



Faculty of Medicine and Health Sciences

BACHELOR OF NURSING WITH HONOURS

Year 4, Semester 2, 2024/2025

Course : MDJ 4664 Final Year Project II
Course Coordinator : Miss Feryante Rintika Belansai
**Research title : Knowledge of Obesity and Attitude towards Obese People
among Universiti Malaysia Sarawak (UNIMAS)
Undergraduate Nursing Students**
Name of student : Muhammad Zikril Hakim Bin Ahmad Fuad
Matric number : 78276
Date of submission : 2nd July 2025

KNOWLEDGE OF OBESITY AND ATTITUDE TOWARDS OBESE PEOPLE AMONG
UNIVERSITI MALAYSIA SARAWAK (UNIMAS) UNDERGRADUATE NURSING
STUDENTS

MUHAMMAD ZIKRIL HAKIM BIN AHMAD FUAD

This project is submitted

In partial fulfilment of the requirements for the degree of

Bachelor of Nursing with Honours

Faculty of Medical and Health Sciences

UNIVERSITI MALAYSIA SARAWAK

2025

DECLARATION

I hereby affirm that the Final Year Project titled 'Knowledge of Obesity and Attitude Towards Obese People among Universiti Malaysia Sarawak (UNIMAS) Undergraduate Nursing Students' is an original work that I done. This research project conducted at the Faculty of Medicine and Health Sciences (FMHS), Universiti Malaysia Sarawak (UNIMAS) under supervision of my research supervisor starting from October 2024 until June 2025. I acknowledge that all citations and references employed have been appropriately credited in the text. I hereby certify that this research paper has not been submitted to any other evaluated qualification.

Muhammad Zikril Hakim

Signature

MUHAMMAD ZIKRIL HAKIM BIN AHMAD FUAD (78276)

FACULTY OF MEDICINE AND HEALTH SCIENCES

UNIVERSITI MALAYSIA SARAWAK

DATE: 2ND JULY 2025

ACKNOWLEDGEMENT

In the name of Allah, the Most Gracious, the Most Merciful, all praise and gratitude belong to Allah, the Lord of all worlds. I extend our heartfelt thanks to Him for His numerous blessings, guidance, and mercy. This work has been completed through His will and favour. May He continue to guide me on the right path and grant upon me wisdom and success in all our pursuits. Truly, all praise and glory are due to Him.

I wish to express my sincere appreciation to my research supervisor, Mr. Md Fadlisham bin Samsuddin, and course coordinator, Feryante Rintika ak Belansai, for their invaluable guidance throughout this research endeavour. Their helpful advice was of great significance throughout the completion of my Final Year Project.

I would like to extend my sincere appreciation for the approval granted by the Faculty of Medicine and Health Sciences at UNIMAS Ethics and Research Committee to conduct this study. I want to express sincere gratitude to the UNIMAS Faculty of Medicine and Health Sciences for allowing me to conduct this research involving undergraduate nursing students at UNIMAS.

I wish to convey my deepest gratitude to my family and friends, especially my parents, for their steadfast support and for their prayers for the successful completion of this research endeavour. Lastly, I would like to extend my sincere appreciation to all individuals who contributed, whether directly or indirectly, to the progression of my research project.

I wish to acknowledge the participants who generously contributed their time to respond to my questionnaire for the purposes of this study. The accomplishment of this investigation was crucial and provided a noteworthy contribution to the overall findings. Thank you all.

ABSTRACT

Background: Obesity is a chronic, complicated health concern that affects mental and physical health. Obesity affects millions worldwide and this issue includes Malaysia. Nursing students must understand obesity and have a favourable attitude towards obese persons to participate in obesity prevention, education, and management. **Objectives:** This study aims to assess UNIMAS undergraduate nursing students' obesity knowledge, attitudes towards obese people, and examine the relationship between obesity knowledge and attitudes towards obese people. **Methodology:** A quantitative cross-sectional study was conducted among UNIMAS undergraduate nursing students. 163 participants were selected from first year until fourth year. The research instrument featured 35 questions which consisted of 3 section which are sociodemographic, Knowledge regarding Obesity from Moyo & Felix (2024), and ATOP Scale from Allison et al. (1991). The data collected from this study was analyzed using IBM SPSS version 27.0. **Results:** 68.1% of UNIMAS nursing students showed a good level of knowledge regarding obesity and 64.4% have positive attitude towards obese people. No significant correlation between knowledge and attitude, $r_s(163) = -.014, p = .861$. **Conclusion:** In summary, a significant majority of the UNIMAS undergraduate nursing students demonstrated a good knowledge of obesity and a positive attitude towards obese people. However, there was no relationship between knowledge of obesity and attitude towards obese people among UNIMAS undergraduate nursing students.

Key terms: knowledge, attitude, obesity, obese people, undergraduate nursing students

Tajuk Penyelidikan: Pengetahuan tentang Obesiti dan Sikap terhadap Orang Obes dalam kalangan Pelajar Kejururawatan Prasiswazah Universiti Malaysia Sarawak (UNIMAS)

ABSTRAK

Latar Belakang: Obesiti adalah masalah kesihatan kronik dan rumit yang memberi kesan kepada kesihatan mental dan fizikal. Obesiti menjejaskan berjuta-juta orang di seluruh dunia termasuk Malaysia. Pelajar kejururawatan perlu memahami obesiti dan mempunyai sikap yang positif terhadap individu obes untuk mengambil bahagian dalam pencegahan, pendidikan, dan pengurusan obesiti. ***Objektif:*** Kajian ini bertujuan untuk menilai tahap pengetahuan pelajar kejururawatan prasiswazah UNIMAS mengenai obesiti, sikap terhadap individu obes, serta mengkaji hubungan antara pengetahuan obesiti dan sikap terhadap individu obes. ***Metodologi:*** Kajian keratan rentas kuantitatif telah dijalankan ke atas pelajar kejururawatan prasiswazah UNIMAS. Seramai 163 peserta dipilih dari tahun pertama hingga tahun keempat. Instrumen kajian terdiri daripada 35 soalan yang merangkumi 3 bahagian iaitu data sosiodemografi, Pengetahuan mengenai Obesiti dari Moyo & Felix (2024), dan Skala ATOP dari Allison et al. (1991). Data yang diperoleh dianalisis menggunakan perisian IBM SPSS versi 27.0. ***Keputusan:*** Seramai 68.1% pelajar kejururawatan UNIMAS menunjukkan tahap pengetahuan yang baik mengenai obesiti manakala 64.4% mempunyai sikap positif terhadap individu obes. Tiada korelasi yang signifikan antara pengetahuan dan sikap, $r_s(163) = -.014$, $p = .861$. ***Kesimpulan:*** majoriti pelajar kejururawatan prasiswazah UNIMAS menunjukkan pengetahuan yang baik mengenai obesiti dan sikap yang positif terhadap individu obes. Walau bagaimanapun, tiada hubungan antara pengetahuan mengenai obesiti dan sikap terhadap individu obes dalam kalangan pelajar kejururawatan prasiswazah UNIMAS.

Kata kunci: *pengetahuan, sikap, obesiti, individu obes, pelajar kejururawatan prasiswazah*

TABLE OF CONTENTS

	Page
DECLARATION	i
ACKNOWLEDGEMENT	ii
ABSTRACT	iii
<i>ABSTRAK</i>	iv
TABLE OF CONTENTS	vi
LIST OF TABLES	xi
LIST OF FIGURES	xiii
LIST OF ABBREVIATIONS	xiv
CHAPTER 1: INTRODUCTION	1
1.1 Study Background	1
1.2 Problem Statement	2
1.3 Research Aim, Research Questions, and Research Objectives	4
1.3.1 Research Aim	4
1.3.2 Research Questions	4
1.3.3 Research Objectives	4

1.4 Hypotheses	5
1.5 Significant of the Study	5
1.5.1 Nursing Education	5
1.5.2 Nursing Practice	5
1.5.3 Nursing Profession	6
1.6 Definition of Key Terms	6
1.7 Summary	7
CHAPTER 2: LITERATURE REVIEW	8
2.1 Overview	8
2.2 Knowledge of Obesity	8
2.3 Attitude towards Obese People	14
2.4 Relationship between Knowledge of Obesity and Attitude towards Obese People	19
2.5 Conceptual Framework	21
2.6 Summary	22
CHAPTER 3: METHODOLOGY	23
3.1 Overview	23
3.2 Research Design	23
3.3 Research Setting and Population	24

3.4 Sampling Method and Sample Size	24
3.4.1 Sampling Method	24
3.4.2 Sample size	25
3.5 Inclusion and Exclusion Criteria	27
3.5.1 Inclusion Criteria	27
3.5.2 Exclusion Criteria	27
3.6 Research Instrument	27
3.7 Validity and Reliability	29
3.7.1 Validity	29
3.7.2 Reliability	29
3.8 Ethical Consideration	30
3.9 Data Collection Procedure	31
3.9.1 Pilot Study	31
3.9.2 Actual Study	32
3.10 Data Analysis Method	34
3.11 Summary	36
CHAPTER 4: RESULT	37
4.1 Overview	37
4.2 Socio-demographic Characteristics of Undergraduate Nursing Students in UNIMAS	38
4.2.1 Age	38

4.2.2 Gender	39
4.2.3 Race	40
4.2.4 Year of Study	40
4.2.5 BMI Level	41
4.3 Knowledge regarding Obesity among UNIMAS Undergraduate Nursing Students	42
4.4 Attitude towards Obese People among UNIMAS Undergraduate Nursing Students	44
4.5 Normality Test of Total Knowledge Score regarding Obesity and Total Attitude Score towards Obese People among UNIMAS Undergraduate Nursing Students	47
4.5.1 Total Knowledge Score regarding Obesity	47
4.5.2 Total Attitude Score towards Obese People	49
4.6 Relationship between Knowledge of Obesity and Attitude toward Obese People among UNIMAS Undergraduate Nursing Students	51
4.7 Summary	52
CHAPTER 5: DISCUSSION	53
5.1 Overview	53
5.2 Knowledge regarding Obesity among UNIMAS Undergraduate Nursing Students	53
5.3 Attitude towards Obese People among UNIMAS Undergraduate Nursing Students	56
5.4 Relationship between Knowledge of Obesity and Attitude towards Obese People among UNIMAS Undergraduate Nursing Students	58

5.5 Summary of the Findings	60
5.6 Implications, Recommendations, Future Research	60
5.6.1 Implications of the Study	60
5.6.2 Recommendations for this Study	61
5.6.3 Recommendations for Future Research	61
5.7 Limitations of the Study	62
5.8 Conclusion	62
REFERENCE	63
APPENDICES	74

LIST OF TABLES

	Page
Table 1.1 Definition of Key Terms	6
Table 4.1 Descriptive Statistics for Participants' Age ($n = 163$)	38
Table 4.2 Normality Test for Participants' Age ($n = 163$)	38
Table 4.3 Gender of Participants ($n = 163$)	40
Table 4.4 Level of Knowledge regarding Obesity among UNIMAS Undergraduate Nursing Students ($n = 163$)	42
Table 4.5 Response of Level of Knowledge regarding Obesity among UNIMAS Undergraduate Nursing Students ($n = 163$)	43
Table 4.6 Attitude towards Obese People among UNIMAS Undergraduate Nursing Students ($n = 163$)	44
Table 4.7 Response of Attitude towards Obese People among UNIMAS Undergraduate Nursing Students ($n = 163$)	45
Table 4.8 Descriptive Statistics for Total Knowledge Score regarding Obesity among UNIMAS Undergraduate Nursing Students ($n = 163$)	48
Table 4.9 Normality Test for Total Knowledge Score regarding Obesity among UNIMAS Undergraduate Nursing Students ($n = 163$)	48
Table 4.10 Descriptive Statistics for Total Attitude Score towards Obese People among UNIMAS Undergraduate Nursing Students ($n = 163$)	50

Table 4.11	Normality Test for Total Attitude Score towards Obese People among UNIMAS Undergraduate Nursing Students ($n = 163$)	50
Table 4.12	Correlation Test between Total Knowledge Score regarding Obesity and Total Attitude Score towards Obese People among UNIMAS Undergraduate Nursing Students ($n = 163$)	52

LIST OF FIGURES

	Page
Figure 2.1 Conceptual Framework	21
Figure 3.1 Process of Data Collection	34
Figure 4.1 Histogram of Participants' Age ($n = 163$)	39
Figure 4.2 Box Plot of Participants' Age ($n = 163$)	39
Figure 4.3 Race of Participants ($n = 163$)	40
Figure 4.4 Year of Study of Participants ($n = 163$)	41
Figure 4.5 BMI Level of Participants ($n = 163$)	41
Figure 4.6 Histogram of Total Knowledge Score regarding Obesity among UNIMAS Undergraduate Nursing Students ($n = 163$)	48
Figure 4.7 Box Plot of Total Knowledge Score regarding Obesity among UNIMAS Undergraduate Nursing Students ($n = 163$)	49
Figure 4.8 Histogram of Total Attitude Score towards Obese People among UNIMAS Undergraduate Nursing Students ($n = 163$)	50
Figure 4.9 Box Plot of Total Attitude Score towards Obese People among UNIMAS Undergraduate Nursing Students ($n = 163$)	51

LIST OF ABBREVIATIONS

AFA	Anti-fat Attitudes
ATOP	Attitudes Toward Obese Persons
BMI	Body mass index
FMHS	Faculty of Medicine and Health Science
HEDIR	Health Education Directory
NHSI	The National Health Screening Initiative
ORK-10	Obesity Risk Knowledge scale
UK	United Kingdom
UNIMAS	Universiti Malaysia Sarawak
UniKL RCMP	Universiti Kuala Lumpur Royal College of Medicine
US	United State
WHO	World Health Organization

CHAPTER 1

INTRODUCTION

1.1 Study Background

Obesity is defined as chronic and complex health issues, marked by an accumulation of excessive adipose tissue that has the potential to adversely affect health outcomes (World Health Organization, 2024). Obesity represents a significant public health issue on a global scale, impacting millions of individuals and contributing to various chronic health conditions, including cardiovascular diseases, diabetes, and many different types of cancers. Malaysia also included in this issue. Not only that, but Malaysia is also the country in Southeast Asia with the greatest prevalence of obesity among the adult population (Mohd-Sidik et al., 2021). The National Health Screening Initiative (NHSI) 2023 reports that a significant proportion, specifically 53.5%, of Malaysians screened fall into the categories of overweight or obese, with 31.3% categorised as overweight and 22.2% as obese, defined as having a body mass index (BMI) above 25 kg/m² for overweight and 30 kg/m² for obese.

Obesity is becoming increasingly prevalent among young individuals, including university students, that highlights the need for targeted interventions to improve the healthcare in the society. It is essential for healthcare professionals, particularly nurses, to comprehend the causes, consequences, and preventive strategies associated with obesity, as they are critical in teaching and influencing patients' health behaviours. These ways examine the public health implications of obesity and emphasises the importance of the interprofessional team in formulating public health strategies aimed at the management and prevention of this condition (Tiwari & Balasundaram, 2023). The undergraduate nursing

students, who will become next generation of healthcare members, have a great opportunity to improve public health through the promotion of healthy lifestyles and the provision of counselling related to obesity. However, the success of interventions aimed at obesity in healthcare settings can be significantly affected by their own knowledge about obesity and the attitude towards obese people. For nursing students, having an adequate knowledge regarding obesity and a positive attitude towards obese people is crucial for effectively participating in obesity prevention, education, and management initiatives. It is important for nursing students to own knowledge and positive attitudes to deliver quality care to patients (Biresaw et al., 2020). Hence, the purpose of the research is to determine UNIMAS undergraduate nursing students' knowledge of obesity and their attitudes toward obese people.

