and ultra-processed foods are high in calories, unhealthy fats, sodium, and additives, yet low in fiber and essential nutrients. Frequent consumption of items like meat pies, instant noodles, fried snacks, and sugary pastries has become common among students due to convenience and low cost. Preventive strategies include:

1. Encouraging home-cooked meals
2. Replacing fried snacks with baked or grilled alternatives

3. Promoting healthy vending options on campus

Fast food consumption among Nigerian youths has increased by over 60% in the last decade, according to a report by the Nigerian Heart Foundation (2021), making this a major target area for intervention (Ehwarieme, 2024).

8. Public and Campus-Based Nutrition Campaigns

Mass education efforts, especially within schools, can significantly shape attitudes and behaviors. Posters, health talks, nutrition clubs, and awareness weeks organized by school health departments or student bodies can raise awareness and create a health-conscious campus culture. Campaigns like the “Healthy UNIBEN Initiative” (if introduced) could serve as platforms to engage nursing students and encourage leadership in promoting healthy eating.

In conclusion, dietary strategies for obesity prevention are multifaceted and require consistent practice, supportive environments, and tailored education. For nursing students, who are at a formative stage of adulthood and professional identity, these strategies are particularly essential. Equipping them with the knowledge and habits to prevent obesity will not only improve their personal health outcomes but also enhance their credibility and effectiveness as future nurses and public health advocates (Balu et al., 2021).

2.2 Theoretical review

Health Belief Model

Enter your subhead line here

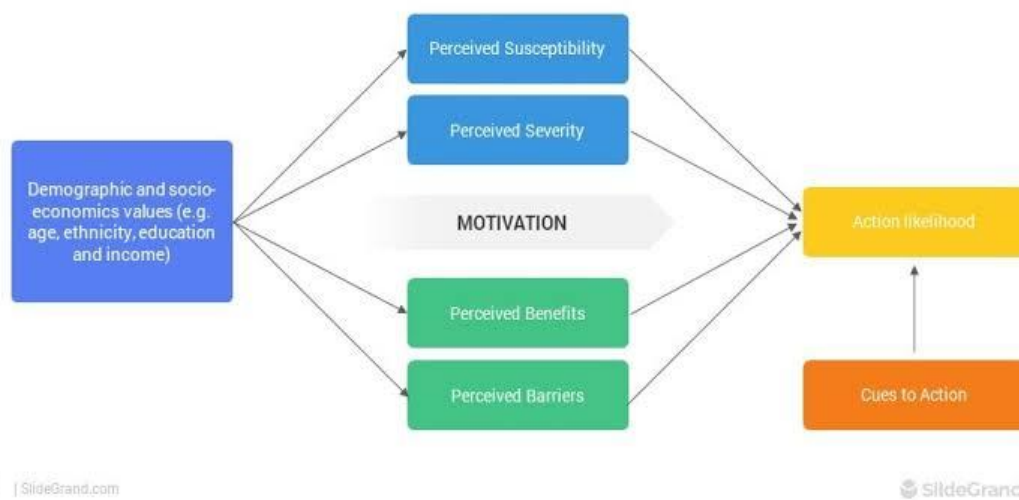


Fig 2.2 Schematic Illustration of the Health Belief Model (Mohebian et al., 2025)

2.2.1 Health Belief Model (HBM)

This study adopts the Health Belief Model (HBM) as its theoretical framework to explain the factors influencing the knowledge, attitude, and practice of diet promotion strategies in the prevention of obesity among nursing students at the University of Benin. Developed in the 1950s by social psychologists Hochbaum, Rosenstock, and Kegels, the HBM remains one of the most widely used models to understand and predict health-related behaviors, particularly in preventive health care (Albasheer et al., 2024). The model posits that an individual's decision to engage in health-promoting behaviors is determined by personal beliefs about health conditions and the perceived value of taking preventive action. The core constructs of the HBM—perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action, and self-efficacy provide a comprehensive framework for understanding how nursing students approach dietary practices for obesity prevention.

Perceived Susceptibility:

This construct refers to an individual's belief about the likelihood of experiencing a health condition. In the context of this study, it relates to the extent to which nursing students believe they are personally at risk of becoming obese. Students who perceive themselves as vulnerable due to lifestyle choices, family history, or poor dietary habits are more likely to seek knowledge and adopt healthy dietary practices. Conversely, a low perception of susceptibility may result in complacency and reduced motivation to engage in preventive strategies.

Perceived Severity:

Perceived severity deals with how serious an individual believes the consequences of a health issue to be. For nursing students, recognizing obesity as a serious condition with far-reaching health implications such as cardiovascular disease, type 2 diabetes, musculoskeletal disorders,

and psychological distress can significantly shape their attitude toward prevention. An informed understanding of the health risks associated with obesity may encourage a more proactive approach to dietary habits and health promotion.

Perceived Benefits:

This component relates to the belief in the effectiveness of taking a particular action to reduce the threat of illness. If nursing students believe that adopting diet promotion strategies, such as healthy eating, portion control, and meal planning can effectively prevent obesity, they are more likely to engage in such behaviors. Their academic background in health sciences may also reinforce the benefits of healthy dietary practices, further encouraging compliance.

Perceived Barriers:

Perceived barriers refer to the individual's assessment of the obstacles that may hinder the adoption of a health behavior. Despite knowledge of the benefits of healthy eating, nursing students may encounter challenges such as the high cost of nutritious foods, limited time due to academic workload, lack of access to healthy meals, and peer influence. These barriers can negatively influence their ability or willingness to consistently practice diet-promoting behaviors.

Cues to Action:

These are the internal or external triggers that prompt individuals to take health-related action. Among nursing students, cues to action may include classroom discussions on nutrition, personal health experiences, health campaigns, clinical exposure to patients with obesity-related complications, or even peer encouragement. These cues can serve as motivators that reinforce the importance of healthy eating habits.

Self-Efficacy:

Self-efficacy is the confidence in one's ability to successfully perform a specific behavior. High self-efficacy enables individuals to overcome challenges and maintain health-promoting behaviors even in the face of obstacles. For nursing students, self-efficacy may be influenced by their educational training, prior experiences, and access to health information. Students with strong confidence in their ability to make healthy dietary choices are more likely to translate knowledge and positive attitudes into consistent practice.

In summary, the Health Belief Model offers a robust framework for understanding the complex interplay between beliefs, attitudes, and behaviors in the context of obesity prevention through dietary practices. By applying this model, the study aims to explore how nursing students' perceptions influence their approach to diet promotion strategies. It also helps to identify potential areas for intervention to enhance the effectiveness of obesity prevention programs within the university setting.

2.2.2 Application of health belief model to the study

The Health Belief Model (HBM) is applied in this study to understand the factors influencing nursing students' knowledge and attitude of diet promotion strategies in the prevention of obesity. By examining perceived susceptibility, the study explores whether students acknowledge their personal risk of becoming obese, while perceived severity assesses their awareness of the serious health consequences associated with obesity. The study also investigates perceived benefits, such as beliefs in the effectiveness of healthy eating in preventing weight gain, and perceived barriers like cost, time constraints, and peer influence that may hinder dietary adherence. Cues to action, such as health education, clinical exposure, or media messages, are evaluated as triggers that motivate students to adopt healthy behaviors,

while self-efficacy reflects their confidence in maintaining consistent dietary habits despite challenges. Together, these constructs help explain the behavioral patterns of nursing students regarding diet promotion and provide a framework for developing effective obesity prevention interventions.

2.3 Empirical review

2.3.1 The level of knowledge about obesity, and its causes, consequences ,prevention strategies among nursing students

Guzmán and Carranza-Madrigal (2022) conducted a descriptive, cross-sectional study to assess the level of knowledge, self-perception, and nutritional status of nursing students regarding overweight and obesity. The study involved 133 students from the School of Nursing and Public Health at UMSNH. Findings revealed that while the majority of students (96%) understood the concept of obesity and recognized it as a serious public health issue, gaps still existed in their overall knowledge. Specifically, only 52% of the students knew how to diagnose obesity, and many admitted to having poor dietary habits. Furthermore, there was a notable disconnect between students' self-perception of their body weight and their actual body mass index (BMI), with only 60% having a normal BMI despite a higher number perceiving themselves as being of normal weight. The study concludes that although basic awareness of obesity is present among the students, their knowledge remains insufficient to influence meaningful behavior change, particularly in promoting healthy eating habits and accurate self-assessment of body weight.

Putriliady et al. (2023) conducted a study to examine the impact of health education on students' knowledge and attitudes toward dietary practices aimed at preventing obesity at SMK Mahaputra Cerdas Utama in Bandung Regency. The study adopted a one-group pretest-posttest design under a pre-experimental framework, with a sample size of 125 students selected through proportionate

stratified random sampling. The Wilcoxon test was used for statistical analysis. Findings revealed a statistically significant improvement in both knowledge and attitudes following the health education intervention, as indicated by a p-value of 0.000 for both variables, which is less than the 0.05 threshold. These results suggest that health education can effectively influence students' awareness and mindset concerning dietary habits for obesity prevention. The researchers recommended the continuation of healthy dietary practices and increased physical activity among students as preventive measures against obesity. This study underscores the role of structured educational interventions in promoting positive behavioral change among adolescents.

Kherailah et al (2025) carried out a cross-sectional study to evaluate the prevalence, determinants, and level of knowledge regarding overweight and obesity among grade 7–12 students in Duhok city. The study involved 500 students, equally divided between males and females, and utilized both anthropometric measurements and a structured questionnaire to assess knowledge, risk factors, and dietary behaviors. Findings revealed that while a considerable proportion of students had poor dietary habits contributing to overweight and obesity, there was also a statistically significant relationship between students' level of knowledge and their BMI. This indicates that students with better understanding of overweight and obesity were more likely to maintain a normal BMI. However, the overall knowledge level appeared inadequate in preventing unhealthy behaviors, as a large portion of students consumed fast food, fizzy drinks, and energy drinks regularly. The study emphasizes the importance of enhancing students' knowledge through targeted health education, as awareness appears to play a critical role in shaping healthier lifestyle choices.

2.3.2 Nursing students' attitudes toward obesity prevention

Arvelo-Rodríguez et al. (2025) conducted a systematized review to explore and synthesize existing literature on the attitudes and behaviors of nurses and nursing students toward patients with obesity. The review covered studies published between 2018 and 2023, using multiple academic databases and applying rigorous inclusion criteria that focused on research involving nurses or nursing students caring for adults with obesity. Out of 166 initially identified articles, 14 met the criteria for inclusion. The review revealed that nurses and nursing students commonly exhibit negative attitudes and weight-related biases toward patients with obesity. Although some studies assessed interventions to reduce such biases, the overall findings indicate that weight stigma remains prevalent in healthcare settings. The review underscores the importance of addressing this issue through both academic and clinical training, emphasizing the need for educational strategies that can reshape perceptions and improve the quality of care for individuals living with obesity. This highlights a gap in professional knowledge and empathy that must be filled through targeted, evidence-based educational initiatives.

Similarly, Tuncer et al. (2024) conducted a cross-sectional correlational study to explore the relationship between nursing students' attitudes and beliefs about individuals with obesity and their levels of empathy and body image flexibility. The study involved 445 nursing students from Dokuz Eylül University and utilized several standardized tools, including the *Beliefs About Obese Persons (BAOP)* scale, *Attitudes Toward Obese Persons (ATOP)* scale, *Toronto Empathy Scale (TES)*, and *Body Image Flexibility Scale (BIFS)*.

Results showed that students who scored higher in empathy and body image flexibility were significantly more likely to have fewer negative beliefs and more positive attitudes toward individuals with obesity. Specifically, greater empathy and body image flexibility were linked to

a reduction in weight-based stigma and a more inclusive outlook. This suggests that fostering empathy and self-awareness in nursing students is essential in shaping their perceptions and professional conduct regarding obesity.

The findings highlight the importance of integrating topics on body image, stigma reduction, and empathetic communication into nursing curricula to cultivate a more supportive and non-judgmental approach to patient care.

in a related context, other researchers have also examined the level of knowledge and attitudes toward obesity among university students in different cultural settings, revealing similar patterns of awareness and perception.

Abdulbaqi et al. (2024) conducted a cross-sectional study to evaluate the knowledge and attitudes of undergraduate students in Karbala Province, Iraq, toward obesity. The study included 444 students selected through simple random sampling and utilized a self-administered questionnaire developed according to WHO guidelines.

The findings revealed that while a majority of the participants (54%) possessed a good or acceptable level of knowledge about obesity—its causes, risks, and prevention—a significantly larger proportion (over 86%) demonstrated a positive attitude toward combating the condition. This indicates a promising level of awareness and a willingness among students to engage in preventive behaviors, despite the fact that nearly half still had gaps in their knowledge.

The results emphasize the importance of reinforcing educational strategies aimed at improving students' understanding of obesity, as their informed attitudes and practices can positively influence their peers, families, and broader community health.

2.3.3 Barriers to implementing diet promotion strategies

Almutairi et al. (2022) conducted a qualitative study to explore the perceived barriers and enablers to implementing school-based obesity prevention strategies in Jeddah, Saudi Arabia. Through 14 semi-structured interviews with intermediate school principals and sports teachers, the study gathered insights into the challenges schools face in addressing childhood obesity.

Although not directly focused on student knowledge, the study highlighted a broader educational gap namely, the absence of nutrition and physical activity instruction within school curricula and the lack of trained teachers to deliver such content. Participants reported that students' unhealthy lifestyles were partly due to limited awareness and poor understanding of healthy behaviors, which underscores the need for improving students' knowledge regarding nutrition and physical activity.

The study emphasized that effective obesity prevention in schools requires not only structural and policy-level support from the Ministry of Education but also enhanced educational strategies that target both teachers' competencies and students' knowledge. By addressing these barriers and reinforcing enablers such as supportive staff and community partnerships, schools can become pivotal environments for educating students about healthy weight management and long-term wellness.

Recent evidence highlights multiple barriers that nurses face in promoting health and implementing interventions for childhood and adolescent obesity. Wright et al. (2021) conducted a systematic review of nurse-led obesity interventions and identified key challenges such as limited professional training, inadequate confidence in counseling, and time constraints within clinical practice. Similarly, Bradbury et al. (2018) found that healthcare professionals often encounter difficulties initiating weight-related discussions with patients and parents due to fear

of causing offense, lack of communication skills, and insufficient institutional support. Complementing these findings, Proaño et al. (2024) reported that broader systemic barriers including limited funding, poor coordination among stakeholders, and weak policy enforcement hinder the effectiveness of obesity prevention strategies in low- and middle-income settings. Collectively, these studies underscore the need for enhanced professional education, supportive policies, and multidisciplinary collaboration to strengthen nurses' capacity in implementing effective obesity prevention interventions. On the other hand, the most frequently mentioned facilitators included policy integration, program adaptability, active community involvement, and effective collaboration among stakeholders. The authors concluded that while moderate evidence supports the positive influence of these interventions on obesity-related outcomes, longer-term studies are needed to establish sustainable impact. Strengthening political commitment, resource allocation, and stakeholder coordination is essential for improving the effectiveness of obesity prevention strategies in Colombia.

2.4 Summary of literature review

The literature review delved into the concept of obesity, its prevalence, causes, and the importance of dietary strategies in its prevention, particularly in nursing students. Obesity is a major global health challenge, defined as excessive fat accumulation that significantly increases the risk of numerous chronic diseases, including cardiovascular diseases, diabetes, and certain cancers. Global and Nigerian prevalence rates highlight the widespread nature of the issue, with WHO statistics showing over 650 million obese adults globally and Nigerian obesity rates rising steadily. Key causes of obesity include poor dietary patterns, sedentary lifestyles, genetic predisposition, and environmental influences. Despite growing awareness of these factors, the challenge of obesity persists, necessitating targeted interventions such as dietary strategies and

public health campaigns to promote healthier food choices. The review emphasizes the importance of adopting a balanced diet, which includes increased consumption of fruits, vegetables, and reduced intake of processed foods, as an effective way to prevent obesity.

The theoretical framework that guided this study was the Health Belief Model (HBM), which suggests that health behaviors are influenced by individuals' perceptions of the severity of health issues, susceptibility to those issues, benefits of action, and barriers to taking action. The HBM is particularly relevant in understanding how nursing students perceive obesity and their attitudes toward preventive behaviors like dietary changes. Despite the growing emphasis on health promotion in nursing education, existing studies have primarily focused on the combined dimensions of knowledge and attitude regarding diet and obesity prevention. However, there remains a paucity of research that distinctly examines the relationship between knowledge and attitude, independent of practice. Limited evidence exists on how nursing students' awareness of diet promotion strategies translates into their attitudes toward obesity prevention. Moreover, few studies have applied the Health Belief Model to understand how perceptions of susceptibility, severity, and barriers influence these attitudes. This gap is particularly evident in the Nigerian context, where cultural, environmental, and educational factors may shape students' perspectives differently. Thus, this study aims to fill this gap by investigating the knowledge and attitude of nursing students toward diet promotion strategies in the prevention of obesity within a tertiary institution in Edo State. Ultimately, understanding these perceptions can inform interventions to promote healthier behaviors among nursing students, who are key players in the larger effort to combat obesity.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Overview

Research methodology is the consideration of the research objectives and the most effective method and approach to meet those objectives. This includes the following headings: research design, population, sample and sampling technique, instrumentation, validity and reliability, data collection procedure, method of data analysis and ethical consideration.

3.1 Research Design

A research design refers to the overall strategy that a researcher chooses to integrate the different components of a study in a coherent and logical way, thereby ensuring the research problem is effectively addressed. It serves as the blueprint for data collection, measurement, and analysis (Creswell, 2014). This study used a descriptive cross-sectional non-experimental design (Abba, 2020). A descriptive study is carried out to describe situations and events. This study was focused on overall well-being of student nurses. It investigated on the Knowledge and attitude of diet promotion strategies in prevention of obesity amongst nursing students in the university of Benin, Benin City, Edo State.