1.2 Problem Statement

Obesity is becoming one of the biggest threats to the global public health in this era. Over the past three decades, obesity rates have increased by two to threefold in numerous countries worldwide, likely because of urban growth, inactive lifestyles, and an increased consumption of high calorie processed meals, in which are becoming the contributing factors of obesity (Tiwari & Balasundaram, 2023). All healthcare members, especially nurses must know in detail regarding obesity in risk factors, prevention and management so that implementation and intervention can be employed in nursing care and the quality of the care is assured. However, many nursing students nowadays have not received sufficient knowledge regarding obesity and there are also some of the students have negative attitudes towards people with obesity. If these problems continue, it will lead to poor quality management and stigmatisation. Stigmatisation can result in suboptimal care, postponed

diagnosis, unhealthy behaviours, and the aggravation of chronic health issues (Ginsburg & Sheer, 2022).

Study by Gormley and Melby (2020) found that nursing students in their research setting had inadequate understanding regarding obesity and demonstrated neutral attitudes towards individuals who are overweight or obese. Additionally, another study from Yilmaz and Ayhan (2018) showed that the attitudes and behaviours of nursing students towards individuals with obesity were found to be negative. There are some studies indicates that healthcare professionals tend to hold negative attitudes towards individuals with excess weight, frequently blame the psychological and behavioural factors as the roots of obesity (Sheer & Lo, 2023). That means nursing students must improve their understanding about obesity and positive attitude towards people who are obese. Healthcare providers, particularly nurses, are crucial in educating the public regarding the risks associated with obesity and in delivering suitable guidance regarding how to maintain a healthy body weight (Azhan et al., 2024). Moreover, no study has been performed in UNIMAS and also limited in Malaysia to know their level of knowledge regarding obesity and attitude level towards obese people. Therefore, the primary goal of this research project is to assess UNIMAS undergraduate nursing students' knowledge of obesity and attitudes towards obese people, in order to address existing research gaps.

1.3 Research Aim, Research Questions, and Research Objectives

1.3.1 Research Aim

This research project will be conducted to assess the knowledge of obesity and attitude towards obese people among UNIMAS undergraduate nursing student.

1.3.2 Research Questions

1.3.2.1 What is the level of knowledge of obesity among UNIMAS undergraduate nursing students?

1.3.2.2 What are the attitudes of UNIMAS undergraduate nursing students toward obese people?

1.3.2.3 Is there any significant relationship between level of knowledge and attitude towards obesity among UNIMAS undergraduate nursing students?

1.3.3 Research Objectives

1.3.3.1 To assess the level of knowledge about obesity among UNIMAS undergraduate nursing students.

1.3.3.2 To assess the attitudes of UNIMAS undergraduate nursing students towards obese people.

1.3.3.3 To examine the relationship between level of knowledge of obesity and attitude toward obese people among UNIMAS undergraduate nursing students.

1.4 Hypotheses

Null hypothesis (H_0): There is no significant relationship between the level of obesity knowledge and attitude regarding obese people among UNIMAS undergraduate nursing students.

Alternative hypothesis (H_a): There is a significant relationship between the level of obesity knowledge and attitude regarding obese people among UNIMAS undergraduate nursing students.

1.5 Significant of the Study

1.5.1 Nursing Education

This study highlights the opportunity to improve nursing curriculum by which ensures that students obtain comprehensive education and training in the care of individuals with obesity. This will result in the increased their knowledge and compassionate professionals in nursing. Like example, education regarding obesity can be taught and practiced in health education course in nursing programme to improve students' knowledge, fix their attitude and applying them to patients during clinical in health teaching. Nurses have an essential part in health education by encouraging patients and their families to live better lives, resulting in optimal well-being, health, and quality of life (Khazhymurat et al., 2023).

1.5.2 Nursing Practice

This research intends to improve the standard of care for individuals with obesity by recognising areas of inadequate knowledge and negative attitudes. The engagement in caring activities among nursing students was significantly influenced by their knowledge and attitudes. Improving understanding may lead to more effective and empathetic care for

individuals with obesity, thereby potentially enhancing their general health as well. Nurses can apply the knowledge into their practice like educating practice sharing to the individuals for the need to live better lives, control their cravings, and get past things that make them not want to change (Segal and Gunturu, 2024).

1.5.3 Nursing Profession

This research also can embrace nursing students in being equipped with the knowledge and attitude to assist in reducing the obesity prevalence. They will become advocate regarding health awareness about obesity within the society. Like example, nursing students have the potential to contribute to the prevention of childhood obesity by the giving of health education to the children and their relatives and the monitoring of their health when they have knowledge of obesity and good attitude towards obese people. Not only they can spread the knowledge and attitude to society, they also can practice to themselves. Hence, the students will become healthier and being a role model to the communities. Chunta (2020) stated that a nurse in excellent health may advocate, educate, and set a better example for patients, families, communities, and workplace.

1.6 Definition of Key Terms

Table 1.1

Definition of Key Terms

Key terms	Conceptual Definition	Operational Definition
Knowledge	Comprehension or understanding of a subject acquired by study or experience that is shared by an individual or the public at general (Cambridge Dictionary, 2024).	The level of knowledge and understanding regarding obesity including risk, prevention, and management. Total of 10 statements of knowledge from Knowledge regarding Obesity questionnaire by Moyo and Felix (2024) assessed in this section with five-point Likert scale. (1= Strongly disagree, 2 =Disagree, 3 = Do not know, 4 = Agree, 5= Strongly agree).

Attitude	An attitude consists of a set of feelings, beliefs, and actions that are orientated towards a particular individual, object, event, or concept. One alternative definition of attitude involves our evaluation of an individual or an object (Cherry, 2024).	It represents a person perspective, feelings, beliefs toward obese person. Total of 20 statements of attitude from Attitude towards Obese Persons (ATOP) Scale by Allison et al. (1991) assessed in this section with six-point Likert scale (-3= Strongly disagree, -2= Moderately disagree, -1= Slightly disagree, +1= Slightly agree, +2= Moderately agree, +3= Strongly agree).
Obesity	Obesity is characterised as a chronic and complex health issues, marked by an accumulation of excessive adipose tissue that has the potential to adversely affect health outcomes (World Health Organization, 2024).	The meaning in this research study is by assessing the level of knowledge of obesity among UNIMAS undergraduate nursing students.
Obese People	People with a body mass index (BMI) exceeding 25 are identified as overweight, while those with a BMI over 30 are categorised as obese. (World Health Organization, 2024).	The meaning in this research study is by assessing the level of attitudes towards obese people among UNIMAS undergraduate nursing students.
Undergraduate Nursing Students	An individual who is currently pursuing a Bachelor of Nursing at a university (Van Den Dungen, 2021).	In this research, undergraduate nursing students defines as individuals who enrol in, learn, and practice the competencies required to become a nurse within the Bachelor of Nursing with Honours program at UNIMAS.

1.7 Summary

In summary, having correct knowledge and positive attitude regarding obesity are vital for nursing students. However, there has been limited research about knowledge and attitude regarding obesity especially among nursing students. This study assesses and aims at improving the knowledge of obesity, and attitude towards obese people among UNIMAS undergraduate nursing students. This chapter describes knowledge, attitude, and characteristics of undergraduate nursing students at UNIMAS.

CHAPTER 2

LITERATURE REVIEW

2.1 Overview

A comprehensive analysis of recent research on obesity presented in this chapter. The study focusses on knowledge and attitudes related to obesity among nursing students. There are also conceptual framework following the last part of this chapter which is summary. The publications in this review obtained from reputable sources which includes Google Scholar, ResearchGate, and PubMed. To assure the literature's relevance, the review spans the previous ten years, between 2014 to 2024. Furthermore, to retain the precision of the study, it is critical to assess the quality of the studies by taking into account their technique, reliability, sample size, and validity, with a focus on studies that use strong methodologies and develop significant findings. The keyword terms included knowledge, attitude, obesity, obese people and nursing students.

2.2 Knowledge of Obesity

Knowledge is one of the most essential components in preventing the disease occurrence. Individuals possessing an excellent knowledge of health show a conceptual and objective understand of both general and specific health issues, thus improving their chances of expressing health protection and prevention strategies (Rincón Uribe et al., 2021). Knowledge regarding obesity from nursing students may be different what the school have educated them. In the nursing courses like health education, the students may have learned more detailed regarding obesity. This will sharpen their knowledge regarding the disease, and this will influence the way they promote health information to the community.

Embracing the knowledge may enhance the credibility and appropriateness of nursing students in their future roles as nurses involved in health promotion for patients with overweight and obesity issues (Gormley & Melby, 2020). If the nursing students do not take this matter seriously, it will cause a big problem not only for them, but also to the people surround them. Not only nursing students must take note regarding this knowledge, other healthcare professionals like doctors and nurses also must involve because all they are also becoming examples and guidance to all patients.

A wide range of research initiatives has been done to evaluate the knowledge levels of specific demographic groups worldwide concerning obesity. Gormley and Melby (2020) conducted a study from a university in United Kingdom (UK), involving full-time students nursing courses from year one until year three ($n = 211$). The researchers used the Obesity Risk Knowledge scale (ORK-10) from Swift et al. (2006) to know the nursing students' knowledge about Obesity-related health risks. The total score of knowledge is classified as follows: a very good knowledge level is indicated by a score ranging from 7.51 to 10.0 points, good knowledge is represented by a score between 5.01 and 7.5 points, poor knowledge falls within the range of 2.51 to 5.0 points, and very poor knowledge is characterised by a score from 0 to 2.5 points. The findings show that nursing students are having low levels of knowledge of obesity. A total of 79 individuals, representing 36%, exhibited very poor to poor knowledge, whereas 105 individuals, accounting for 48%, demonstrated good to very good knowledge and mean score for the total knowledge score is 5.7. A total of 35 individuals, representing 16% of the sample, did not respond to this scale. Poor knowledge regarding obesity may influence the potential in health promotion to future patient (Gormley & Melby, 2020). Thus, this research highlighted the lack of nursing students' knowledge regarding obesity. The gap for this research is it only mention about

knowledge of obesity risk which is not showing overall knowledge like management, prevention, and complication.

Similar findings were found in another study by Tiryag and Atiyah (2021) on the knowledge of obesity among 100 nurses working in the surgical wards at four different teaching hospital in Al-Basra City, Iraq. There are six questions answered by the nurses and each question comprises three items categorised as Know, Uncertain, and Don't Know. Responses are categorised as follows: 3 means knowledge of the answer, 2 signifies uncertainty, and 1 means a lack of knowledge. A significant majority of the nurses, specifically total of 67 nurses (67%), demonstrated a weak understanding of obesity, as indicated by a mean score ranging from 1 to 1.66. In contrast, 30 (30%) exhibited a medium level of knowledge, with a mean score between 1.67 and 2.33. Only a small group, amounting to 3 (3%), achieved a good level of knowledge, reflected by a mean score from 2.34 to 3. This study indicates nurses in Al-Basra city having a poor level of knowledge regarding obesity and obesity-related comorbidities. It will cause the difficulties to the patient to receive health promotion in the region. Practitioners are essential in facilitating patient empowerment for health improvement (Sheer & Lo, 2023). The research gap is the study only focused on nurses, not nursing students and the study only focused on evaluating knowledge without find the reason of the knowledge deficit. The other gap is the researcher employed non-probability purposive sampling which will presents a potential risk of study bias. There is a high chance of bias in the data, especially research bias, because the sample units to use will be choose by the researcher's subjective judgement (Nikolopoulou, 2022). The sample size is also small, which will weaken outcomes and make the results less generalisable.

Styk et al. (2024) had done research at a few universities in Poland included 120 nursing students from Poland and 119 nursing students from Nigeria. They also used the ORK-10 English version from Swift et al. (2006) for the Nigerian students and Polish-language adaptation developed by Styk et al. (2022) for Polish students. The result from ORK-10, shows that a mean score from Polish students was 5.20 ($SD = 1.45$) which was higher than mean score Nigerian students which was 2.59 ($SD = 1.61$). It means that the students from Nigerian present lower levels of knowledge of obesity than the polish students. However, most of the students need to improve the knowledge regarding obesity to achieve good knowledge instead of having average and poor knowledge. The research gap for this paper is it a comparative study with different cultures. The result may be influenced by different type cultures which will lead to cultural bias in interpretation. Culture plays a crucial part in affecting individuals' reasoning, manner, and modes of communication (Tao et al., 2024).

However, Elsafi et al. (2024) have a different result after performed a research study regarding knowledge and practice of obesity towards healthcare professions students in Saudi Arabia. Total students who participated are 709. The knowledge section comprised seven questions related to the risk factors, consequences, and prevention of obesity, yielding a total score of 14. The result of knowledge of obesity shows that the mean knowledge score documented was 9.89 out of 14, equating to 70.6%. The knowledge score displayed a significant variation in relation to age ($P=0.048$). The data indicates that students aged over 24 years exhibited a higher level of knowledge, scoring an average of 10.14, which corresponds to 72.4%. In contrast, the cohort of students under 18 years demonstrated the lowest level of knowledge, with an average score of 9.39, equating to 67.1%. This happens due to the student aged 24 years old have learnt and exposed early and detailed regarding

obesity meanwhile the youngsters only know basic about the disease. This study shows that the increase of level of knowledge relation to age which is important in health education and promotion to the youngsters. The gap of this paper focusses on diverse populations, which did not specify groups, especially nursing students, potentially leading to varied results due to the combination of different populations.

Another study was conducted by Azhan et al. (2024) on undergraduate students at Universiti Kuala Lumpur Royal College of Medicine (UniKL RCMP) Malaysia about knowledge, attitudes, and prevalence regarding overweight and obesity. This study had 351 participants including the students Bachelor of Nursing Science and Diploma in Nursing from the university. The classification of overall knowledge scores adhered to Bloom's cutoff criteria, where a total score ranging from 80% to 100% signifies good knowledge, scores between 60% and 79% denote moderate knowledge, and scores falling below 60% indicate poor knowledge. The average knowledge score of the participants was 52.85 ($SD = 4.106$). The participants demonstrated a strong understanding of overweight and obesity, as evidenced by a scoring percentage of 88.08%. A total of 316 (90.0%) students had good knowledge regarding obesity and overweight, whereas only 33 (9.4%) students fell into the category of moderate knowledge and only 2 (0.6%) students in category of poor knowledge. This indicate a good sign because comprehending the existing knowledge is crucial for informing intervention strategies and health programs designed to decrease the prevalence of obesity (Olawuyi & Sadiq, 2022). The gap for this research is the study design is cross-sectional, so it only provides insight in one point in time. The researchers also perform the study which does not specify only for nursing students in this study, instead the researchers included all health profession in this study that will cause findings not accurately represent nursing students.

Shkur and Shakor (2023) assessed knowledge about risk factor regarding obesity among nurses in Sulaimani city hospitals. The sample for this study comprised 101 nurses, gathered from both Sulaimani Teaching Hospital and Soz Mental Hospital located in Sulaimani city. There are two types of questionnaires regarding knowledge in this study which are risk factors (13 items) and prevention (six item) of obesity. Both questionnaires are dichotomous scale (1=yes, 0=no). Based on the knowledge about obesity risk factors among nurses, the findings indicate that nearly all respondents, 97 (96%), answered yes on the effects of age on obesity throughout the lifespan, yielding a mean score of 0.960. Additionally, regarding the influence of genetics, the data reveals that a substantial number of nurses, particularly 97 participants (96%), responded yes, yielding a mean score of 0.960. A significant proportion of nurses, specifically 91 (90.1%), demonstrate a strong understanding of the relationship between obesity and various medical issues. A moderate percentage of nurses, specifically 68 (67.3%), possess an intermediate level of understanding about the relationship between obesity and smoking cessation. As it relates to inactivity and sedentary lifestyle, a significant majority of nurses, specifically 87 (86.1%), demonstrate a strong understanding of the correlation between obesity and these lifestyle factors. Furthermore, approximately 70% of the nurses, specifically 70 individuals representing 69.3%, demonstrate a strong understanding of the connection of obesity and specific medications. A total of 73 individuals, representing 72.3%, demonstrate a strong understanding of the association between obesity and social or economic factors within the community. Meanwhile, based on knowledge of nurses regarding obesity prevention, specifically regarding the impact of enhanced sleep on obesity throughout the lifespan, the response from almost all participants was yes, with 92 individuals (91.1%) indicating agreement and a mean score of 0.911. Additionally, regarding the impact of stress reduction,

a significant proportion of nurses, specifically 83 individuals (82.2%), responded yes, yielding a mean score of 0.822. A significant proportion of nurses, specifically 84 (83.2%), demonstrate a strong understanding of the relationship between obesity and the enhancement of medical activities. The results of this study indicate that nurses possess a substantial understanding of the risk factors and prevention associated with obesity (Shkur & Shakor, 2023). Thus, this study showed a good knowledge toward obesity. The gap of the research is it used nonprobability convenience sampling method which can cause selection bias because it does not randomly select participants (Edgar & Manz, 2017). The sample size also small, which could impact the accuracy of the results, and the findings may lack generalisability.

2.3 Attitude towards Obese People

Nowadays, the prevalence of obese people is rising and significantly, not only in Malaysia but also around the world. According to WHO (2024), in the year 2022, it was observed that 1 in 8 individuals globally were affected by obesity. The prevalence of adult obesity on a global scale has increased more than twice since 1990, while the rate of obesity among adolescents has seen a four-time rise. This raises concern among everyone. The elevation of prevalence led to the emergence of various attitudes toward obese people among people, including healthcare professionals like doctors and nurses. Negative attitudes of healthcare providers towards individuals with obesity can result in poor healthcare for this population. Negative attitudes towards obese individuals, such as obesity stigmatisation, have detrimental implications, including psychologically, physically, and socioeconomically harm (Westbury et al., 2023). Individuals with obesity encounter prejudice in employment environments, healthcare institutions, educational establishments,

interpersonal connections, and media representations, which are particularly severe (Faiswal Kasirye et al., 2020).

Numerous research has been conducted to examine the attitudes of demographics globally towards individuals with obesity. The same research by Gormley and Melby (2020) shows that students exhibited good or highly positive attitudes towards obese people. The researchers used Attitudes Toward Obese Persons (ATOP) Scale from Allison et al. (1991) to assess stereotypical attitudes towards individuals with obesity. The questionnaire scores are categorised into quartiles as follows: 0 to 30 indicates very negative attitudes; 30.01 to 60 reflects negative attitudes; 60.01 to 90 represents positive attitudes; and 90.01 to 120 signifies very positive attitudes. The lowest score recorded on the questionnaire was 63, whereas the highest score achieved was 107, with a result, mean of 86.1 in which is situated at the positive range. That means most of there is no student reflect negative attitudes. Thus, this study showed most of nursing students in the university at UK are having neutral attitude toward obese people. The gap in this research is the questionnaire was self-reported which can introduce bias, which they participants may give false attitudes (Latkin et al., 2017).

Ahmed et al. (2024) performed research objectively to assess the attitudes of nursing students regarding individuals with obesity. The study encompassed 129 nursing students from second to fourth stage at college of nursing in university of Mosul. 51.16% of the participants exhibited positive attitudes towards individuals with obesity and 48.84% of the participants are negative attitudes. This result indicates that, despite there are positive attitudes towards obese people, there are substantial number of participants who are still hold negative views, that means they require interventions to promote and compassionate and unbiased perspectives. It is recommended to avoid from expressing negative emotions and behaviours towards individuals with obesity. Instead, it is important to promote

encouragement and support for their efforts to manage weight, thereby addressing health issues associated with obesity (Ahmed et al., 2024). Some research reveals that healthcare personnel often retain negative views towards persons with excess weight, commonly attributing obesity to psychological and behavioural issues (Sheer & Lo, 2023). The gap for this research is the understanding of the participants' attitudes towards obese people are limited. There is not much research evaluate the nursing students view obese people. Other gap is the research does not explore other influencing factors like personal experience with obesity, cultural beliefs, and exposure of obesity-related education that may affect the result.

As evidence from Darling and Atav (2019) who conducted a research study about attitudes towards obese people involving nursing and other students which are education and social work student, and it is a comparative study. This study was conducted at a well-known university in Upstate New York, United State (US), which consists total of seven distinct institutions and provides both undergraduate and graduate educational programmes. A total of 440 participants successfully finished the questionnaire, comprising 338 nursing students at both graduate and undergraduate levels, 34 graduate students in education, 56 graduate students in social work and 10 from other courses. The researchers used ATOP Scale in their study to evaluate attitude towards obese people. Analysis of the data reveals that, the attitude towards obese people results is nursing students are likely to exhibit the second lowest positive attitudes compared to the education, social work, and 'other' category students. The mean attitude towards obese people score for nursing students was 68.52 ($SD = 16.57$), while the mean for education, social workers and 'other' category was 71.46 ($SD = 14.45$), 77.32 ($SD = 15.82$), and 66.46 ($SD = 12.47$). At the same time, graduate nursing students are expected to exhibit similar attitudes as the undergraduate in the same program due to the scores were not statistically different (Darling & Atav, 2019). The research gap is the study

is comparative but with different type of population, which the researchers did not specify the population only for nursing students and the findings may be inconsistent. Each sample group also have a big difference of the sample size which cause the findings have major contrast (Althubaiti, 2022).

A study conducted by Ozaydin and Kaya Tuncbeden (2022) involving 233 nursing students from second to fourth year in nursing department of a state of university in Turkey to determine levels of prejudice and stigma, which are both forms of negative attitudes toward individuals with obesity toward individuals with obesity. The GAMS-27 Obesity Prejudice Scale and the Stigma Scale were used to assess the level of prejudice and stigmatization. Significant levels of prejudice and stigmatization against individuals with obesity were observed, indicating a positive correlation between the two variables. Fourth-year students exhibited significantly higher levels of prejudice compared to the second- and third-year students. This occurrence may be linked to exposure to discriminatory and stereotypical situations within healthcare settings (Arvelo-Rodríguez et al., 2025). The research gap in this study is the researchers did not include the positive attitude of the students which the study focused only on the negative aspects, specifically prejudice and stigma. This presents a one side perspective, disregarding the possibility that some students may possess accepting, respectful, or empathetic viewpoints. Besides, the absence of measuring positive attitudes may lead to an overemphasis on negativity, potentially resulting in an unfair generalization of students' perspectives.

Another research was performed by Yilmaz and Ayhan (2018) in Department of Nursing of Ankara University, Turkey including 437 nursing students. The researchers used two types of questionnaires which are Fat Phobia (short form with 14 characteristics) and

ATOP scales. Mean average Fat Phobia and ATOP Scales scores were established at 3.80 ($SD = 0.51$) and 59.80 ($SD = 14.24$), respectively. The attitudes of nursing students towards individuals with obesity were found to be negative. Based on Fat Phobia scale, A significant proportion of nursing students perceive fat individuals as lazy (59.5%), lacking willpower (49.4%), unattractive (68.2%), exhibiting insufficient self-control (71.6%), slow (81.0%), lacking endurance (57.4%), inactive (80.3%), self-sacrificing (65.9%), prone to overeating (81.4%), insecure (48.5%), and possessing low self-esteem (48.5%). Then, two items from ATOP scale shows nursing students' response, 38.7% who expressed strong agreement indicated that "Obese workers cannot be as successful as other workers." Conversely, 41.4% were strongly disagreed with this sentence "Obese people are just as sexually attractive as nonobese people." Hence, this study highlighted negative attitude toward obese people happen at one of the universities in Turkey. The gap in this research is it has limited demographic analysis. The research paper did not investigate it deeply on how the demographic factors affect the attitudes.

Additional findings by Rodríguez-Gázquez et al. (2020) revealed negative attitude of nursing students towards people with obesity significantly changed after academic training. This study comprised nursing students ($n = 578$) from the first, second, third, and fourth years at the Faculty of Nursing, Physiotherapy and Podiatry at Universidad de Sevilla, Spain. The study used an appropriate validated scale called the Anti-fat Attitudes (AFA) questionnaire that indicates explicit prejudices against obesity. There are three domains of AFA questionnaire (Dislike, Willpower, and Fear of Fat). First-year students attained elevated scores on the scale, indicating stronger attitude against obesity, while the lowest scores were observed in the fourth year. The findings indicate the attitudes decreased as students progressed in their degree. Hence, the findings indicated that students' attitudes

improved over the course of their academic years. The research gap in this study is using cross-sectional studies instead of longitudinal which cannot establish causality or observe changes in attitudes within the same group of students over time. A longitudinal design could have yielded different outcomes and would have been more suitable for capturing changes in attitudes. Another research gap in this study is only focused on the negative attitude level instead of assessing the overall attitude level. The study may not comprehensively reflect the complexity of students' attitudes, including neutral or positive attitude of obese people.

2.4 Relationship between Knowledge of Obesity and Attitude towards Obese People

Understanding the relationship between these variables is essential because it can affect the quality of care and treatment towards obese patients among nurses. A comprehensive understanding of the causes and complexities of obesity, derived from precise knowledge, has the potential to significantly alter and enhance societal perceptions and treatment of individuals with obesity. This can help reduce stigma and enforce more supportive environment for effective weight management. The understanding of obesity risk correlates with the beliefs and attitudes held towards individuals with obesity (Styk et al., 2022).

A study was conducted by Styk et al. (2022) shows that there is a high positive correlation. Research was conducted on 306 individuals. A very strong correlation was found between knowledge regarding obesity risk and attitude towards obese people ($p < 0.01$). A strong positive correlation ($r = 0.77$) was found in the correlation among knowledge of obesity risk and attitude towards obese people, with a significant correlation ($p < 0.01$), indicated that when the level about knowledge of obesity risk increased, the attitude towards obese people also increased as well. Thus, knowledge regarding obesity is associated with

attitudes about obese people. The research gap for this study is the study does not include the diversity of samples regarding socio-demographics. This will narrowing the different groups' knowledge towards obesity.

However, the result obtained from Gormley and Melby (2020) was different which found out that there were no statistically significant correlations were found. The relationship between the total scores of obesity knowledge risk and attitude towards obese people was analysed utilising Spearman's Rank Order Correlation. Upon examining the philosophy underlying health promotion models, it can be believed that these models support the concept of an absence of a direct correlation between knowledge and attitudes, as posited by Theory of Planned Behaviour (TPB) (Gormley & Melby, 2020). The gap for this research is the additional factors affecting the variables were not fully studied. Another gap is that the research was conducted at a single university, which may limit the generalisability of the findings.

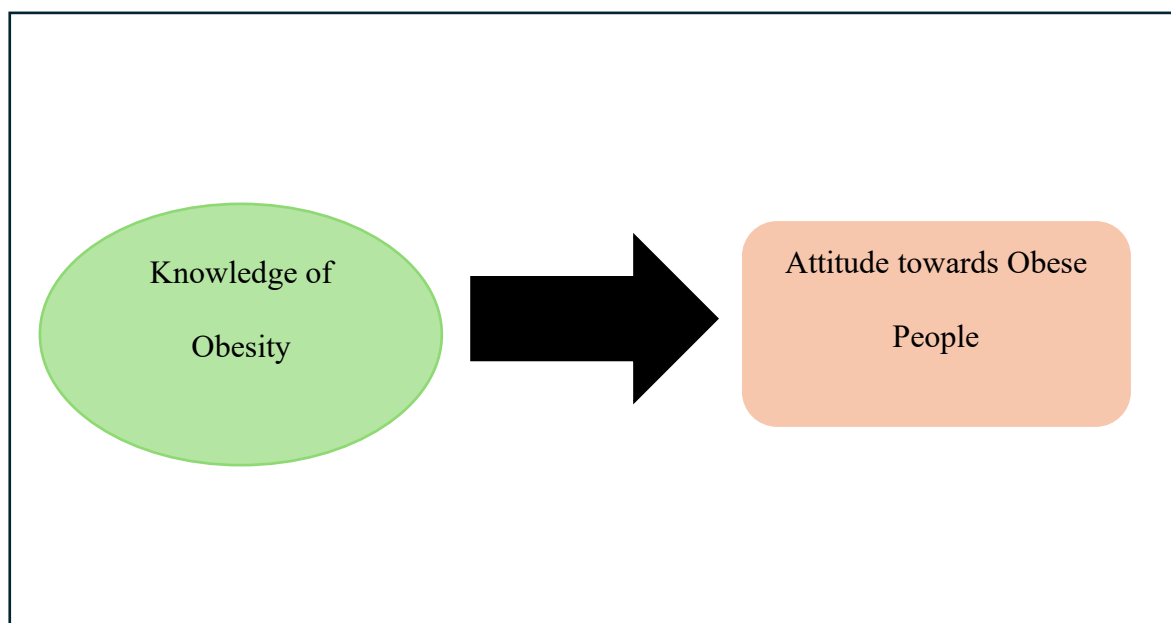
Another study from DeBarr and Pettit (2016) regarding knowledge of obesity and attitudes toward obese individuals among health educators in Health Education Directory (HEDIR) which is an online discussion platform and network, indicated that there was no statistically significant relationship between participants' knowledge of obesity and their attitudes toward obese people. The relationships between knowledge of obesity from health educators and their attitudes towards individuals who are obese have been assessed using Pearson correlation coefficients. This study used AFA questionnaire in which have the Pearson correlation result, Dislike subscale ($r = -0.02$), Willpower subscale ($r = -0.19$), and Fear of Fat subscale ($r = -0.20$). The data indicates that there is no statistically significant correlation between participants' knowledge of obesity and their attitudes towards individuals with obesity based on the result given (DeBarr & Pettit, 2016). The research gap

for this study is the study did not focus specifically on nursing students, which the participants was mixed with other healthcare professionals and not represent only for nursing students, and sample size is 93 participants only which is small that may limit the generalizability of the finding and could be potential bias, increased sampling error, and reduce statistical power that make it harder to detect the significant of relationship. A sample that is too small lacks scientific rigour and raises ethical concerns (Andrade, 2020).

2.5 Conceptual Framework

Figure 2.1

Conceptual Framework



This study used a conceptual framework, as illustrated in Figure 2.1, to illustrate the hypothesised relationship between knowledge of obesity and attitudes towards obese individuals among nursing students at UNIMAS. This framework indicates that an individual's attitude towards obese individuals may be shaped by their knowledge of obesity. A higher level of knowledge regarding obesity correlates with more favourable attitudes towards individuals with obesity, and conversely, a lack of knowledge is associated with negative attitudes.