3.2 Research Setting

This study was conducted in Edo State, located in the South-South geopolitical zone of Nigeria. Edo State has Benin City as its capital and is known for its rich cultural heritage, educational institutions, and healthcare infrastructure. The state has several tertiary institutions that contribute to the training of professionals in various fields, including health and nursing sciences.

Within Edo State, the study was carried out at the Faculty of Nursing, University of Benin, situated in the Ovia North-East Local Government Area. The University of Benin, established in 1970, is one of Nigeria’s foremost federal universities, recognized for its commitment to academic excellence and research advancement. The institution comprises 13 faculties and over 70 departments offering a wide range of programs.

The Department of Nursing Science is located within the College of Medical Sciences at the University of Benin. It offers both undergraduate and postgraduate programs aimed at preparing competent and professional nurses. The department is equipped with modern nursing laboratories, simulation centers, and access to clinical placements in affiliated hospitals and health facilities. Its emphasis on evidence-based practice, research, and community health promotion makes it an ideal environment for conducting this study.

3.3 Target Population

The target population for this study were the student nurses of University of Benin (UNIBEN), Faculty of Nursing Sciences, Benin City Edo State. This population was gotten by taking a retrospective review of the total population of the undergraduate students of Nursing Science faculty from 200 level to 500 level in the month of July 2025, which is 713

Table 3.1: Population of students in the Department of Nursing Sciences- July 2025

Level	Number of Students
200	174
300	192
400	183
500	164

Total:713 (Department of nursing ,(July,2025)

3.4 Sampling Size Determination

Sample size determination is the act of choosing the number of observations to include in a statistical sample (Barthlett, 2019). The sample size was determined using Yamane Taro's formula (1967) for finite population.

$$n = N/[1+n(e)^2]$$

n= sample size

N= population size

e= level of precision

Where.

$$N= 713$$

$$E= 0.05$$

Therefore, the sample size will be:

$$n=713/ [1+713(0.05)^2]$$

$$n= 713/[1+713(0.0025)]$$

$$n=713/ [1+1.7825]$$

$$n=713/2.7825 = 256.244385 \sim 256$$

$$n = 256$$

With 10% attrition rate, which is 25.6 ~ 26

$$n = 256 + 26$$

$$= 282$$

The sample size for this study was 282 student nurses.

Table 3.2 Proportional sampling calculation:

200 level	$174/713 \times 282$	69
300 level	$192/713 \times 282$	76
400 level	$183/713 \times 282$	72
500 level	$164/713 \times 282$	65

Inclusion criteria

- i. Students who are in the Faculty of Nursing Sciences at the University of Benin (UNIBEN).
- ii. Students that are ready to participate after clarification about the purpose of the study.
- iii. Those who were present during the period of data collection.

Exclusion Criteria

- I. Students of the faculty of nursing sciences that are not interested in participating in the study.
- II. Students who were not present in lecture room during the period of data collection.
- III. 100 level nursing students

3.5 Sampling Technique

According to Creswell (2014), a sample is a subset of individuals selected from a population to represent the characteristics of the whole group. The sampling technique for this study was Convenient sampling technique. Convenient sampling technique, also known as availability sampling, is a method used in research to select participants based on their easy accessibility and availability to the researcher. Unlike random sampling methods where every member of the population has an equal chance of being selected, convenient sampling relies on the convenience of choosing individuals who are readily accessible or easy to reach. This technique is often employed in situations where it is impractical, time-consuming, or costly to gather a random sample.

3.6 Instrument for Data Collection

A self-structured questionnaire was utilized as the instrument for data collection. The questionnaire contained closed-ended questions that were carefully drafted, sequenced, and constructed to gather in-depth information from participants in line with the objectives of the study. The questionnaire comprised of sections. The questions consisted of four major sections A, B, C, and D according to the objectives that were set to be achieved;

Section A contained questions relating to the demographic data of the respondents which included age, gender, religion, marital status level of study. it contained a number of 5 questions.

Section B helped determine the level of knowledge about obesity, its causes, consequences and prevention strategies amongst nursing students at the university of Benin and contained a number of 5 questions to ask respondents.

Section C assessed nursing students attitudes toward obesity prevention and their perceived role in promoting healthy dietary practices. This contained a number of 5 questions.

Section D helped identify barriers to implementing diet promotion strategies for obesity prevention amongst nursing students which also contained a number of 5 questions to ask respondents.

3.7 Validity of Instrument

Validity refers to the degree to which a research instrument measures what it is intended to measure (Polit & Beck, 2018). The instrument was validated through face and content validity. To ensure the validity of the instrument, the questionnaire was structured in relation with the research topic and the project supervisor was consulted to scrutinize the questionnaire and other statistician in the University of Benin. Due corrections were made before distributed. The questionnaire measured what it was supposed to measure and this was ensured by face and content validity.

3.8 Reliability of instrument

The reliability of an instrument refers to its ability to produce consistent results when repeated under similar conditions (Kothari, 2011).How the instrument consistently measures what it is intended to measure. The cronbachs alpha reliability technique was employed in this study. This researcher conducted a reliability testing on the instrument by distributing 28 questionnaires ,which constituted 10% of the total sample size of 282 to students of college of nursing science, University of Benin teaching hospital(which have the same characteristics of the study population). a coefficient of 0.71 was obtained the instrument was considered reliable.

The reliability of the instrument was established using the internal consistency method with the Cronbach's Alpha coefficient. This method was chosen over the test-retest and split-half techniques because the questionnaire measured multiple constructs (knowledge and attitude) that required internal homogeneity rather than stability over time.

The application of assessing the reliability of an instrument in research is crucial for several reasons:

1. **Consistency of Measurements:** Reliability ensures that the instrument consistently measures what it's intended to measure over time and across different conditions. This consistency is essential for meaningful and accurate research results.

2. **Validity Support:** A reliable instrument is a foundation for establishing validity. Researchers often use reliability as evidence that their instrument is measuring the intended construct. If a measure is not reliable, it is unlikely to be valid.

3. **Comparability:** Reliability allows for comparisons within and across studies. When an instrument is reliable, you can confidently compare results from different groups, time points, or research settings.

4. **Reduced Measurement Error:** High reliability reduces measurement error, making research findings more robust and trustworthy. It helps to distinguish real differences from random variability.

3.9 Method of Data Collection

A well-structured questionnaire was administered to the students until the required sample size of 282 students was achieved. The students were approached in their classrooms at the school on

different days, The purpose of the study was explained to them, and the instrument for data collection was administered. Data collection was conducted by the researcher using a balloting method.eg 200 level 69 participants out of 174 chose yes and the others no. The data collection took place during break periods(12-1pm) and on-the-spot retrieval of the administered copies of the questionnaire to ensure that all copies were collected on the same day. Data collection lasted for about two weeks.

3.10 Method of Data Analysis

The data collected was analyzed using the Statistical Package for the Social Sciences (SPSS) version 26.0. Descriptive statistics such as mean, frequency, and percentages were computed to summarize the data. Hypothesis testing was conducted using the Chi-square test of association, with the level of significance set at $p < 0.05$. The results of the analyses was then presented using tables, frequencies, and percentages to provide a clear overview of the findings.

3.11 Ethical Consideration

Ethical considerations in research refer to the principles and guidelines that ensure the protection of participants' rights, welfare, and dignity throughout the research process (Sobočan, Bertotti, & Strom-Gottfried, 2020).Permission to carry out the study was obtained from the Health Research Ethics Committee of University of Benin. Evidence to be attached. Privacy is one of the most important aspects of human life and thus, privacy was not abused, during the conduct of the research. The code of ethics serves the purpose of safeguarding the rights of individuals who participate in research. These include;

Voluntary Participation: Respondents were not forced into participating in the research project.

Privacy: was maintained during the filling of the questionnaires, hence no names was requested.

Avoidance of plagiarism: Other studies used were properly acknowledged

CHAPTER FOUR RESULTS AND FINDINGS

4.0 Overview

This chapter presents the results obtained from the study titled "Knowledge and Attitude of Diet Promotion Strategies in the Prevention of Obesity Amongst Nursing Students in a Tertiary Institution in Edo State." A total of 282 nursing students participated in the study. The results are organized according to the study objectives: socio-demographic characteristics, knowledge and attitude related to diet promotion strategies.

4.1 Socio-demographic characteristics of respondents

The socio-demographic profile of the respondents is shown in Table 4.1.