2.6 Summary

In conclusion, comprehending knowledge of obesity attitudes towards obese people is crucial for the implementation of care and treatment methods in healthcare environments for the better outcome. It is essential to examine the relationship among the variables. However, there is a significant lack of investigation into the relationship between knowledge of obesity and attitude towards obese people. In the literature review, most of the articles reported only about the knowledge about obesity and the attitude towards obese people but there is limited research regarding the relationship between them. Therefore, it is essential to perform this research to assess the level of information regarding obesity and attitudes towards obese individuals, particularly among UNIMAS undergraduate nursing students.

CHAPTER 3

METHODOLOGY

3.1 Overview

There are 11 sections in this chapter, which include the research design in section 3.2, section 3.3 describes the research setting and inclusion and exclusion criteria presented in section 3.4. Meanwhile, sampling method and sample size are comprised in Section 3.5. Study instrument presented in section 3.6. In section 3.7, it includes validity and reliability. Then, ethical consideration discussed in section 3.8. Section 3.9 explains about data collection procedure. Data analysis method is in section 3.10. The end of chapter is the summary in section 3.11.

3.2 Research Design

A research design defines a suitable plan established by a researcher prior to data collection, aimed at achieving the research objectives in a valid way (Asenahabi, 2019). This study utilised quantitative and cross-sectional design. The process of collecting and analysing numerical data is referred to as quantitative research (Bhandari, 2023). The quantitative study design aligns with the objectives of this study. The cross-sectional study represents the most suitable design for correlate and comparing prevalence, knowledge, or attitude among participants. Cross-sectional study also inexpensive and simple technique to collect initial data (Thomas, 2020). Cross-sectional study is a type of observational research that assesses the data of a limited population at a specific period of time (Wang & Cheng, 2020). Thus, cross-sectional study is applied in this research.

3.3 Research Setting and Population

This research was conducted within the Faculty of Medicine and Health Sciences (FMHS) at Universiti Malaysia Sarawak (UNIMAS). UNIMAS is a public university located on Jalan Datuk Mohammad Musa, 94300 Kota Samarahan, Sarawak, Malaysia. The faculty provides a thorough four-year curriculum referred to as the Bachelor of Nursing with Honours. The study encompassed students participating in the nursing program across all four academic years, from Year 1 through Year 4. The current enrolment figures for the Bachelor of Nursing degree indicate a total of 234 undergraduate students. The sample consists of 51 students from Year 1, 63 students from Year 2, 57 students from Year 3, and 63 students from Year 4. The faculty was selected as the research site because of its function as the venue for nursing theory and clinical skills classes.

3.4 Sampling Method and Sample Size

3.4.1 Sampling Method

Sampling is a process of selecting a subset from a population of interest within a research study (Turner, 2020). The UNIMAS undergraduate nursing students from Year 1 to Year 4 became the sample for this study. The selection of participants was conducted using a simple random sampling method. Simple random sampling is classified as a type of probability sampling (Hayes, 2023). Simple random sampling was selected due to its unbiased and straightforwardness in obtaining a representative sample from a bigger population. Simple random sampling is an unbiased and impartial strategy that ensures equal probability of selection for all individuals in the population (Noor et al., 2022). The use of this randomisation method in this sample enhances both internal and external validity, thereby minimising the potential for research biases, including selection bias and

sampling error (Thomas, 2023). The population list for this study was generated through the utilisation of a computer program that produces random numbers, resulting in a comprehensive numerical list that encompasses the entire sample size. A comprehensive list of nursing students spanning from year 1 to year 4 was acquired from the academic office of FMHS, UNIMAS. The names on the list were systematically organised based on the matric numbers in IBM SPSS Version 27.0 software. Then, ‘Random Sample’ was employed for simple random sampling in IBM SPSS Version 27.0 software.

3.4.2 Sample size

The sample size calculation was performed using Taro Yamane Formula (1973) which is shown in Equation 3.1. The calculation was performed as follows:

$$n = \frac{N}{1 + Ne^2}$$

Equation 3.1

n = Sample size

N = Population size

e = Error (0.05) reliability level 95%

$$n = \frac{N}{1 + Ne^2}$$

$$n = \frac{234}{1 + (234)(0.05)^2}$$

$$n = 147.63$$

$$n \approx 148 \text{ participants}$$

According to this formula, the anticipated sample size for this investigation is 148 participants. To account for participant compensation and refusals, researchers should increase the sample size by 10% (Das et al., 2016). Many researchers enlarge the sample size by 10%, or by any defensible proportion, in order to compensate for incomplete information (Andrade, 2020). To cover the missing data in the sample, an additional 10% attrition rate was applied. After adding 10%, the total final sample size, the number of participants is 163 people. The calculation was as follows in Equation 3.2:

Calculation of final sample size with attrition rate (Equation 3.2):

$$\text{Final Sample size} = \text{sample size} + (\text{Sample Size} \times 10\%)$$

Equation 3.2

$$\text{Final Sample size} = 148 + (148 \times 10\%)$$

$$= 148 + 14.8$$

$$= 162.8$$

$$\approx 163 \text{ participants}$$

In conclusion, total of 163 participants needed in the actual study.

3.5 Inclusion and Exclusion Criteria

3.5.1 Inclusion Criteria

This research project focused on undergraduate nursing students from Year 1 to Year 4 at the University of Malaysia, Sarawak (UNIMAS) who are currently pursuing studies in the nursing programme. The selection of students as participants were determined by their voluntary participation in the survey.

3.5.2 Exclusion Criteria

This research project excluded postgraduate and post-registration nursing students, participants from the pilot study, and students who express hesitation or decline to offer consent for participation.

3.6 Research Instrument

A research instrument is a tool used to assist in collecting, measuring, and analysing the data used in a research study. The researchers will often select the research instruments that best suits their methodology (Mallory-Kani, 2022). The questionnaire was presented in English. This study used a self-administered questionnaire used from a prior study from Moyo and Felix (2024) and Allison et al. (1991) with the authors' permission (refer Appendix E) before employing the questionnaire for this study or making modifications to ensure it aligns more efficiently with the current investigation. The instrument was classified into three sections: A, B, and C (refer Appendix D)

Section A comprised of the socio-demographic information of the participants, including variables like age, gender, year of study, race, and BMI level with the BMI

calculator link provided (refer to Appendix D). In this section, participants are required to indicate their response by fill in the blanks and marking (✓) the appropriate box provided.

Section B presented the degree of knowledge of nursing students towards obesity. There are a total of 10 statements with five-point Likert Scale of Knowledge regarding Obesity questionnaire by from Moyo and Felix (2024) (refer to Appendix D). Each statement presented a five choice with the option strongly disagree (1 point), disagree (2 points), do not know (3 points), agree (4 points), and strongly agree (5 points). The lowest score is 10, while the highest score is 50. Scores ranging from 40 to 50 indicated good level of knowledge, while those between 30 and 39 reflected an average understanding. Scores below 30 are categorised as indicative of poor knowledge. The participants need to tick (✓) their answer in the box provided. No negative statement and reverse coding done in this section.

Section C consisted of 20 statements to determine the attitude towards obese people among UNIMAS undergraduate nursing students, using ATOP Scale which was created by Allison et al. (1991) (refer to Appendix D). This section assessed using six-point Likert scale with the options strongly disagree (-3 points), moderately disagree (-2 points), slightly disagree (-1 points), slightly agree (+1 points), moderately agree (+2 points), strongly agree (+3 points). The more positive attitudes are represented by higher numbers of score. The participants need to mark each statement in the blanks provided. For the scoring instructions for ATOP, there are 3 steps. The initial step is to apply a multiplication value of (-1) or reverse coding to the responses for the following items, which includes Item Two through Item Six, Item 10 through Item 12, Item 14 through Item 16, as well as Item 19 and Item 20, correctly reversing the scoring direction because the items mentioned are negative statements. The subsequent step involves aggregating the responses across all items. The

final procedure involves adding 60 to the value derived in Step 2. The value presented here corresponds to the ATOP score. The scoring system operates on a scale from 20 to 120, with elevated scores indicating a more favourable attitude towards individuals with obesity.

3.7 Validity and Reliability

3.7.1 Validity

Validity is the accuracy with which the concept is measured in quantitative research (Heale & Twycross, 2015). Pilot study was conducted to ascertain the validity. A pilot study was used to select the sample size and evaluate various parts of the study. Pilot study assists researchers in avoiding unnecessary work, saving money, and making efficient use of participants' time (In, 2017). Participants from the pilot study were excluded from the main study. Aside from that, nursing practice specialist, which is a supervisor, agreed with the content and face validity of the questionnaire. The purpose of content validity is assessing the degree to which each item within instrument fulfils its intended purpose. In contrast, face validity is determined by the researcher's subjective judgement, which encompasses their feelings, thoughts, and intuition regarding the instrument's effectiveness (Surucu & Maslakci, 2020). Thus, the supervisor must evaluate the validity of the questionnaire before assessing participants' knowledge of obesity and their attitudes towards obese individuals.

3.7.2 Reliability

Reliability in quantitative research refers to the processes and outcomes being precisely replicable (Leung, 2015). When the finding is valid, it indicates that it is statistically accurate. Cronbach's alpha is the most frequently utilised measurement for evaluating the internal consistency of an instrument. The study's reliability was conducted through the interpretation of the Cronbach's alpha value, which is situated within the range

of 0.00 to 1.00. A numerical value approaching 1.00 signifies a significant degree of reliability, reflecting both effectiveness and quality (Arof et al., 2018). Cronbach's alpha values are characterised unacceptable in less than 0.59, 0.50 to 0.59 range as poor, and 0.60 to 0.69 as questionable. Continue with acceptable within the range of 0.70 to 0.79, whereas values of 0.80 to 0.89 signify a good level of reliability, and those exceeding 0.90 are considered excellent. The generally recognised acceptable range for Cronbach's alpha is a value of 0.70 or more (Howard, 2016). The questionnaire for Knowledge regarding Obesity from Moyo and Felix (2024) had a reliability of 0.82. and for questionnaire of Attitude Towards Obese Persons (ATOP) Scale by Allison et al. (1991) had reliability of 0.80 for undergraduates. Both reliabilities are in good range.

3.8 Ethical Consideration

Ethical approval was acquired from the Research and Ethics Committee, FMHS following the submission of the ethical approval letter alongside with Participant Information Sheet (PIS) (refer Appendix A and B). It is essential to adhere to ethical principles in order to protect the dignity, rights, and welfare of individuals who are engaged in research (WHO, 2021). Before the study commenced, participants were provided with the PIS to inform them about the study and they were obligated to give formal informed consent by filling the informed consent form (refer Appendix C), proving the willingness to engage in the research that was attached in questionnaire. Participants also were informed the right to withdraw anytime. Furthermore, the original authors of the questionnaires received a formal email seeking permission to use their questionnaire instruments utilised in this study. All material obtained during this study was kept in a confidential and discreet manner, utilised only for research purposes. Access to the data was limited to the researcher and their supervisor only. All gathered data was carefully kept in password protection system to

ensure the confidentiality. At the end of the study when no longer needed, all data was securely destroyed by permanently deleted from storage devices.

3.9 Data Collection Procedure

3.9.1 Pilot Study

A pilot study serves as a preliminary investigation aimed at evaluating different components of the methodologies intended for a next, more extensive, or confirmatory research work (Lowe, 2019). A pilot study was conducted before the actual study involving participants who meet the inclusion criteria, with the objective of assessing the reliability and validity of the questionnaire. The pilot study, as reported by Whitehead et al. (2015), encompassed 10% of the overall sample size. The individuals who took part in the pilot study were omitted from the actual study. The objective of conducting a pilot study was to determine appropriate sample size and evaluate various elements of the main study. Face validity and content validity were applied to the research instrument to ensure the instrument was appropriate, complete and understandable. Cronbach's alpha was employed to evaluate the consistency and reliability of the instrument utilised in the study. A pilot study was set to be carried out with a sample size of no less than 10% from final sample size (163 participants), comprising $16.3 \approx 16$ nursing students that were not be part of the final sample size presented on Equation 3.3 who fulfil the inclusion criteria. To avoid the risk of bias, individuals who became the pilot study participants were excluded from the participation in the actual study. Pilot study participants were selected via simple random sampling. The questionnaires were distributed using online google form due to fast distribution and collection, not using any money and more energy, and it is also can be easy to approach and detect the participants who does complete or not complete the survey. The time frame to

finish the questionnaire was in about 15 to 20 minutes. The researcher provided the contact numbers to stay informed about their progress. For the reliability test in this pilot study, both reliabilities for Knowledge regarding Obesity questionnaire and ATOP Scale were found to be acceptable (10 items: $\alpha = .74$; 20 items: $\alpha = .71$).

Calculation of pilot study (Equation 3.3):

$$\text{Pilot study} = \text{Final sample Size} \times 10\%$$

Equation 3.3

$$\text{Pilot study} = 163 \times 10\%$$

$$= 16.3$$

$$\approx 16 \text{ participants}$$

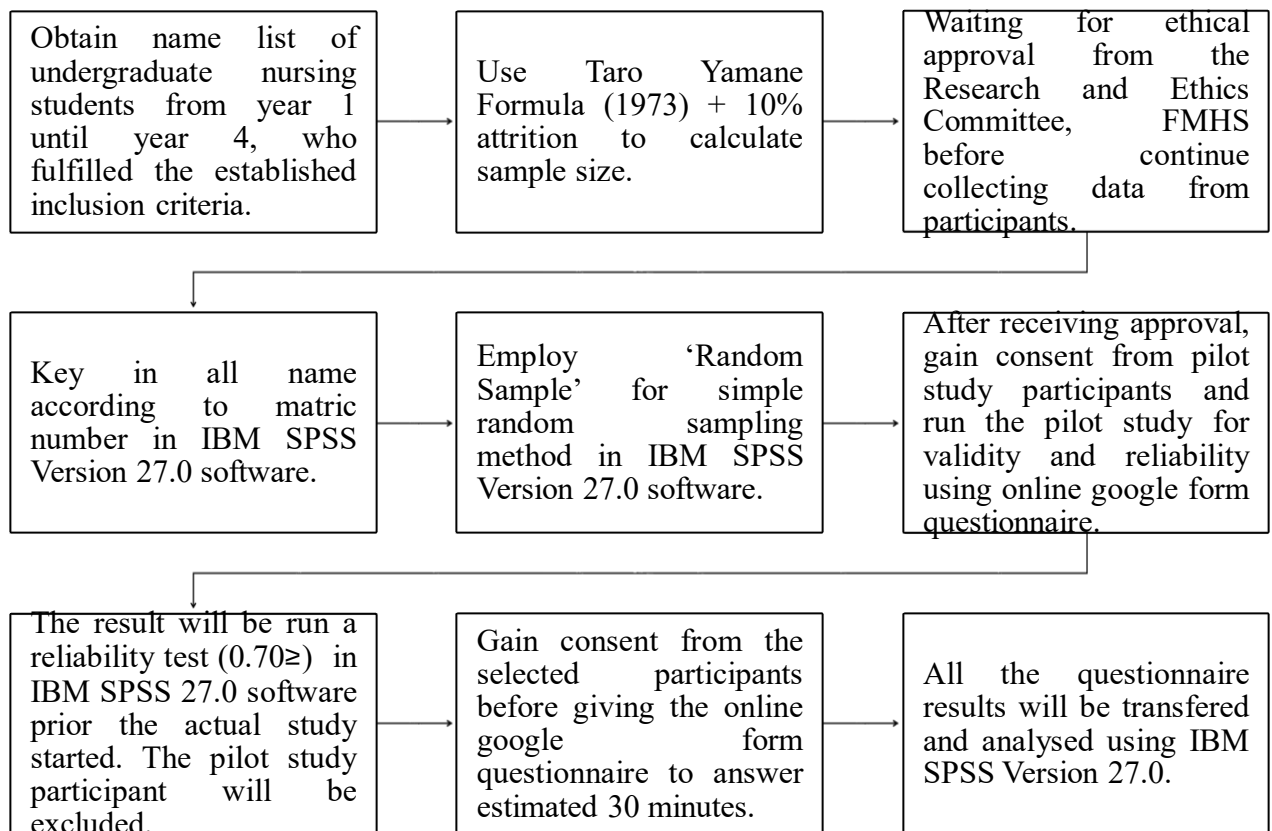
3.9.2 Actual Study

This study employed a probability simple random sampling method to choose the sample from the population. Initially, the criteria for inclusion and exclusion were established to delineate the target population of the research. The target population consist of undergraduate nursing students at UNIMAS, spanning from Year 1 until Year 4, who fulfilled the established inclusion criteria. A comprehensive list of nursing students spanning from year 1 to year 4 was acquired from the academic office of FMHS, UNIMAS. The total participants of the actual study are 163 out of 218 (234 individuals from total population minus 16 pilot study participants), calculated using Taro Yamane Formula (1973) and

accounting for a 10% attrition rate. The questionnaire utilised in this study was derived from the works of Moyo and Felix (2024) and Allison et al. (1991), with modifications made to align with the specific objectives of this research. The individuals who fulfilled the criteria for this study and expressed a willingness to engage in the research were recruited after receiving ethical approval from the Research and Ethics Committee, FMHS. The research utilised online google form questionnaire, which prepared in English due to fast distribution and collection, not using any money and more energy, and it is also can be easy to approach and detect the participants who does complete or not complete the survey. The online google form questionnaires were disseminated to the participants using WhatsApp and subsequently retrieved after a duration of 15 to 20 minutes. The participants were provided with the PIS to inform them about the study. Then, they were required to sign informed consent before to the initiation of the research, indicating their willingness to participate and their understanding of their rights. The contact number of the researcher also included in the consent form, allowing participants to reach out with any questions regarding the questionnaire. Figure 3.1 shows the methodology plan employed for data collection, encompassing both the pilot study and the actual study. For the reliability test in this actual study, reliability for knowledge regarding obesity questionnaire was found to be good (10 items: $\alpha = .81$) and for ATOP Scale was found to be acceptable (20 items: $\alpha = .70$).

Figure 3.1

Process of Data Collection



3.10 Data Analysis Method

The analysis of data defines an essential part of any research work. This enables the examination of collected data, the testing of hypotheses, and the formulation of conclusions (Karl, 2024). The analysis of data was conducted using IBM SPSS Version 27.0 software. The data was checked and cleaned first before analysed to detect and eliminate missing values, out of range values and outliers. This research employed descriptive and inferential statistical methods for the analysis. Descriptive statistic was used to assess socio-demographic data, knowledge, and attitudes among UNIMAS undergraduate nursing students and inferential statistic was employed to examine the statistical correlation of the variables.

To assess if the data is normally distributed or not, normal distribution test was done. For normal distribution test, the sample size of this study is ≥ 50 . So, the Kolmogorov-Smirnov test was chosen to evaluate the normality of continuous data in this study. A p-value exceeding 0.05 implies that the data is considered to exhibit a normal distribution. Meanwhile, a p-value that is below 0.05 indicates the data is not normally distributed (Mishra et al., 2019).

In descriptive statistic, the categorical data was displayed in a form of frequency (n) or percentage (%) and presented in table or illustrated using a bar chart or pie chart. For continuous data, mean (*M*) and standard deviation (*SD*) was reported if the data is normally distributed. If the data shows otherwise, it was reported in median (*Mdn*) and interquartile range (*IQR*). (Habibzadeh, 2017). In inferential statistic, parametric tests like Pearson correlation will be applied when data from both variables indicate a normal distribution. If the data from one of the variables or both not normally distributed, non-parametric test like Spearman correlation are applied (Mishra et al., 2019). In this study, the relationship between level of knowledge of obesity and attitude toward obese people among UNIMAS undergraduate nursing students examined using Spearman correlation due to normality test for one of the variables which is knowledge of obesity data was not normally distributed.

3.11 Summary

This research study used quantitative and cross-sectional design, and it was performed within the FMHS at UNIMAS. This study involved undergraduate nursing students from year 1 to year 4 at UNIMAS. The application of simple random sampling was conducted and calculated using Taro Yamane Formula (1973). The total of 16 participants were involved in the pilot study, while the actual study included 163 participants. The study instrument comprises four sections, and the self-administered questionnaires were disseminated to the participants. Ethical approval was obtained before starting of any data collection. Pilot study was done precede actual study. Finally, the data collected in this study was analysed utilising IBM SPSS Statistics version 27, employing both descriptive and inferential statistical methods.

CHAPTER 4

RESULT

4.1 Overview

This chapter presents the results obtained from undergraduate nursing students at UNIMAS and all the results were obtained in accordance with the research objectives outlined in the study. Out of the 163 participants who were invited to complete the online questionnaire, all responded, resulting in a final total of 163 (100%) participants. Data cleaning was performed prior to analysis, and no missing values, outliers, or extreme cases were identified. In section 4.2 presents the socio-demographic characteristics of the undergraduate nursing students in UNIMAS. Section 4.3 presents the knowledge regarding obesity among UNIMAS undergraduate nursing students. Section 4.4 presents the attitudes of UNIMAS undergraduate nursing students towards obese people. Section 4.5 presents the normality test of total knowledge score regarding obesity and total attitude score towards obese people among UNIMAS undergraduate nursing students. Section 4.6 presents the relationship between knowledge of obesity and attitude toward obese people among UNIMAS undergraduate nursing students. The last section presents the presents the summary of this chapter.

4.2 Socio-demographic Characteristics of Undergraduate Nursing Students in UNIMAS

4.2.1 Age

There were no outliers or extreme values noted from the box plot for participants' age (Figure 4.2). A Kolmogorov-Smirnov test show that the data were not normally distributed, $D(163) = .162$ $p < .001$. The median age among the participants was 22.0 years old ($IQR = 2$ years old). The maximum age was 26 years old while the minimum age was 19 years old. The range was 7 years old. The mode ages were 21 and 23 years old.

Table 4.1

Descriptive Statistics for Participants' Age (n = 163)

		Statistic
Age	<i>Mdn</i>	22.00
	<i>IQR</i>	2
	Maximum	26
	Minimum	19
	Range	7
	Mode	21 23

Note: *Mdn*: median, *IQR*: interquartile range

Table 4.2

Normality Test for Participants' Age (n = 163)

Kolmogorov-Smirnov ^a			
	Statistic	df	Sig.
Age	.162	163	<.001

a. Lilliefors Significance Correction

Figure 4.1

Histogram of Participants' Age (n = 163)

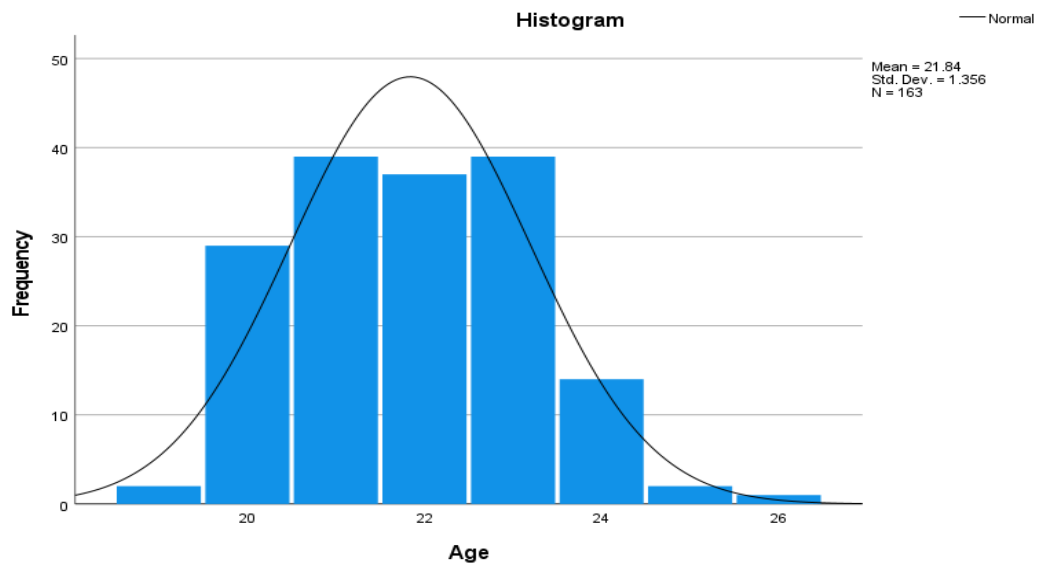
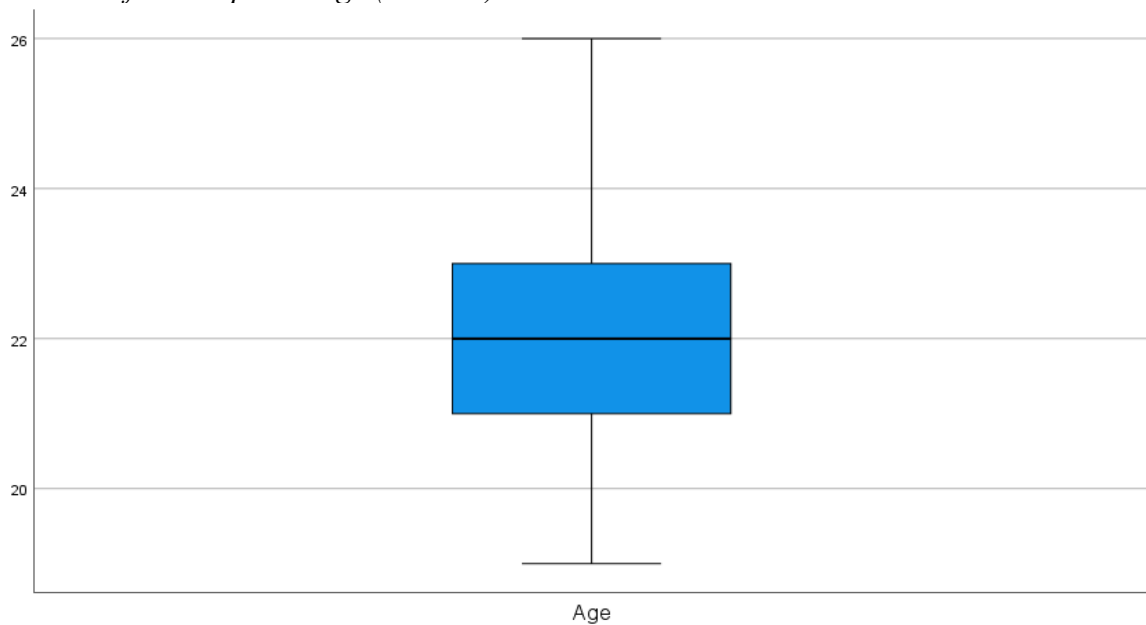


Figure 4.2

Box Plot of Participants' Age (n = 163)



4.2.2 Gender

There were no outliers or extreme values noted from screening the data. As shown in Table 4.3, out of 163 participants, there were 139 (85.3 %) of female participants and 24 (14.7%) of male participants.

Table 4.3

Gender of Participants (n = 163)

Gender	<i>n</i>	%
Male	24	14.7
Female	139	85.3
Total	163	100.0

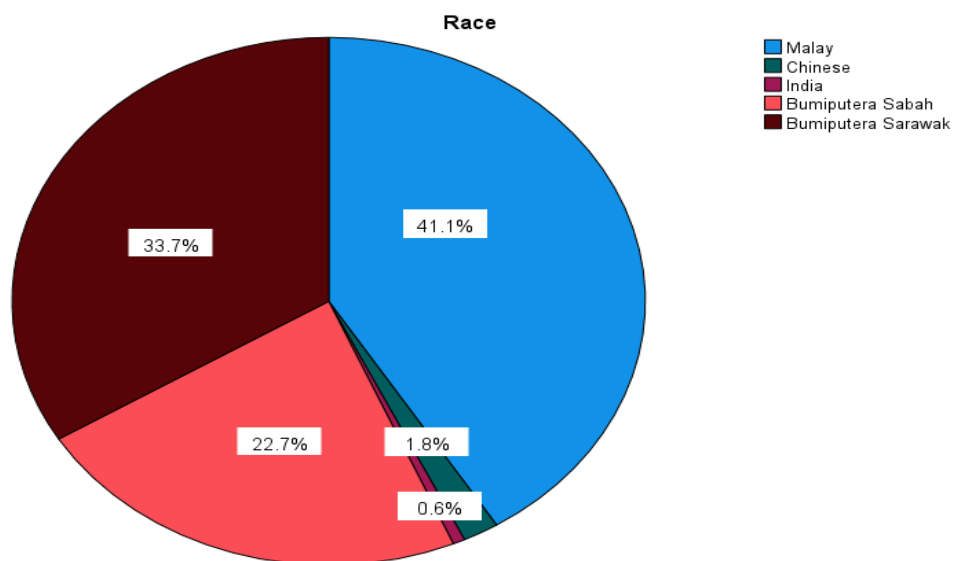
Note: *n*: frequency, %: percentage

4.2.3 Race

Most of the participants were Malay 41.1% (*n* = 67). Followed by Bumiputera Sarawak (*n* = 55, 33.7 %), Bumiputera Sabah (*n* = 37, 22.7 %), 3 (1.8%) participants were Chinese, and 0.6% (*n* = 1) participant was India (Figure 4.3).

Figure 4.3

Race of Participants (n = 163)

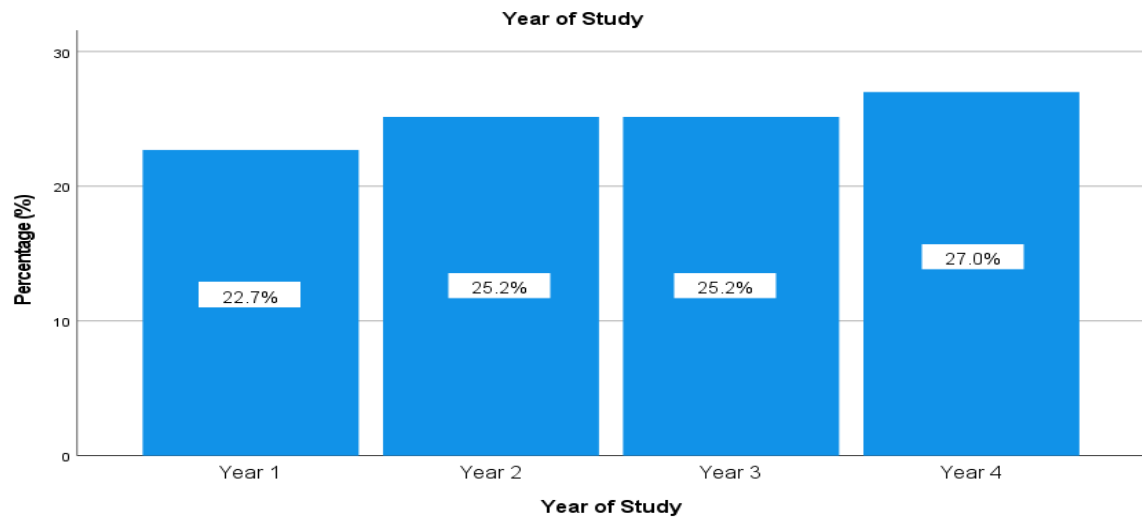


4.2.4 Year of Study

As illustrated in Figure 4.4, most of the participants were from year 4 students 27.0% (*n* = 44), followed by year 2 and year 4 nursing students 25.2 % (*n* = 41). The least was from year 1, which was 22.7% (*n* = 37).