Table 4.1: Socio-demographic characteristics of respondents

Variable	Category	Frequency (n=282)	Percentage (%)
Age	<20 years	50	17.7%
	20-24 years	140	49.6%
	25-29 years	65	23.0%
	30-34 years	20	7.1%
	35 years and above	7	2.5%
Gender	Male	80	28.4%
	Female	202	71.6%
Religion	Christianity	250	88.7%
	Islam	28	9.9%
	Traditional	4	1.4%
Marital Status	Single	260	92.2%
	Married	20	7.1%
	Divorced	2	0.7%
Level of Study	200 Level	70	24.8%
	300 Level	80	28.4%
	400 Level	75	26.6%
	500 Level	57	20.2%

From the table, the majority of the respondents were aged 20–24 years (49.6%), female (71.6%), Christians (88.7%), single (92.2%), and mostly in 300 level (28.4%). The sociodemographic characteristics of the respondents in this study provide essential context for understanding their perspectives on diet promotion strategies in the prevention of obesity. A total of 282 nursing students participated, with the majority falling within the 20–24-year age bracket, representing 49.6% of the sample. This age distribution is expected, given the typical undergraduate timeline, although other age groups such as those under 20 and those between 25–29 years were also represented to a lesser extent. In terms of gender, a significantly larger proportion of the respondents were female (71.6%), reflecting the broader trend in the nursing profession, where women tend to dominate numerically. Religiously, the population was predominantly Christian, accounting for 88.7% of respondents, followed by Muslims at 9.9%, and a small minority identifying with traditional religions. Marital status data revealed that 92.2% of the respondents were single, further reinforcing the youthful nature of the study group, with very few married (7.1%) or divorced (0.7%) individuals. Participants were also fairly evenly distributed across different academic levels, with the highest proportion being in 300 level (28.4%), followed closely by those in 400 level (26.6%), 200 level (24.8%), and 500 level (20.2%). Overall, this demographic profile suggests that the study participants were mostly young, unmarried female students in the mid-stages of their nursing education, providing a cohesive backdrop for interpreting their knowledge and attitudes related to obesity prevention and dietary health promotion.

4.2 Knowledge about obesity, its causes, consequences, and prevention among nursing students in the university of Benin

Table 4.2: Knowledge of obesity among respondents

Knowledge Item	Yes (2)	No (1)	Don't Know (0)	Mean	Decision
Obesity is defined as excessive body fat	260	15	7	1.92	High Knowledge
Poor dietary habits contribute to obesity	270	10	2	1.95	High Knowledge
Obesity increases risk for chronic diseases	255	20	7	1.88	High Knowledge
Regular physical activity prevents obesity	250	25	7	1.86	High Knowledge
Healthy lifestyles can prevent/manage obesity	270	8	4	1.94	High Knowledge

The responses on the knowledge of obesity among nursing students, presented in Table 4.2, reveal a high level of awareness across all measured items. The overall mean knowledge score was 1.91, which falls within the “high knowledge” category. Specifically, the highest-rated item was recognizing the contribution of poor dietary habits to obesity ($M = 1.95$), followed closely by the role of healthy lifestyles in preventing and managing obesity ($M = 1.94$). Students also demonstrated strong understanding of the definition of obesity as excessive body fat ($M = 1.92$), the link between obesity and chronic diseases ($M = 1.88$), and the importance of regular physical activity ($M = 1.86$). These consistently high mean scores indicate that the respondents possess a solid knowledge base about obesity, its causes, and prevention strategies. This reflects both the impact of their nursing education and their readiness to apply such knowledge in promoting obesity prevention within clinical and community settings.

4.3 Nursing students attitudes toward obesity prevention and their perceived role in promoting healthy dietary practices

Table 4.3: Attitudes of nursing students towards diet promotion

Attitude Item	Always (4)	Sometimes (3)	Rarely (2)	Never (1)	Mean	Decision
Responsibility to educate patients about obesity	180	70	25	7	3.50	Positive
Encourage healthy eating habits	190	65	20	7	3.55	Positive
Consider obesity prevention important for future role	200	60	15	7	3.60	Positive
Confident discussing healthy diets	160	90	25	7	3.43	Positive
Role-modeling healthy eating practices	150	85	40	7	3.34	Positive
Overall Mean					3.48	Positive

Interpretation: All items recorded mean values above 3.0, indicating generally positive attitudes of nursing students toward diet promotion and obesity prevention.

The responses on the attitudes of nursing students toward diet promotion, as presented in Table 4.3, show a generally positive disposition toward obesity prevention. The overall mean score was 3.48, which falls within the “positive” decision range. The highest-rated attitude was that students considered obesity prevention important for their future role ($M = 3.60$), reflecting a strong professional commitment. Similarly, encouraging healthy eating habits ($M = 3.55$) and taking responsibility for educating patients about obesity ($M = 3.50$) also recorded high positive means, underscoring their proactive stance toward patient education. Confidence in discussing healthy diets was rated at a mean of 3.43, which, though still positive, indicates a slightly lower level of confidence compared to other items, suggesting a need for further training in counseling skills. Role-modeling healthy eating practices had the lowest mean ($M = 3.34$), but it still

reflected a positive attitude. These findings confirm that nursing students are well-prepared and positively inclined to integrate diet promotion into their future professional roles, even though some gaps in self-confidence and consistency in role-modeling remain

4.4 Barriers to Implementing Diet Promotion Strategies for obesity prevention amongst nursing students

Table 4.4: Barriers to diet promotion Strategies for obesity prevention amongst nursing students.

Barrier Item	Strongly Agree (4)	Agree (3)	Disagree (2)	Strongly Disagree (1)	Mean	Decision
Lack of time during clinicals prevents dietary education	180	70	25	7	3.50	Major Barrier
Adequate training to provide guidance	120	100	50	12	3.16	Moderate Facilitator
Limited access to nutritional materials	170	80	25	7	3.49	Major Barrier
Support from instructors	190	65	20	7	3.55	Major Facilitator
Poor personal diet affects promotion efforts	150	90	35	7	3.36	Moderate Barrier
Overall Mean					3.41	Moderate–High Barrier/Facilitator

Interpretation: Means above 3.0 indicate respondents generally agreed with most barriers/facilitators. The strongest facilitator was support from instructors (M = 3.55), while the most prominent barrier was lack of time during clinicals (M = 3.50).

The findings on the barriers and facilitators to diet promotion are summarized in Table 4.4. The overall mean score of 3.41 suggests that respondents generally agreed that significant barriers and facilitators exist in the clinical context. The most prominent facilitator was support from instructors (M = 3.55), indicating that encouragement from faculty members plays a crucial role

in motivating students. Adequate training to provide dietary guidance was rated moderately (M = 3.16), showing that while training is perceived as helpful, more comprehensive and practical exposure is needed.

On the barrier side, lack of time during clinicals emerged as a major challenge (M = 3.50), reflecting the constraints imposed by busy clinical schedules. Limited access to nutritional materials also scored high (M = 3.49), emphasizing the need for institutional support in providing up-to-date educational resources. Poor personal diet was a moderately rated barrier (M = 3.36), highlighting how personal lifestyle choices can influence professional practice. Overall, the results demonstrate that while students are motivated and supported, systemic barriers—particularly time constraints and resource limitations—hinder their effectiveness in diet promotion.

4.5 Test of hypothesis

Table 4.5: Relationship between knowledge and attitude of diet promotion strategies

Variables	N	r	p-value	Decision
Knowledge vs attitude	282	0.412	0.000	Significant

Interpretation:

The Pearson correlation coefficient ($r = 0.412$, $p < 0.05$) shows a moderate positive relationship between knowledge and attitude of nursing students toward diet promotion strategies. This implies that higher knowledge levels are associated with more positive attitudes toward obesity prevention.

Since the p-value was less than 0.05, the null hypothesis (H_0) stating that there is no significant relationship is rejected.

CHAPTER FIVE

DISCUSSION OF FINDINGS

5.0 Overview

The study investigated the knowledge, and attitude of nursing students towards diet promotion strategies in the prevention of obesity. The study sampled 282 nursing students in university of Benin ,Edo state. The answers provided by the respondents to the questionnaire are summarized according to the research objectives of the study. This aspect of study deals with the discussion of findings, summary, conclusion, implication for nursing practice, limitation of study, recommendations and suggestion for study.

5.1 Discussion of findings

The major findings are discussed under the following headings;

1. Socio-demographic characteristics of nursing students
2. Knowledge about obesity, its causes, consequences, and prevention strategies among nursing students in the university of Benin.
3. Attitudes toward obesity prevention and their perceived role in promoting healthy dietary Practices amongst nursing students in the University of Benin.
4. Barriers to implementing diet promotion strategies for obesity prevention among nursing students in the University of Benin.

Socio- demographic characteristics of nursing students

The sociodemographic characteristics of the respondents in this study provide a crucial lens through which their knowledge and attitudes regarding diet promotion strategies for obesity

prevention can be understood. The participants, who were undergraduate nursing students at the University of Benin, represented a diverse but predictably youthful academic population.

majority of the respondents were between the ages of 20 and 24 years, a range typically associated with early adulthood and marked by the formation of lasting lifestyle behaviors. This age group, forming nearly half of the sample, is particularly relevant in obesity prevention discourse, as individuals at this stage are often living independently for the first time, making autonomous dietary decisions that can set lifelong patterns. The presence of older students, including those in the 25–29 and 30–34-year brackets, further enriched the dataset, offering insight into how diet-related knowledge and habits might evolve as students progress through their academic and personal development.

Gender distribution revealed that a significant proportion of respondents were female, comprising over 70% of the sample. This aligns with broader trends within the nursing profession, where females traditionally dominate. This demographic characteristic is especially meaningful in a study focused on health promotion, as female nurses often serve not only as clinical caregivers but also as societal influencers, particularly in matters of family health and nutrition. Their engagement in obesity prevention is thus both professionally strategic and personally impactful.

Religion emerged as another notable characteristic, with the vast majority of respondents identifying as Christians. This religious uniformity offers a unique context for interpreting health behaviors, as faith-based values often influence dietary choices, perceptions of body image, and openness to health interventions. It suggests the potential for designing health education programs that are culturally and spiritually attuned, particularly if religious organizations or values are integrated into outreach and behavior change strategies.

The marital status of the respondents further reinforces the youthful nature of the study population, with over 90% being single. This is an important finding, as single students are more likely to face dietary challenges related to time constraints, financial limitations, and limited cooking skills, often relying on quick, processed, or convenience foods. These circumstances may undermine the application of theoretical nutritional knowledge, despite students' awareness of healthy eating principles. Moreover, being single and in a demanding academic program may also limit opportunities for shared meal preparation or structured eating schedules, further complicating dietary adherence.

In terms of academic distribution, students were relatively evenly spread across the 200 to 500 levels, with a slight majority from the 300 level. This broad representation ensures a comprehensive understanding of how knowledge and attitudes differ as students progress through their nursing education. It also allows for the identification of whether higher academic exposure correlates with improved awareness or behavior concerning diet promotion and obesity prevention. Senior students, having had more clinical exposure and coursework, might be expected to demonstrate more refined health promotion behaviors, although this assumption must be validated against the data collected in the study.

Altogether, these sociodemographic findings not only describe the respondents but also frame the interpretation of their responses in subsequent sections. The predominance of young, single, female Christian students in mid-to-late stages of their nursing training suggests a group that is both vulnerable to and positioned to combat the rising tide of obesity. This makes them ideal targets for educational interventions aimed at strengthening diet promotion strategies and fostering healthier personal and professional practices.

Knowledge about obesity and prevention strategies among nursing students in the University of Benin

The findings of this study revealed that nursing students demonstrated a high level of knowledge regarding obesity, its causes, consequences, and preventive strategies, with an overall mean score of **1.91** (high knowledge category). Most respondents correctly identified obesity as excessive body fat and acknowledged the role of poor dietary habits, sedentary lifestyle, and unhealthy behaviors as major contributors to the condition. Furthermore, the students showed strong awareness of the link between obesity and chronic diseases such as diabetes, hypertension, and cardiovascular disease. These results align with findings by Adeboye et al. (2022), who reported that health sciences students in Nigeria had a strong foundational knowledge of obesity and its related health risks. Similarly, Aljuraiban et al. (2021) in Saudi Arabia observed that medical and nursing students possessed adequate knowledge of the causes and consequences of obesity, attributing this to their exposure to health education curricula. The consistency of the present study with earlier research suggests that formal nursing education plays a significant role in shaping students' awareness and readiness to tackle obesity-related health issues. However, while knowledge was generally high, it is worth noting that knowledge alone does not always translate into effective preventive practices. According to World Health Organization (WHO, 2023), obesity prevention requires not only awareness but also practical application of dietary and lifestyle measures. Therefore, while these nursing students are knowledgeable, interventions aimed at strengthening their capacity to translate knowledge into consistent action are still required.

Nursing students' attitudes toward obesity prevention and their perceived role in promoting healthy dietary practices

The results of this study indicate that nursing students at the University of Benin generally exhibit a positive and proactive attitude toward diet promotion and the prevention of obesity. Attitude plays a critical role in translating knowledge into practice, especially in the context of nursing, where professionals are not only expected to possess medical knowledge but also to model healthy behaviors and influence patient decisions. In this regard, the attitudes observed in the current study provide encouraging insight into the students' readiness to take on the responsibilities of health education and promotion. The study found that nursing students displayed positive attitudes toward diet promotion and obesity prevention, with an overall mean of 3.48. Students strongly agreed that they have a responsibility to educate patients about obesity ($M = 3.50$) and to encourage healthy eating habits ($M = 3.55$). They also considered obesity prevention to be an important part of their future professional role ($M = 3.60$). These findings highlight the students' professional readiness and motivation to incorporate health promotion into their nursing practice.

This result is consistent with the work of Okafor & Eze (2020), who reported that nursing students in Enugu demonstrated positive attitudes toward health promotion roles, particularly in lifestyle-related conditions. Similarly, Pérez-Rodrigo et al. (2019) found that European nursing students expressed willingness to serve as role models in promoting healthy eating, although gaps in personal practice and confidence were identified.

Interestingly, in the present study, confidence in discussing healthy diets ($M = 3.43$) and role-modeling healthy eating ($M = 3.34$) scored slightly lower, reflecting that while students value diet promotion, their personal behaviors and communication skills may require further

reinforcement. This resonates with Nash et al. (2020), who noted that healthcare students often recognize their duty to promote healthy living but feel inadequately prepared to counsel patients effectively.

Overall, the findings suggest that while nursing students hold positive attitudes, structured training in dietary counseling and practical role-modeling could enhance their effectiveness in promoting obesity prevention among patients

Barriers to Implementing Diet Promotion Strategies for obesity prevention among nursing students.

The results of this study highlight a complex interplay of barriers and that affect nursing students' ability to implement diet promotion strategies effectively, both in clinical settings and in their personal lives. These findings are essential because they move beyond theoretical knowledge and positive attitudes to uncover the real-world challenges and supports that influence behavior. As the study reveals, even well-informed and motivated students may struggle to apply their knowledge consistently due to systemic, personal, or environmental limitations

The study revealed several barriers that hinder nursing students from implementing diet promotion strategies, with an overall mean of 3.41. The most significant barrier was lack of time during clinicals ($M = 3.50$), followed closely by limited access to nutritional materials ($M = 3.49$). Additionally, some students indicated that their personal dietary habits negatively affected their ability to confidently promote healthy diets ($M = 3.36$). On the other hand, support from instructors ($M = 3.55$) and adequate training ($M = 3.16$) were identified as key facilitators that encouraged students to engage in dietary promotion.

These findings are in line with Ibrahim & Olatunji (2021), who noted that Nigerian nursing students often face workload pressures during clinical placements, which limit their ability to engage in patient education. Likewise, Larson et al. (2020) reported that inadequate resources and lack of institutional support were common barriers to effective diet promotion among student nurses in the United States.

The presence of strong institutional support, such as encouragement from instructors, mirrors the findings of Fahlman et al. (2019), who emphasized that mentorship and supportive learning environments enhance students' ability to integrate health promotion into clinical practice. The moderate rating of training opportunities in this study suggests that while curricula are addressing dietary education, there is still room for improvement in practical and skill-based learning.

Overall, the barriers identified highlight the structural and personal challenges that must be addressed to strengthen nursing students' capacity in obesity prevention. Ensuring adequate clinical time, improving access to nutritional materials, and encouraging healthy personal lifestyle choices among students may enhance their readiness to serve as effective advocates for dietary health promotion.

Discussion of hypothesis

The hypothesis tested whether there is a significant relationship between knowledge and attitude of diet promotion strategies in the prevention of obesity among nursing students. The result showed a moderate positive and statistically significant correlation ($r = 0.412$, $p < 0.05$). This finding implies that students who possess greater knowledge of obesity and its prevention tend to demonstrate more favorable attitudes toward promoting healthy dietary practices. The alternate

hypothesis which stated that There is a significant relationship between the knowledge and attitude of diet promotion strategies and the prevention of obesity among nursing students in a tertiary institution in Benin City, Edo State, was accepted

This result is consistent with studies such as Adeboye et al. (2022), who reported that enhanced knowledge among health science students significantly improved their willingness to adopt and promote preventive health measures. Similarly, Nash et al. (2020) highlighted that knowledge acquisition is a critical determinant of attitude formation in health promotion. These findings collectively suggest that academic exposure and training in diet-related health issues are central to fostering a professional commitment to obesity prevention.

The implication of this result is that nursing curricula should emphasize integrative teaching approaches that not only transmit knowledge but also strengthen students' attitudes and motivation to apply such knowledge in practice. Doing so will prepare future nurses to effectively serve as role models and advocates for obesity prevention in both clinical and community settings.

5.2 Implications of findings to nursing

The findings of this study hold significant implications for nursing as a profession, particularly in the areas of clinical practice, nursing education, health promotion, and public health policy. As frontline healthcare providers, nurses are not only responsible for delivering direct patient care but also play a central role in disease prevention and health education. This study, which examined the knowledge and attitudes to diet promotion among nursing students, reveals critical insights that can shape future interventions in nursing education and professional development.

Firstly, the high level of knowledge demonstrated by the respondents regarding obesity, its causes, and prevention strategies reflects the effectiveness of the current nursing curriculum in imparting theoretical understanding. However, knowledge alone is insufficient in driving behavioral change or health promotion. The finding that a notable number of students still struggle with practicing what they know suggests a gap between knowledge and implementation. This highlights the need for nursing education to go beyond didactic instruction and integrate more experiential learning, such as role-playing, simulation exercises, real-life dietary counseling, and reflective practice. By strengthening the practical application of nutrition education, nursing schools can better prepare students to engage in meaningful health promotion both during training and after entering the workforce.