Figure 4.4

Year of Study of Participants (n = 163)

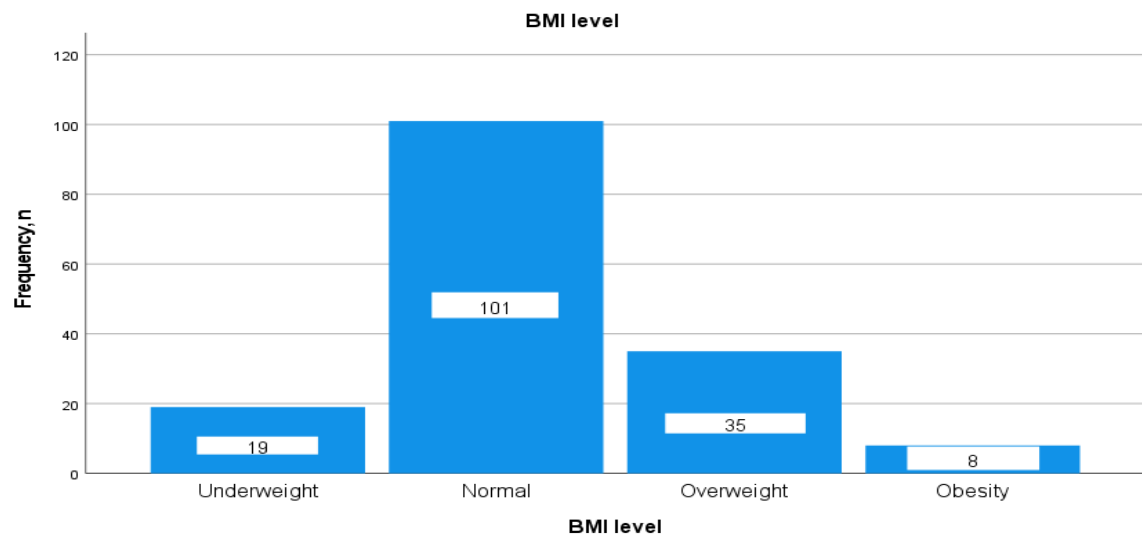


4.2.5 BMI Level

Out of 163 participants, 101 (62.0%) of them were normal, followed by overweight ($n = 35$, 21.5 %), underweight ($n = 19$, 11.7%), and 8 (4.9%) participants were obesity (Figure 4.5).

Figure 4.5

BMI Level of Participants (n = 163)



4.3 Knowledge regarding Obesity among UNIMAS Undergraduate Nursing Students

Table 4.4 and Table 4.5 present the result of the level of knowledge regarding obesity among UNIMAS undergraduate nursing students and their responses. Overall, the result of the level of knowledge was good. The level of knowledge was further divided into three groups using visual binning method which were poor (below 30), average (30-39), and good (40 and above). Visual binning transforms continuous data into categorical data, enabling analysts to more effectively visualise distributions, recognise patterns, and conduct statistical analyses (Amit, 2024). Most respondents scored good level of knowledge about obesity which was 111 respondents (68.1%), followed by an average knowledge level which was 52 respondents (31.9%). There were no respondents who achieved poor level of knowledge on obesity. The average score of the participants was 41.41 points ($SD = 4.153$). Thus, the result for overall level of knowledge regarding obesity was good.

Table 4.4

Level of Knowledge regarding Obesity among UNIMAS Undergraduate Nursing Students (n = 163)

	The Level of Knowledge regarding obesity, n (%)		
	Poor	Average	Good
UNIMAS Undergraduate Nursing Students	0 (0%)	52 (31.9%)	111 (68.1%)

Note: n: frequency, %: percentage

Table 4.5

Response of Level of Knowledge regarding Obesity among UNIMAS Undergraduate Nursing Students (n = 163)

	Strongly disagree		Disagree		Do not know		Agree		Strongly agree	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
1. Obesity is diagnosed using body mass index (BMI).	3	1.8%	9	5.5%	0	0.0%	96	58.9%	55	33.7%
2. An individual with BMI above 30 is considered obese.	1	0.6%	8	4.9%	6	3.7%	90	55.2%	58	35.6%
3. Obesity can be reduced by eating less during meals.	2	1.2%	1 9	11.7%	10	6.1%	10 4	63.8%	28	17.2%
4. Eating more fruits and vegetables can help reduce obesity.	1	0.6%	9	5.5%	14	8.6%	10 4	63.8%	35	21.5%
5. Obesity can increase the cost of health care.	2	1.2%	4	2.5%	6	3.7%	75	46.0%	76	46.6%
6. Doing more exercises daily reduces obesity.	1	0.6%	0	0.0%	0	0.0%	78	47.9%	84	51.5%
7. Obesity is associated with some non-communicable diseases.	1	0.6%	2	1.2%	23	14.1%	85	52.1%	52	31.9%
8. Obesity is a risk factor for some cancers.	2	1.2%	1 0	6.1%	43	26.4%	74	45.4%	34	20.9%
9. Management of obesity involves combining different strategies like drugs, surgery, psychotherapy and behavioural therapy.	1	0.6%	1 3	8.0%	18	11.0%	91	55.8%	40	24.5%

10. Obesity stigma may lead to mental health problems among obese patients.	1	0.6%	2	1.2%	8	4.9%	82	50.3%	70	42.9%
---	---	------	---	------	---	------	----	-------	----	-------

4.4 Attitude towards Obese People among UNIMAS Undergraduate Nursing Students

As shown in Table 4.6 and Table 4.7, the results indicate the attitude towards obese people among UNIMAS undergraduate nursing students and their response. The level of attitude was divided into two which were negative attitude (60 and below) and positive attitude (61 and above). The score was divided by using visual binning method. A score 61 points and above indicated a positive attitude, while a score 60 points and below was regarded as negative. Slightly half of the respondents were reported to have a positive attitude towards obese people ($n = 105$, 64.4%). The mean score of the participants was 64.07 points ($SD = 11.368$). Thus, the result for overall attitude towards obese people was positive.

Table 4.6

Attitude towards Obese People among UNIMAS Undergraduate Nursing Students ($n = 163$)

	The Attitude towards Obese People, n (%)	
	Negative	Positive
UNIMAS Undergraduate Nursing Students	58 (35.6%)	105 (64.4%)

Note: n : frequency, %: percentage

Table 4.7

Response of Attitude towards Obese People among UNIMAS Undergraduate Nursing Students (n = 163)

	I strongly disagree		I moderately disagree		I slightly disagree		I slightly agree		I moderately agree		I strongly agree	
	n	%	n	%	n	%	n	%	n	%	n	%
1. Obese people are as happy as nonobese people.	7	4.3%	15	9.2%	49	30.1%	46	28.2%	39	23.9%	7	4.3%
2. Most obese people feel that they are not as good as other people.	3	1.8%	11	6.7%	19	11.7%	62	38.0%	55	33.7%	13	8.0%
3. Most obese people are more self-conscious than other people.	1	0.6%	9	5.5%	27	16.6%	64	39.3%	41	25.2%	21	12.9%
4. Obese workers cannot be as successful as other workers.	38	23.3%	50	30.7%	44	27.0%	20	12.3%	10	6.1%	1	0.6%
5. Most nonobese people would not want to marry anyone who is obese.	10	6.1%	22	13.5%	49	30.1%	53	32.5%	23	14.1%	6	3.7%
6. Severely obese people are usually untidy.	22	13.5%	21	12.9%	46	28.2%	45	27.6%	25	15.3%	4	2.5%
7. Obese people are usually sociable.	0	0.0%	7	4.3%	33	20.2%	66	40.5%	44	27.0%	13	8.0%
8. Most obese people are not dissatisfied with themselves.	3	1.8%	15	9.2%	45	27.6%	60	36.8%	30	18.4%	10	6.1%

9. Obese people are just as self-confident as other people.	3	1.8%	11	6.7%	54	33.1%	48	29.4%	37	22.7%	10	6.1%
10. Most people feel uncomfortable when they associate with obese people.	18	11.0%	48	29.4%	57	35.0%	26	16.0%	11	6.7%	3	1.8%
11. Obese people are often less aggressive than nonobese people.	9	5.5%	18	11.0%	66	40.5%	54	33.1%	13	8.0%	3	1.8%
12. Most obese people have different personalities than nonobese people.	11	6.7%	23	14.1%	51	31.3%	51	31.3%	22	13.5%	5	3.1%
13. Very few obese people are ashamed of their weight.	12	7.4%	25	15.3%	41	25.2%	42	25.8%	28	17.2%	15	9.2%
14. Most obese people resent normal weight people.	13	8.0%	28	17.2%	50	30.7%	53	32.5%	18	11.0%	1	0.6%
15. Obese people are more emotional than nonobese people.	7	4.3%	18	11.0%	47	28.8%	63	38.7%	20	12.3%	8	4.9%
16. Obese people should not expect to lead normal lives.	39	23.9%	43	26.4%	54	33.1%	18	11.0%	7	4.3%	2	1.2%

17. Obese people are just as healthy as nonobese people.	33	20.2%	54	33.1%	50	30.7%	17	10.4%	5	3.1%	4	2.5%
18. Obese people are just as sexually attractive as nonobese people.	8	4.9%	20	12.3%	52	31.9%	63	38.7%	15	9.2%	5	3.1%
19. Obese people tend to have family problems.	15	9.2%	40	24.5%	65	39.9%	31	19.0%	12	7.4%	0	0.0%
20. One of the worst things that could happen to a person would be for him to become obese.	15	9.2%	17	10.4%	40	24.5%	50	30.7%	33	20.2%	8	4.9%

4.5 Normality Test of Total Knowledge Score regarding Obesity and Total Attitude Score towards Obese People among UNIMAS Undergraduate Nursing Students

4.5.1 Total Knowledge Score regarding Obesity

There were no outliers or extreme values noted from the box plot for total knowledge score (Figure 4.7). A Kolmogorov-Smirnov test showed that the data for total knowledge score were not normally distributed, $D(163) = .092$ $p = .002$. The median score among the participant was 41.00 points ($IQR = 5.00$ points). The maximum score was 50 points while the minimum score was 32 points. The range was 18 points. The mode score was 40 points.

Table 4.8

Descriptive Statistics for Total Knowledge Score regarding Obesity among UNIMAS Undergraduate Nursing Students (n = 163)

		Statistic
Total Knowledge Score regarding Obesity	<i>Mdn</i>	41.00
	<i>IQR</i>	5.00
	Maximum	50.00
	Minimum	32.00
	Range	18.00
	Mode	40.00

Note: *Mdn*: median, *IQR*: interquartile range

Table 4.9

Normality Test for Total Knowledge Score regarding Obesity among UNIMAS Undergraduate Nursing Students (n = 163)

	Kolmogorov-Smirnov ^a		
	Statistic	df	Sig.
Total Knowledge Score regarding Obesity	.092	163	.002

a. Lilliefors Significance Correction

Figure 4.6

Histogram of Total Knowledge Score regarding Obesity among UNIMAS Undergraduate Nursing Students (n = 163)

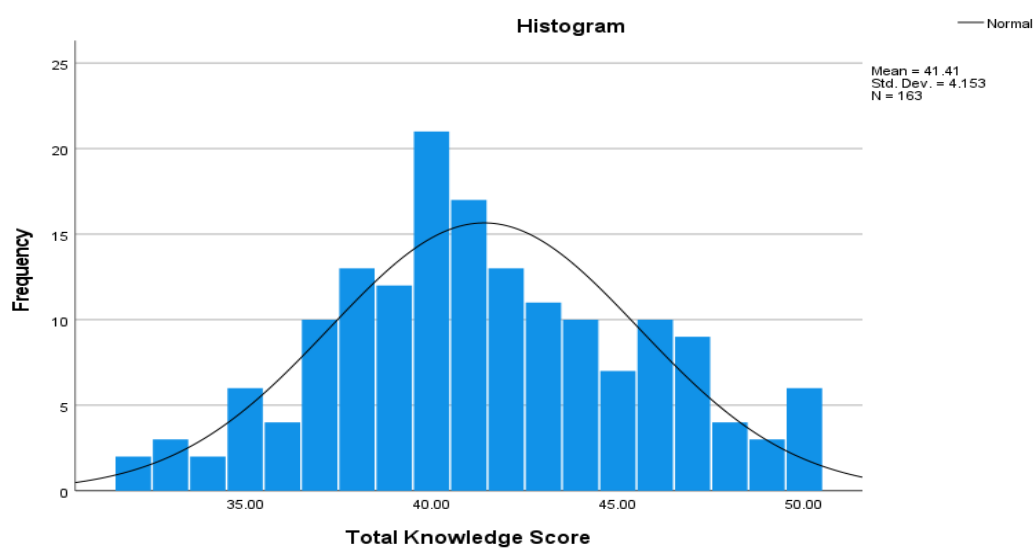
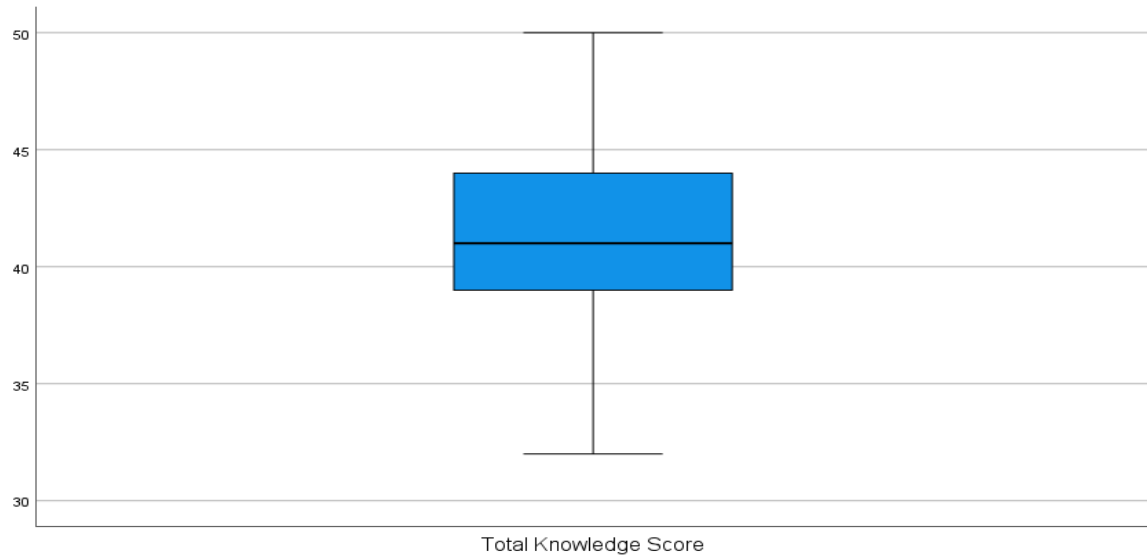


Figure 4.7

Box Plot of Total Knowledge Score regarding Obesity among UNIMAS Undergraduate Nursing Students (n = 163)



4.5.2 Total Attitude Score towards Obese People

There were no outliers or extreme values noted from the box plot for total attitude score (Figure 4.9). A Kolmogorov-Smirnov test showed that the data were normally distributed, $D(163) = .049, p = .200$. The mean score among the participant was 64.07 points ($SD = 11.368$ points). The maximum score was 96 points while the minimum score was 40 points. The range was 56 points. The mode scores were 61.00 and 68.00 points.