Secondly, the study reveals that nursing students generally have a positive attitude toward diet promotion and recognize it as a key component of their future roles. This positive disposition is an asset that nursing educators and healthcare institutions must leverage. Students' willingness to educate others, encourage healthy eating, and serve as role models should be nurtured through continued reinforcement and mentorship. The implication here is that the professional identity of nurses as health educators must be fully integrated into training programs and supported in clinical settings. Empowering students to see themselves not only as caregivers but as agents of lifestyle change can elevate their contributions to patient outcomes and community wellness.

Furthermore, the barriers identified in this study—such as lack of time during clinicals, limited access to nutritional materials, and poor personal diet habits—point to systemic and environmental factors that undermine students' ability to practice effective diet promotion. This signals a call to action for both nursing educators and healthcare administrators to create

supportive environments that make healthy behavior easier to practice and promote. This could include scheduling adjustments to reduce student fatigue, institutional provision of healthy meal options, and easy access to educational resources on nutrition. In clinical settings, integrating dietary counseling into patient care protocols and ensuring that nurses have time and tools for such interventions would enhance the consistency of health promotion efforts.

The implications of this study also extend to nursing leadership and health policy. With obesity continuing to rise as a global and national public health crisis, nurses must be strategically positioned as part of the prevention workforce. The findings suggest that nursing students are not only willing but potentially well-equipped to contribute to this goal if supported properly. Nursing leadership must therefore advocate for policy-level interventions that recognize nurses as key stakeholders in dietary and obesity prevention programs. This includes their involvement in designing and delivering community nutrition campaigns, school-based health education, and public service announcements that promote healthy lifestyles.

Moreover, the findings imply that role modeling is an essential but underdeveloped aspect of health promotion in nursing. Students reported a willingness to act as role models but also expressed limitations in confidence and personal dietary discipline. This duality highlights the importance of self-care education within the nursing curriculum. Students must be taught not only to care for others but to prioritize their own health. Institutions can support this through wellness programs, peer-support groups, and counseling services aimed at promoting sustainable, healthy living habits among nursing students. In summary, the findings of this study underscore the pivotal role that nursing students—and by extension, nurses—can play in the prevention of obesity through diet promotion. The implications for nursing are far-reaching, calling for a rethinking of how nutrition is taught, how health promotion is practiced, and how

professional support structures are built around the nurse as a change agent. By aligning educational content, clinical expectations, institutional policies, and self-care initiatives, the nursing profession can be better positioned to lead in the fight against obesity and non-communicable diseases in Nigeria and beyond.

5.3 Limitation of the study

1. Financial Constraints:

Financial limitations affected the overall scope of this study. Insufficient funds restricted access to certain research materials, data collection tools, and logistics. It also limited the researcher's ability to reach a larger sample size, travel to multiple study sites, and cover printing and administrative costs associated with the research.

2. Convenience Sampling Technique

The use of a convenience sampling method limits the generalizability of the findings. Since participants were selected based on accessibility and willingness, the sample may not fully represent all nursing students at the University of Benin or in Nigeria.

3. Single Institutional Setting

The study was conducted solely within the Department of Nursing Sciences at the University of Benin, which restricts the external validity. Findings may not reflect the experiences of nursing students in other universities with different curricula or resources.

4. Cross-Sectional Design

Being a cross-sectional study, data was collected at a single point in time. This prevents any analysis of causality or changes over time in students' knowledge and attitudes

5. Limited Exploration of External Factors

The study primarily focused on internal factors (knowledge and attitude) and did not deeply

assess external influences, such as family background, socioeconomic status, or campus food environment, which could significantly affect diet promotion behaviors

6. No Qualitative Component The absence of in-depth interviews or focus group discussions limited the study's ability to capture nuanced insights or contextual explanations behind the students' responses

5.4 summary of the study

This study explored the knowledge and attitude of diet promotion strategies in the prevention of obesity among nursing students at the University of Benin, Edo State. Recognizing the growing burden of obesity globally and within Nigeria, the study sought to assess how well-prepared future nurses are to contribute meaningfully to obesity prevention through dietary health promotion.

The study employed a descriptive cross-sectional design, with a total of 282 undergraduate nursing students selected through convenience sampling. Data were collected using a structured questionnaire that covered sociodemographic characteristics, knowledge of obesity and its prevention, attitudes toward diet promotion, personal dietary practices, and the barriers and facilitators that influence implementation of these strategies.

The findings revealed that nursing students possess a high level of knowledge regarding the definition of obesity, its causes, consequences, and preventive strategies. A majority understood that poor dietary habits and sedentary lifestyles contribute significantly to obesity and recognized the role of healthy eating and physical activity in prevention.

In terms of attitude, most students demonstrated a positive outlook toward their professional responsibility in promoting healthy eating. They acknowledged their role as future educators and influencers in combating obesity and reported a willingness to engage in dietary counseling and

serve as role models for healthy living .However, the study also uncovered important barriers to effective implementation of diet promotion strategies, including limited time during clinical rotations, lack of access to nutritional resources, and inconsistent personal dietary habits. On the other hand, support from instructors and the availability of formal training were identified as important facilitators that encouraged students to promote healthy eating.

The study concludes that while nursing students are theoretically knowledgeable and positively inclined toward obesity prevention, certain institutional and personal challenges must be addressed to bridge the gap between knowledge and consistent practice. Strengthening practical training, enhancing support systems, and improving access to educational resources are critical steps toward equipping nursing students to play a more active and effective role in obesity prevention in Nigeria.

5.5 Conclusion

This study examined the knowledge and attitudes related to diet promotion strategies for obesity prevention among nursing students at the University of Benin. The findings highlight that while students generally possess a high level of awareness about obesity and its health consequences, and exhibit positive attitudes toward their role in dietary health promotion, there remains a noticeable gap between knowledge and attitudes. The study further revealed several barriers that hinder the effective implementation of diet promotion strategies, such as lack of time during clinical training, limited access to nutritional resources, and poor personal dietary habits.. These results underscore the importance of strengthening both institutional and individual support systems to bridge the gap between theoretical knowledge and . As future frontline healthcare providers, nursing students must be equipped not only with information but also with the skills,

resources, and motivation to serve as credible advocates and role models for obesity prevention. Therefore, integrating more attitude-based learning, providing accessible nutrition resources, and encouraging a culture of wellness within nursing education can enhance the effectiveness of diet promotion strategies. By doing so, the nursing profession will be better positioned to contribute meaningfully to the national effort to reduce the burden of obesity and promote healthier lifestyles in Nigeria.

5.6 Recommendations

1. Integrate Practical Nutrition Training into the Nursing Curriculum

While students demonstrated strong theoretical knowledge, many lacked confidence and practical experience. Schools of nursing should incorporate hands-on activities such as dietary counseling simulations, meal planning workshops, and nutrition-focused clinical assignments to bridge the gap between knowledge and attitude .

2. Strengthen Health Promotion and Communication Skills

Since some students reported limited confidence in discussing diets with patients, targeted training in health communication, motivational interviewing, and patient counseling should be emphasized. This will enhance their effectiveness as future educators and advocates for healthy living.

3. Provide Access to Up-to-Date Nutritional Materials

Limited access to educational resources was cited as a barrier. Institutions should make dietary guidelines, nutrition brochures, and evidence-based tools readily available in classrooms and clinical areas to support learning.

4. Promote Healthy Eating Environments on Campus

Students' personal dietary habits affected their ability to model healthy behavior. Universities should ensure access to affordable, nutritious food options on campus, reduce the availability of junk food, and support wellness programs that encourage students to adopt healthy eating habits

5. Incorporate Peer-Led Health Promotion Programs

Establishing student-led health clubs or peer mentorship programs can foster a culture of wellness. Such initiatives can encourage students to hold one another accountable and normalize discussions around nutrition, self-care, and health advocacy.

6. Ensure Instructor Support and Mentorship

Instructor encouragement was a key facilitator. Nursing faculties should be trained to mentor students in health promotion and serve as role models by practicing and reinforcing healthy behaviors during clinical supervision.

7. Review and Adapt Clinical Schedules to Allow Time for Health Education

Clinical demands were found to reduce opportunities for dietary counseling. Institutions should work with teaching hospitals to review schedules and integrate structured opportunities for students to engage in diet-related health promotion during clinical postings.

8. Expand Research to Include Multiple Institutions

Since the study was conducted at a single institution, similar research should be replicated in other nursing schools across Nigeria to determine whether findings are consistent and to guide national-level educational reforms.

5.7 Suggestions for further study

Further studies should be carried out on this same research topic using a large number of subjects and different locations. Studies could be carried out on:

1. Practice of diet promotion strategies in the prevention of obesity
2. The effectiveness of diet promotion strategies in the prevention of obesity
- 3 Influence of Socioeconomic Factors on Dietary Practices Among Nursing Student

REFERENCES

- Abdulbaqi, M., Al-Nasrawii, S., Al-Latif, A., & Mohammed, G. (2024). An assess the knowledge and attitude towards obesity among a sample of colleges students in Karbala Province - Iraq. *South Eastern European Journal of Public Health, XXV*, 3944–3951.
- Abdulrahman, N., Hamed, A., Elfaki, N., Idris, A., & Taha, W. (2025). Health promotion interventions for nursing students: A systematic review. *Majmaah Journal of Health Sciences, 13*, 159.
- Adeleke, O., & Nsofor, P. (2022). Cultural perceptions of body weight and obesity in Nigeria. *African Journal of Public Health, 16*(3), 45–53.
- Adeoye, T., & Johnson, K. (2023). Healthcare students as health promoters: Influence of personal health behaviors on professional practice. *Nigerian Journal of Health Education, 18*(2), 112–125.
- Adeoye, T., & Johnson, K. (2023). Influence of student lifestyle on dietary behavior: A Nigerian perspective. *Journal of Nursing Education and Practice, 13*(2), 101–112.
- Afshin, A., Forouzanfar, M. H., Reitsma, M. B., Sur, P., Estep, K., Lee, A., Marczak, L., Mokdad, A. H., Moradi-Lakeh, M., Naghavi, M., Salama, J. S., Vos, T., & Murray, C. J. L. (2023). *Health effects of overweight and obesity in 195 countries over 25 years. The New England Journal of Medicine, 389*(4), 256–268.
- Albasheer, O., Hakami, N., Abdelwahab, S., Alqassim, A., Alharbi, A., Abdelmola, A., Altraifi, A., Medani, I. E., Hakami, A., Moafa, M., & Abuhadi, R. (2024). Utilisation of the

- Health Belief Model to study the behavioural intentions relating to obesity management among university students: A cross-sectional study. *BMJ Open*, 14, e079783. <https://doi.org/10.1136/bmjopen-2023-079783>
- Alhomaidan, H., Alqefari, A., Alburaidi, A., Alqefari, A., Alrubayan, A., Alqifari, H., Alqefari, A., & Alenzi, S. (2024). Knowledge, attitude, and practice of obesity and its prevalence among undergraduate medical students at Qassim University, Saudi Arabia. *International Journal of Medicine in Developing Countries*, 1, 1–10.
- Aremu, S. O., Akute, B., Aremu, D. O., Nwachukwu, O. J., Omosebi, M., Oluwole, S. T., et al. (2025). Dietary strategies for preventing and managing obesity through evidence-based nutritional interventions. *Discover Public Health*, 22, Article 424. <https://doi.org/10.1186/s12982-025-00818-w>
- Arvelo-Rodríguez, Y.-M., Marrero-González, C.-M., & García-Hernández, A.-M. (2025). Attitudes and Behaviors of Nurses and Nursing Students Toward Patients with Obesity: A Systematized Review. *Nursing Reports*, 15(2), 66. <https://doi.org/10.3390/nursrep15020066>
- Balu, D., Ainia, & Kunjukunju, A. (2021). Prevalence and contributing factors towards overweight and obesity among nursing students in a private healthcare university college in Malaysia. *International Journal of Nursing and Health Science*, 7, 1–10. .
- Bharathi, B., Alenezi, W. M. M., Alruwaili, W. N. M., Alanazi, R. F. Y., & Alruwaili, AA. S. (2024). A descriptive study to assess the prevalence of obesity among female bachelor nursing science students. *Journal of Quality in Health Care & Economics*, 7, 1–6.
- Blake, H., Watkins, K., Middleton, M., & Stanulewicz, N. (2021). Obesity and diet predict attitudes towards health promotion in pre-registered nurses and midwives. *International*

- Journal of Environmental Research and Public Health*, 18(24), 13419.
<https://doi.org/10.3390/ijerph182413419>
- Bradbury, D., et al. (2018). *Barriers and facilitators to health care professionals discussing child weight: A systematic review and meta-synthesis*. *BMC Health Services Research*, 18(1), 1–14. <https://doi.org/10.1186/s12913-018-3833-9>
- Chukwuonye, I., Abali, C., & Eke, O. (2023). Trends in obesity prevalence among Nigerian adults: A systematic review and meta-analysis. *Nigerian Medical Journal*, 64(1), 45–58.
- Creswell, J. W. (2014). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (4th ed.). Sage Publications.
- Dunham, M. (2024). Obesity bias awareness decreases nursing students' bias toward patients with obesity. *Nursing*, 54, 56–60
- Duvhal, K. (2024). Nutrition education as a tool for obesity prevention. *Journal of Preventive Health*, 20(4), 201–212.
- Effectiveness of an educational intervention to improve perceptions of obesity, enhance self-esteem, and reduce tobacco and alcohol consumption among nursing students. *Salud, Ciencia y Tecnología*, 5, 1427. <https://doi.org/10.56294/saludcyt20251427>
- Ehwarieme, T. (2022). Dietary practices among Nigerian university students: Implications for health promotion. *Nigerian Journal of Nutrition and Dietetics*, 10 (2), 56–67.
- Ehwarieme, T. (2024). Prevalence and determinants of overweight and obesity among undergraduate students in a tertiary institution Benin City, Edo State, Nigeria. *African Journal of Biomedical Research*, 27, 3995–4004
- Emmanuel, U., Peters, S., & Akinwale, O. (2022). Prevalence of overweight and obesity among healthcare students in Southern Nigeria. *Pan African Medical Journal*, 41, 178–190.

- GBD. (2019). Global burden of disease study 2019 results. *The Lancet*, 396(10258), 1204–1222.
- Glanz, K., Rimer, B. K., & Viswanath, K. (Eds.). (2015). *Health behavior: Theory, research, and practice* (5th ed.). Jossey-Bass.
- Guzmán, A. X., & Carranza-Madrigal, L. Y. (2022). *Title of article. Name of Journal, Volume(Issue)*, pages. <https://doi.org/xxxx>
- International Diabetes Federation. (2021). *IDF diabetes atlas* (10th ed.). Brussels, Belgium: International Diabetes Federation.
- Kherailah, K. K., Sadeeq, H. A., Abduljabar, M. S., & Saad, Y. S. (2025). Prevalence, determinants and knowledge toward overweight and obesity among grade 7–12 students in Duhok city. *Journal of Neonatal Surgery*, 14(4S), 282–289. <https://doi.org/10.52783/jns.v14.1784>
- Kothari, C. R. (2011). *Research Methodology: Methods and Techniques* (2nd ed.). New Age International Publishers.
- Lee, F., et al. (2025). The oncogenic burden of obesity. *Biomedicines*, 13(7), 1571. <https://doi.org/10.3390/biomedicines13071571> [MDPI](#)
- Leelavathi, A., & Mathew, B. (2024). *Pediatric obesity: Nursing strategies for prevention. Asian Journal of Nursing Education and Research*, 14(1), 129–132. Leelavathi, P., & Mathew, S. (2024). Abdominal obesity and its health implications: A review. *Asian Journal of Clinical Nutrition*, 16(1), 22–31.
- Lipson, S. K., & Sonnevile, K. R. (2024). Weight stigma and disordered eating in university students. *Journal of American College Health*. Advance online publication.
- Madu, O., Chukwu, O., & Peters, A. (2024). Traditional diets and obesity prevention in Nigeria: A review. *African Journal of Nutrition*, 18(2), 98–109.

- Mafu, R. (2023). Role modeling and professional identity in nursing education. *Nurse Educator Perspectives*, 44(3), 145–152.
- Maghbooli, Z. (2024). Obesity-associated endocrine disorders: Mechanisms and therapeutic approaches. *Endocrinology & Metabolic Syndrome*, 13, 431. <https://doi.org/10.35248/2161-1017.24.13.430>
- Młynarska, E., Franczyk, B., Rysz-Górzyńska, M., & Rysz, J. (2025). Obesity as a multifactorial chronic disease: Molecular mechanisms and therapeutic strategies. *Biomolecules*, 15(2), 787.
- Mourad, N., Kharroubi, S., Nasreddine, L., & Hwalla, N. (2024). A higher global diet quality score is associated with lower risk of obesity among male university students in Lebanon: A pilot study. *Frontiers in Nutrition*, 11.
- Mohebian, F., Shamsi, M., Moradzadeh, R., Khorsandi, M., & Azizi-Soleiman, F. (2025). Determinants of carbohydrate consumption in type 2 diabetic patients based on the health belief model. *British Journal of Diabetes*. <https://doi.org/10.15277/bjd.2025.477>
- Navarro, L., & Creditor, C. (2020). Sleep deprivation and obesity risk: A systematic review. *Sleep Medicine Reviews*, 50, 101255.
- NDHS. (2018). *Nigeria demographic and health survey 2018*. Abuja, Nigeria: National Population Commission.
- Nigeria Ministry of Health. (2023). *Economic burden of non-communicable diseases in Nigeria: Annual report*. Abuja, Nigeria: Federal Ministry of Health.
- Okafor, J., & Nwankwo, C. (2022). Stress, dietary habits, and academic performance among nursing students in Nigerian universities. *Nigerian Journal of Nutritional Sciences*, 43(2), 156–169.