Table 4.10

Descriptive Statistics for Total Attitude Score towards Obese People among UNIMAS Undergraduate Nursing Students (n = 163)

		Statistic
Total Attitude Score towards Obese People	<i>M</i>	64.07
	<i>SD</i>	11.368
	Maximum	96.00
	Minimum	40.00
	Range	56.00
	Mode	61.00
		68.00

Note: *M*: mean, *SD*: standard deviation

Table 4.11

Normality Test for Total Attitude Score towards Obese People among UNIMAS Undergraduate Nursing Students (n = 163)

	Kolmogorov-Smirnov ^a		
	Statistic	df	Sig.
Total Attitude Score towards Obese People	.049	163	.200*

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Figure 4.8

Histogram of Total Attitude Score towards Obese People among UNIMAS Undergraduate Nursing Students (n = 163)

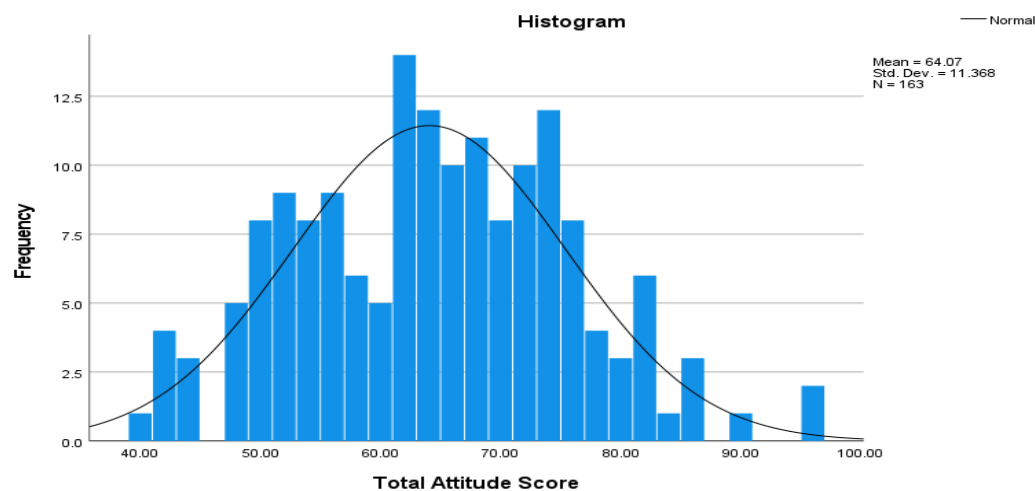
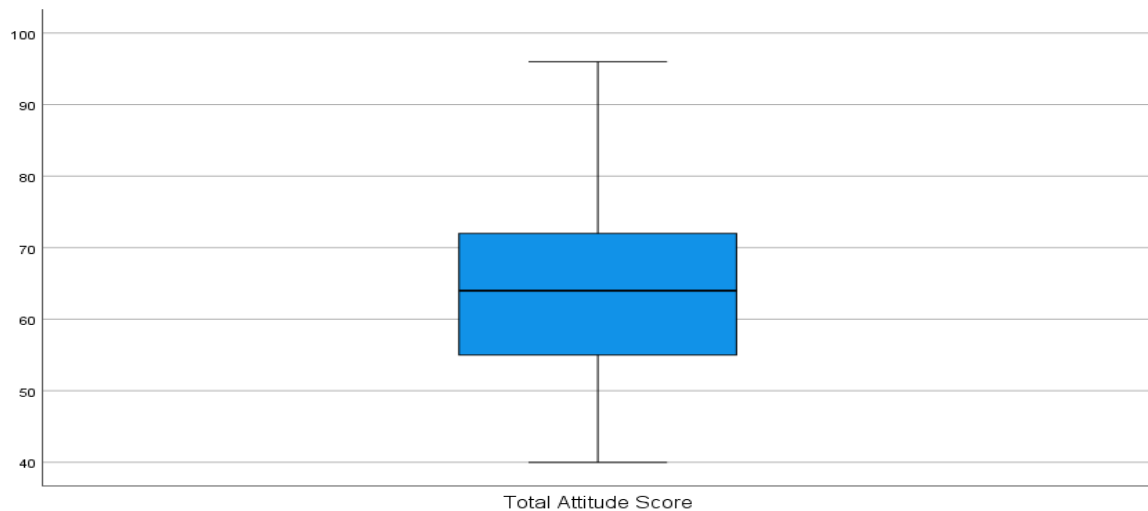


Figure 4.9

Box Plot of Total Attitude Score towards Obese People among UNIMAS Undergraduate Nursing Students (n = 163)



4.6 Relationship between Knowledge of Obesity and Attitude toward Obese People among UNIMAS Undergraduate Nursing Students

The total knowledge score was found out to be not normally distributed and for the total attitude score was normally distributed. Thus, the relationship between knowledge of obesity and attitude towards obese people was investigated using Spearman correlation coefficient (Table 4.12). Preliminary analyses were performed and there was a violation of the assumptions of normality for total knowledge of obesity score, $D(163) = .092$, $p = .002$, but no violation of the assumptions of normality for total attitude score towards obese people, $D(163) = .049$, $p = .200$. There were no outliers and extreme values detected from the box plots. The relationship between knowledge of obesity and attitude towards obese people was investigated using Spearman correlation coefficient. The results indicated that there was no significant correlation between the two variables $r_s(163) = -.014$, $p = .861$. This indicated that variations in participants' total knowledge obesity scores ($Mdn = 41.00$) did not correlate with their total scores regarding attitudes towards obese individuals ($M = 64.07$).

Table 4.12

Correlation Test between Total Knowledge Score regarding Obesity and Total Attitude Score towards Obese People among UNIMAS Undergraduate Nursing Students (n = 163)

			Total Knowledge Score regarding Obesity	Total Attitude Score towards Obese People
Spearman's rho	Total Knowledge Score regarding Obesity	Correlation Coefficient	1.000	-.014
		Sig. (2-tailed)	.	.861
		N	163	163
	Total Attitude Score towards Obese People	Correlation Coefficient	-.014	1.000
		Sig. (2-tailed)	.861	.
		N	163	163

4.7 Summary

In conclusion, the undergraduate nursing students at UNIMAS showed overall good knowledge of obesity, with over than 50% exhibiting positive attitudes towards individuals with obesity. The distribution data for knowledge of obesity was not normally distributed, although the data for attitudes towards obese individuals was normally distributed. Consequently, a non-parametric test, which is the Spearman Correlation Coefficient, was employed to examine the correlation between knowledge of obesity and attitude towards obese people. There was no significant correlation between the two variables. This shows differences in participants' total knowledge obesity scores did not correlate with their total attitude towards obese people scores.

CHAPTER 5

DISCUSSION

5.1 Overview

The main purpose of this study is to assess UNIMAS undergraduate nursing students' knowledge of obesity and their attitudes toward obese individuals and examine the relationship between the variables. Thus, this chapter presents the findings about knowledge regarding obesity in section 5.2 and attitude towards obese people among undergraduate nursing students at UNIMAS in section 5.3, as well as the relationship among these variables in section 5.4. This chapter also presents a summary of the findings in section 5.5, discuss the implications of the study in section 5.6, outline the limitations in section 5.7, and provide a conclusion on section 5.8.

5.2 Knowledge regarding Obesity among UNIMAS Undergraduate Nursing Students

The results of this study indicated that a significant proportion of undergraduate nursing students at UNIMAS exhibited a moderate to high level of knowledge regarding obesity. Approximately 68.1% of the participants exhibited a high level of knowledge. The mean of total knowledge score was 41.41 ($SD=4.153$). These findings were higher compared to a study by Moyo and Felix (2024) on nurses at private healthcare facilities in Oshana, Namibia, which reported 39.0% ($n=97$) showed high levels of knowledge. The mean of the research was 37.85 ($SD=7.96$). The questionnaire in this research study adapted from the study by Moyo and Felix (2024). Regardless of having a same questionnaire, various factors like diversity of participants, influence of external factors, and comprehensive training programs may account for the results in the knowledge assessment. The current study's participants is still a nursing students which they still receive and remember the knowledge

regarding obesity. Meanwhile study by Moyo and Felix (2024), the participants are always busy with the work and may have no practice or further learning regarding knowledge of obesity which may cause no new knowledge received and may forgotten the old knowledge. For the influence of external factors, the current study's sample may also differ in terms of exposure to training, educational resources, or workplace policies related to obesity knowledge. The participants in the current study might have more equivalent education or exposure to obesity-related issue compared to participants in the study by Moyo and Felix (2024), this could directly affect knowledge evaluations. A study showed nurse practitioner students' knowledge scores increased from 52% to 67% after obesity management training (Fruh et al., 2019). There are gaps in the existing training programs and the need for enhanced training and education for nurses on obesity that was highlighted by the researchers. All nurses ought to have access to training opportunities to enhance their comprehension of obesity. (Moyo & Felix, 2024).

However, the result of current study is lower compared to previous study conducted by Azhan et al. (2024). The majority of participants had a good level of overweight and obesity ($n = 316$, 90%) and the mean for total knowledge score is 52.85 ($SD = 4.106$). The items in the current study are almost similar with a study by Azhan et al. (2024) which discusses the level of knowledge and understanding regarding obesity including risk, prevention, and management. Nonetheless, differences in knowledge levels can be attributed to various factors, including total participants and university courses. The total participants from the study by Azhan et al. (2024) is higher which is 351 participants compared to the current study. The sample size is large, which will strengthen outcomes and make the results more generalisable. A large sample size significantly improves the representativeness of the population and minimises the margin of error, thereby resulting in more precise outcomes

(Andrade, 2020; Charlesworth, 2022). Azhan et al. (2024) also perform the study which does not specify only for nursing students in this study, instead the researchers included all health profession courses in this study. The inclusion of participants from various health professions, such as medicine, pharmacy, and public health, has the potential to enhance the diversity and depth of knowledge available. Students from different health backgrounds may exhibit differing levels of exposure to coursework related to obesity, nutrition, and public health, which could lead to an elevated overall knowledge score.

Another study, which was by Gormley and Melby (2020) indicated the result is lower than the current study. Among 211 nursing students from one university in the United Kingdom was participated in this research and 48% had good to very good knowledge regarding obesity risk. This indicates a significant lack of understanding on obesity that may affect the quality of care provided to individuals with obesity, despite the questionnaire focussing solely on obesity risk. The low of total knowledge score may also be attributed to 16% of the sample providing no responses to this scale. This showed that the incomplete data and the sample size became small (Kaur, 2025). The results might misrepresent the actual population. It also affects the accuracy and generalisability of the outcome when the data is incomplete.

In conclusion, there were only a few studies regarding the knowledge of obesity among undergraduate nursing students. Consequently, comparing the results of the current study with others proved challenging due to the limited of references. The study's objective to assess the level of knowledge regarding obesity has been fulfilled.

5.3 Attitude towards Obese People among UNIMAS Undergraduate Nursing Students

This study uncovered of positive attitude towards those who are obese among UNIMAS undergraduate nursing students. More than half of the participants (64.4%) expressed positive attitudes towards the obese people with mean of 64.07 ($SD = 11.368$). A comparable outcome was noted in a study by Darling and Atav (2019), which indicated that the majority of respondents exhibited a more favourable attitude towards individuals with obesity. This finding was derived from a sample of 338 participants, including both graduate and undergraduate nursing students at US northeastern university. Darling and Atav (2019) used the ATOP Scale to which is the same questionnaire in this current study to measure the total attitude towards obese people score. The average attitude towards obese people score for nursing students was mean 68.52 ($SD = 16.57$). Personal factors, such as having friends or family members who are obese, can influence attitudes. Students with such relationships may develop greater empathy and understanding, leading to more positive perceptions of obese individuals (Darling & Atav, 2019). The higher average result might because of difference in educational background. The current study's sample only involved undergraduate students. However, research by Darling and Atav (2019) included both graduate and undergraduate nursing students. The inclusion of graduate nursing students has the potential to increase the level of attitude towards obese people due to graduate nursing students have more clinical experience and empathy. Graduate nursing students gain more clinical experience, which helps them build empathy and break down stereotypes about obesity. For instance, nursing students who engaged in weight sensitivity training and reflective journaling reported increased awareness of weight bias in healthcare settings, leading to more compassionate treatment (Oliver et al., 2020).

There was another research that has higher result of total attitude score than the current study, which was conducted by Gormley and Melby (2020). All students exhibited positive or highly positive attitude towards individuals with obesity and the mean score is 86.1, which is at the higher end of positive range (60.01 to 90 points was counted as positive and highly positive range from 90.01 until 120 points). Gormley and Melby (2020) also used ATOP Scale to measure the attitude score as same as this current study. Sample size and sampling method may contribute to the potential explanation of this finding. The sample size is significantly larger than in the current study. It will improve outcomes and make the findings more applicable. For sampling methods, the study from Gormley and Melby (2020) using convenience sampling method meanwhile this current study was using simple random sampling methods. The random sampling method usually produces a statistically balanced selection of the population that leads to valid generalisations and accurately represents the population, while a convenience sample exhibits a significantly elevated level of bias (Edgar & Manz, 2017).

However, there were some results that were lower than the current study which were by Ahmed et al. (2024) and Yilmaz and Ayhan (2018). Study by Ahmed et al. (2024) showed slightly half percentage of the nursing students (51.16%) were positive towards obese people. Meanwhile, study by Yilmaz and Ayhan had the lower average of the total attitude towards obese individuals than the current study, $M = 59.80$ ($SD = 14.24$), which means the nursing students expressed negative attitude towards obese person. These poorer results may be attributed to a variety of factors, including the less influence and low awareness regarding obesity. The studies' participants may not frequently engage in courses regarding obesity in relation to health care and compassionate patient care. In addition, they might be less exposed to health-related subjects that may enhance awareness of the stigma and

discrimination encountered by individuals with obesity. The combination all of these factors may cause poorer results in attitude towards patients with obesity.

In conclusion, although UNIMAS undergraduate nursing students exhibited a positive attitude score, there remains potential for further enhancement of their attitudes. It is essential for nursing students who are about to graduate and transition into staff nurse. As prospective nurses who will assume significant responsibilities as carers and educators, they will be accountable for administering interventions and ensuring high-quality care for patients when having good level of attitude. Another objective for this research which is to assess the attitude levels of obese individuals has been answered.