- Oguizu, A. D., & Udochukwu, N. C. (2024). Consumption of Ultra-Processed Foods and Anthropometric Status of Adolescents in Umuahia North Local Government Area, Abia State, Nigeria. *Nutraceutical Research*, 3(1), Article 8. <https://doi.org/10.35702/nutri.10008> [Journal of Nutraceuticals](#)
- Ogundele, A. E., Aleru, E. O., Bodunde, I. O., & Gbenro, O. E. (2023). *Drivers of Food Choice, Meal Pattern, and Lifestyle Habits among Undergraduate Students in Lead City University, Ibadan, Oyo State, Nigeria*. *World Nutrition*, 14(2), 66-74. <https://doi.org/10.26596/wn.202314266-78> worldnutritionjournal.org
- Okafor, U., & Nwankwo, A. (2022). Lifestyle factors and obesity risk among Nigerian nursing students. *Journal of Health and Social Behavior*, 63(2), 220–229.
- Oliveria, R. (2022). Genetic influences on obesity risk: An epigenetic perspective. *International Journal of Obesity Research*, 46(3), 211–219. <https://doi.org/xxxx>
- Polit, D. F., & Beck, C. T. (2018). *Essentials of nursing research: Appraising evidence for nursing practice* (9th ed.). Philadelphia, PA: Wolters Kluwer.
- Proaño, G. V., et al. (2024). *Effectiveness, barriers, and facilitators of overweight and obesity prevention strategies implemented in Colombia: A scoping review*. *The Lancet Regional Health – Americas*, 26(5), 100582.
- Putrillady, T., Tambunan, R., & Saragih, B. (2023). The influence of health education on knowledge and attitudes about diet for obesity prevention in students of SMK Mahaputra Cerdas Utama, Bandung Regency. *Indonesian Journal of Health Research and Development*, 1, 14–19. <https://doi.org/10.58723/ijhrd.v1i1.36>.
- Sobočan, A. M., Bertotti, T., & Strom-Gottfried, K. (2020). *Ethics in social work research: European and international perspectives*. Routledge. <https://doi.org/10.4324/9780429279174>.

- Styk, W., Samardakiewicz, M., & Zmorzynski, S. (2024). Weight biases, body image and obesity risk knowledge in the groups of nursing students from Poland and Nigeria. *Scientific Reports*, *14*, 1–15. <https://doi.org/10.1038/s41598-024-54904-1>
- Tropical Medicine & Health. (2024). Residence-based inequalities in overweight/obesity in sub-Saharan Africa: a multivariate non-linear decomposition analysis. *Tropical Medicine & Health*, *52*, Article 29. <https://doi.org/10.1186/s41182-024-00593-5>
- WHO. (2019). *Global recommendations on physical activity for health*. Geneva: World Health Organization. <https://www.who.int/publications/i/item/9789241599979>
- WHO. (2021). *Obesity and overweight factsheet*. Geneva: World Health Organization. <https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight>
- World Health Organization (WHO). (2024). *Obesity and overweight: Key facts*. Geneva: World Health Organization. <https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight>
- Wright, J., et al. (2021). *The effectiveness of nurse-led interventions to prevent childhood and adolescent overweight and obesity: A systematic review of randomized trials*. *Journal of Advanced Nursing*, *77*(6), 2665–2680. <https://doi.org/10.1111/jan.14797>
- Xue, B., Zhang, X., Li, T., Gu, Y., Wang, R., Chen, W., Ren, X., Liu, X., Chen, G., Lin, Y., Pan, C., Zhao, W., Li, T., Lian-Ping, H., & Han, C. (2021). Knowledge, attitude and practice of obesity among university students. *Annals of Palliative Medicine*, *10*, 4539–4546. <https://doi.org/10.21037/apm-21-573>
- Yamane, T. (1967). *Statistics: An introductory analysis* (2nd ed.). New York: Harper and Row.

APPENDIX

UNIVERSITY OF BENIN (UNIBEN) BENIN CITY, EDO STATE

FACULTY OF NURSING SCIENCES

Dear Respondent,

I am a student of the above-named institution conducting a study on the topic “KNOWLEDGE AND ATTITUDE OF DIET PROMOTION STRATEGIES IN PREVENTION OF OBESITY AMONGST NURSING STUDENTS UNIVERSITY OF BENIN EDO”. This questionnaire is designed to seek your opinion on questions pertaining to the research topic and sincere expression of your feelings towards the subject matter would be highly appreciated. Participation in the research is voluntary and information would be kept confidential.

Thank you for your willingness to participate.

Questionnaire

SECTION A: Socio-demographic characteristics

Below is a list of options pertaining to socio-demographic characteristics, please choose the most appropriate and tick ONE out of the options provided.

Demographic data

1. Age: <20 (), 20-24 (), 25-29 (), 30-34 (), 35years and above ()
2. Gender: Male (), Female ()
3. Religion: Christianity (), Islam (), Traditional ()
4. Marital Status: single (), Married (), Divorced ()
5. Level of Study: 200level (), 300level (), 400level () 500level ()

SECTION B: Determine the level of knowledge about obesity, its causes, consequences and prevention strategies among nursing students at the university of Benin.

Below is a list of questions related to determining the level of knowledge about obesity, its causes, consequences, and prevention strategies among nursing students at the University of Benin.. Please kindly tick one option yes(1),no(2),I don't know (3)

S/N	ITEMS	YES	NO	I DONT KNOW
7	Do you know that obesity is defined as excessive body fat that may impair health?			
8	Are you aware that poor dietary habits can contribute to the development of obesity?			
9	Do you know that obesity can increase the risk of developing chronic diseases such as diabetes and hypertension?			
10	Are you aware that regular physical activity can help prevent obesity?			
11	Do you believe that obesity can be managed or prevented through healthy lifestyle choices?			

SECTION C: Assess nursing students attitudes toward obesity prevention and their perceived role in promoting healthy practices

Below is a list of questions related to assessing nursing students' attitudes toward obesity prevention and their perceived role in promoting healthy dietary practices.. Please **tick** one Always(1),Sometimes(2),Rarely(3),Never(4).

S/N	ITEMS	ALWAYS	SOMETIMES	RARELY	NEVER
12.	How often do you feel it is your responsibility as a nursing student to educate patients about obesity prevention?				
13.	How often do you personally encourage others to adopt healthy eating habits?				
14.	How often do you consider obesity prevention as an important part of your future nursing role?				
15.	How often do you feel confident				

	discussing healthy dietary practices with patients or peers?				
16.	How often do you practice healthy eating habits to serve as a role model for others?				

SECTION D:Identify barriers to implementing diet promotion strategies for obesity prevention among nursing students.

Below is a list of questions related to the identify barriers and facilitators to implementing diet promotion strategies for obesity prevention among nursing students. Please kindly **tick** one option Strongly agree(1),Agree(2),Disagree(3),Strongly disagree(4).

S/N	ITEM	STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE
17.	Lack of time during clinical rotations prevents me from engaging in dietary education with patients.				
18.	I feel adequately trained to provide guidance on healthy eating for obesity prevention.				
19.	Limited access to nutritional resources or materials hinders my ability to promote healthy diets.				
20.	Support from clinical instructors and supervisors encourages me to engage in diet promotion strategies.				
21.	I find it challenging to promote healthy eating when my own dietary habits are not ideal.				

Reliability Analysis

A reliability test was conducted to determine the internal consistency of the instrument used in this study. The test was carried out using Cronbach's Alpha in SPSS version 26.0. The questionnaire contained 15 items divided into three sections measuring knowledge, and attitude of diet promotion strategies in the prevention of obesity among nursing students.

Item Statements	Scale Mean if Item Deleted	Variance if Item Deleted	Corrected Total Correlation	Item-Cronbach's Alpha if Item Deleted
I have adequate knowledge about obesity and its prevention.	53.42	15.13	.412	.780
I know that unhealthy eating habits contribute to obesity.	54.10	14.95	.398	.782
I am aware that regular physical activity helps prevent obesity.	53.87	15.07	.376	.785
I understand that diet modification is an effective strategy in preventing obesity.	54.15	15.12	.391	.783
I can identify foods that contribute to weight gain.	53.80	15.26	.405	.781
I believe that obesity prevention is part of nurses' professional roles.	53.60	14.90	.420	.779
I am confident in promoting healthy diets among my peers and patients.	54.00	15.08	.431	.777
I believe nursing students should act as role models in healthy lifestyle practices.	53.74	15.01	.416	.780
I think obesity prevention should be included in nursing education.	53.93	14.97	.428	.778
I believe healthy dietary habits can reduce obesity risk.	54.11	14.99	.412	.780
Lack of time affects my ability to maintain a healthy diet.	53.89	15.22	.376	.785
Limited income prevents me from choosing healthy food options.	53.95	15.18	.389	.783
Peer influence affects my eating behavior negatively.	54.06	15.09	.368	.786
Stress from academic workload influences my eating habits.	53.98	15.16	.372	.785
Healthy food options are not	53.92	15.05	.401	.782

always available in my school environment.

Table 3.1

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
------------------	--	------------

0.804	0.817	15
-------	-------	----

Table 3.2

Item–Total Statistics

Source: Researcher's Field Survey, 2025

Comment

The reliability analysis using Cronbach's Alpha yielded an overall coefficient of 0.804, and 0.817 when standardized, indicating a good level of internal consistency among the 15 items. This shows that the questionnaire items were well-correlated and consistently measured the constructs of knowledge and attitude of diet promotion strategies in obesity prevention.