5.4 Relationship between Knowledge of Obesity and Attitude towards Obese People among UNIMAS Undergraduate Nursing Students

The result of this study showed that the UNIMAS undergraduate nursing students had a mean overall score of 52.74 ($SD = 5.966$). Attitude towards obese people received the greatest overall mean score of 64.07 followed by knowledge of obesity which was 41.41. In general, UNIMAS undergraduate nursing students showed a good knowledge of obesity and positive attitude towards obese people with a total percentage score of 68.1% for knowledge and 64.4% for attitude. The relationship between those variables was investigated using Spearman correlation coefficient since one of the variables came out to be not normally distributed data. There was no correlation between the variables, as the p -value ($p = .861$) was greater than 0.05. This suggests that knowledge of obesity may not be the one of the factors affecting attitudes towards obese individuals. The positive attitude observed in this study can be attributed to the influence of peers and surrounding. As example, most students in UNIMAS also having colleagues who are obese. Thus, as a friend, they may gain a better

understanding of the issues that people with obesity encounter, becoming more accepting and supportive. Besides, awareness and sensitivity around body positivity and inclusivity also increased in our country, notably among younger generations. Social media campaigns, educational initiatives, and a transformation in norms in society may have facilitated the development of more compassionate and respectful attitudes towards individuals with obesity. Moreover, in some Malaysian cultures, higher body weight is linked to well-being and status, which can reduce stigma and promote more positive attitudes toward obesity, regardless of academic knowledge (Divines, 2024). This finding was supported by studies by Gormley and Melby (2020) among nursing students in a university in UK and DeBarr and Pettit (2016) among health educators in HEDIR which reported that there is no correlation between knowledge of obesity and attitude toward obese people. The similarity of the findings could be attributed to sample size and sampling method. Study by Gormley and Melby (2020) has total of 219 participants and DeBarr and Pettit (2016) only had 93 participants which is small sample like the current studies. However, both of the studies utilised convenience sampling, which is different than the current study Convenience sampling may involve respondents outside the intended population, leading to significant sample bias. In contrast to the current study, the researcher obtained a representative sample from the targeted population, ensuring an equal probability of selection.

There was another finding in contrast with a study conducted by Styk et al. (2022) which reported that there was a strong positive correlation between attitude towards obese people with knowledge of obesity risk score among 306 individuals This finding may be also attributed to the sample size, sampling method and population target. The sample size was bigger than in the current study. Moreover, this research employed a convenience sampling method that might cause the findings more bias, whereas the present study utilised

a simple random sampling technique. Furthermore, the population target for study by Styke et al. (2022) was not focused on nursing staff or students. So, the result of the correlation is not representing the nursing students or staff.

In summary, various factors can be examined to clarify the differences observed in these findings. A good knowledge may not be the sole factor influencing attitude. It was suggested to pursue additional research in this area to achieve more promising outcomes among nursing students in Malaysia, given the limited existing studies on this topic. The aim of this research is to explore the correlation between knowledge about obesity and attitude towards individuals who are obese.

5.5 Summary of the Findings

In summary, a significant majority of the UNIMAS undergraduate nursing students demonstrated good knowledge and positive attitudes. Specifically, 111 respondents (68.1%) exhibited good knowledge regarding obesity, while 105 respondents (64.4%) showed a positive attitude towards individuals with obesity. No significant correlation and association were found among these variables and the socio-demographic data, $r_s(163) = -.014, p = .861$.

5.6 Implications, Recommendations, Future Research

5.6.1 Implications of the Study

This study's findings have significant implications for nursing education and healthcare practice. The findings indicate both good and positive scores regarding knowledge levels and attitudes. This positive outcome can serve as a model for other nursing institutions, encouraging the integration of similar educational strategies. Moreover, this study intends to assist students in deepening their knowledge and understanding of obesity,

thereby fostering a more positive attitude during clinical practice as future nurses and in their everyday lives. Furthermore, it provides a strong foundation for expanding nursing roles in community-based obesity prevention, health promotion, and patient advocacy. Lastly, the findings of this study may serve as a valuable reference for future research regarding the knowledge and attitudes of nursing students in Malaysia and potentially in other countries.

5.6.2 Recommendations for this Study

Based on this research study, it is recommended enhancing health education to improve public knowledge of obesity, including its origins, health implications, and prevention strategies. These attempts should elucidate that obesity is affected by numerous causes, not alone individual choices. Public efforts should prioritise minimising negative attitudes by fostering empathy and understanding towards individuals with obesity. Healthcare professionals must be educated to eliminate bias and provide equitable treatment to all patients. The media needs to show individuals of various body proportions in a good and respectful manner. Policies ought to facilitate healthier lifestyles by enhancing the accessibility of nutritious food and physical activity. Ultimately, further study is necessary to monitor shifts in knowledge and attitudes and to evaluate the success of these initiatives.

5.6.3 Recommendations for Future Research

Future research should consider including nursing students from other universities to increase the generalizability of findings. Other than quantitative research, longitudinal and qualitative research also can be applied for future research. Longitudinal research can monitor and track changes in knowledge and attitudes in a long term, whereas qualitative research like interviews may provide deeper views into underlying perspectives from nursing students. Moreover, future research could assess the influence of targeted educational

programs or clinical exposure on nursing students' knowledge and attitudes. In addition, exploring the sociodemographic characteristics like individual BMI level, cultural attitudes, and education level could explain the influences on students' attitude. Finally, the following research on nursing graduates in clinical practice may determine whether their attitudes change upon entering the workforce and how these attitudes influence the quality of care delivered to obese patients.

5.7 Limitations of the Study

This study reveals several limitations, particularly regarding time limitation. The researcher in this current study is restricted by a tight schedule to conduct this research project, along with other responsibilities within the nursing programme. Besides, the findings of this study may not be generalisable to the entire population of nursing students at UNIMAS, as the sample consists of only 163 out of 234 participants. Moreover, the cross-sectional study limits the applicability of findings in multiple areas because data at a single point in time.

5.8 Conclusion

In conclusion, the UNIMAS undergraduate nursing students possess good knowledge of obesity and express positive attitudes toward obese people. No correlation existed between knowledge, attitude, and other sociodemographic factors. A nurse's knowledge and attitude were essential for maintaining a high standard of care for patients with obesity. Nurses with a deep comprehension are endowed with the requisite skills and knowledge. A positive mindset ensures the application of this knowledge with compassion and empathy, hence maintaining a high standard of care for patients with obesity.

REFERENCE

- Adam, A. M. (2020, June 25). (PDF) *Sample Size Determination in Survey Research*. ResearchGate.
https://www.researchgate.net/publication/342447837_Sample_Size_Determination_in_Survey_Research
- Ahmed, M. M., Ibrahim, R. M., & Younis, N. M. (2024). Assessment of Nursing Students' Attitudes Toward Obese Individuals. *Research Review*, 07(05).
<https://doi.org/10.52845/cmro/2024/7-5-10>
- Allison, D. B., Basile, V. C., & Yuker, H. E. (1991). The measurement of attitudes toward and beliefs about obese persons. *International Journal of Eating Disorders*, 10(5), 599–607.
[https://doi.org/10.1002/1098-108x\(199109\)10:5%3C599::aid-eat2260100512%3E3.0.co;2-#](https://doi.org/10.1002/1098-108x(199109)10:5%3C599::aid-eat2260100512%3E3.0.co;2-#)
- Althubaiti, A. (2022). Sample Size determination: a Practical Guide for Health Researchers. *Journal of General and Family Medicine*, 24(2), 72–78.
<https://doi.org/10.1002/jgf2.600>
- 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.
- Amit, M. (2024, August 10). *Mastering Optimal Binning with Optbinning: A Comprehensive Guide*. Medium. <https://medium.com/@makhija.amit/mastering-optimal-binning-with-optbinning-a-comprehensive-guide-c6cf52572d64>

- Andrade, C. (2020). Sample Size and Its Importance in Research. *Indian Journal of Psychological Medicine*, 42(1), 102–103. NCBI. https://doi.org/10.4103/IJPSYM.IJPSYM_504_19
- Arof, K. Z. M., Ismail, S., & Saleh, A. L. (2018). Contractor's Performance Appraisal System in the Malaysian Construction Industry: Current Practice, Perception and Understanding. *International Journal of Engineering & Technology*, 7(3.9), 46. <https://doi.org/10.14419/ijet.v7i3.9.15272>
- Asenahabi, B. M. (2019). *Basics of research design: A guide to selecting appropriate research design*. ResearchGate. https://www.researchgate.net/publication/342354309_Basics_of_Research_Design_A_Guide_to_selecting_appropriate_research_design
- Azhan, K. N. W. K., Jalil, A. A. A., & Putera, S. S. P. A. S. (2024). Knowledge and attitudes towards and prevalence of overweight and obesity among undergraduate students at Universiti Kuala Lumpur Royal College of Medicine: A cross-sectional study. *Malaysian family physician: the official journal of the Academy of Family Physicians of Malaysia*, 19, 39. <https://doi.org/10.51866/oa.582>
- Bhandari, P. (2020, June 12). *What Is Quantitative research? | definition, Uses and Methods*. Scribbr. <https://www.scribbr.com/methodology/quantitative-research/>
- Biresaw, H., Asfaw, N., & Zewdu, F. (2020). Knowledge and attitude of nurses towards patient safety and its associated factors. *International Journal of Africa Nursing Sciences*, 13(13), 100229. <https://doi.org/10.1016/j.ijans.2020.100229>

Cambridge Dictionary. (2024). *KNOWLEDGE | Meaning in the Cambridge English Dictionary*. Cambridge.org; Cambridge University Press.

<https://dictionary.cambridge.org/dictionary/english/knowledge>

Andrade, C. (2020). Sample Size and Its Importance in Research. *Indian Journal of Psychological Medicine*, 42(1), 102–103. NCBI.

https://doi.org/10.4103/IJPSYM.IJPSYM_504_19 Charlesworth. (2022, May 26).

The Importance of Large Sample Sizes in Research | CW Authors.

Www.cwauthors.com; Charlesworth Author Services.

<https://www.cwauthors.com/article/importance-of-having-large-sample-sizes-for-research>

Cherry, K. (2024, May 5). *The components of attitude*. Verywell Mind.

<https://www.verywellmind.com/attitudes-how-they-form-change-shape-behavior-2795897>

Chunta, K. S. (2020). Healthy lifestyle behaviors in sophomore nursing students: A descriptive correlational study. *Building Healthy Academic Communities Journal*, 4(1), 48. <https://doi.org/10.18061/bhac.v4i1.7170>

Darling, R., & Atav, A. S. (2019). Attitudes Toward Obese People: A Comparative Study of Nursing, Education, and Social Work Students. *Journal of Professional Nursing*, 35(2), 138–146. <https://doi.org/10.1016/j.profnurs.2018.07.009>

Das, S., Mitra, K., & Mandal, M. (2016). Sample size calculation: Basic principles. *Indian Journal of Anaesthesia*, 60(9), 652. <https://doi.org/10.4103/0019-5049.190621>

- DeBarr, K., & Pettit, M. (2016). Weight Matters: Health Educators' Knowledge of Obesity and Attitudes Toward People Who Are Obese. *American Journal of Health Education*, 47(6), 365–372. <https://doi.org/10.1080/19325037.2016.1219282>
- Divines, S. (2024, September 30). Cultural Perspectives on Morbid Obesity: Stigma and Support. Omicsonline.org. <https://www.omicsonline.org/open-access/cultural-perspectives-on-morbid-obesity-stigma-and-support.pdf>
- Edgar, T. W., & Manz, D. O. (2017). *Convenience Sampling - an Overview* | ScienceDirect Topics. Sciencedirect. <https://www.sciencedirect.com/topics/computer-science/convenience-sampling>
- Elsafi, S., Al-Dossari, R., Al-shaqi, R., Fakirah, W., Al-Dossari, R., Al-sharif, O., Maawadh, R. M., Al Musallam, L., Alaohali, A., Abu Hassan, A., Alfahad, O., Al Naam, Y., & Al Zahrani, E. (2024). Obesity-Related Knowledge and Practice Among the Healthcare Professions Students in Saudi Arabia. *Diabetes, Metabolic Syndrome and Obesity*, 17, 427–434. <https://doi.org/10.2147/dms0.s445385>
- Faiswal Kasirye, Math Kreyas, & Norashikin Wahid. (2020). Factors Influencing Obesity among Malaysian Young Adults in Kuala Lumpur. *Asian Journal of Research in Education and Social Sciences*, 2(2), 54–71. <https://myjms.mohe.gov.my/index.php/ajress/article/view/9662>
- Fruh, S. M., Golden, A., Graves, R. J., Minchew, L. A., Platt, T. H., Hall, H. R., Williams, S. G., Mehari, K., Sims, B. M., Hauff, C., & Cheese, C. (2019). Competency in obesity management. *Journal of the American Association of Nurse Practitioners*, 31(12), 734–740. <https://doi.org/10.1097/jxx.0000000000000218>

- Ginsburg, B. M., & Sheer, A. J. (2022). *Destigmatizing Obesity And Overcoming Inherent Barriers To Obtain Improved Patient Engagement*. PubMed; StatPearls Publishing. <https://www.ncbi.nlm.nih.gov/books/NBK578197/>
- Gormley, N., & Melby, V. (2020). Nursing students' attitudes towards obese people, knowledge of obesity risk, and self-disclosure of own health behaviours: An exploratory survey. *Nurse Education Today*, 84, 104232. <https://doi.org/10.1016/j.nedt.2019.104232>
- Habibzadeh, F. (2017). Statistical Data Editing in Scientific Articles. *Journal of Korean Medical Science*, 32(7), 1072–1076. <https://doi.org/10.3346/jkms.2017.32.7.1072>
- Hayes, A. (2023, December 17). *Simple Random Sampling: 6 Basic Steps With Examples*. Investopedia. <https://www.investopedia.com/terms/s/simple-random-sample.asp>
- Heale, R., & Twycross, A. (2015). Validity and Reliability in Quantitative Studies. *Evidence Based Nursing*, 18(3), 66–67. <https://doi.org/10.1136/eb-2015-102129>
- Howard, M. (2016). *Introduction to Cronbach's Alpha*. Dr. Matt C. Howard; Dr. Matt C. Howard. <https://mattchoward.com/introduction-to-cronbachs-alpha/>
- In, J. (2017). Introduction of a Pilot Study. *Korean Journal of Anesthesiology*, 70(6), 601–605.
- Karl, T. (2024, March 29). *The Power of Data Analysis in Research*. New Horizons. <https://www.newhorizons.com/resources/blog/Data-Analysis-for-Research>
- Kaur, T. (2025, January 5). *The Impact of Missing Data on Statistical Analysis and How to Fix It*. Medium. <https://medium.com/@tarangds/the-impact-of-missing-data-on-statistical-analysis-and-how-to-fix-it-3498ad084bfe>

- Khazhymurat, A., Paiyzkhan, M., Khriyenko, S., Seilova, S., Baisanova, S., Kuntuganova, A., Almazan, J. U., & Cruz, J. P. (2023). Health education competence: An investigation of the health education knowledge, skills and attitudes of nurses in Kazakhstan. *Nurse Education in Practice*, 68, 103586. <https://doi.org/10.1016/j.nepr.2023.103586>
- Latkin, C. A., Edwards, C., Davey-Rothwell, M. A., & Tobin, K. E. (2017). The Relationship between Social Desirability Bias and self-reports of health, Substance use, and Social Network Factors among Urban Substance Users in Baltimore, Maryland. *Addictive Behaviors*, 73(1), 133–136. <https://doi.org/10.1016/j.addbeh.2017.05.005>
- Leung, L. (2015). Validity, reliability, and generalizability in qualitative research. *Journal of Family Medicine and Primary Care*, 4(3), 324–327. <https://doi.org/10.4103/2249-4863.161306>
- Lowe, N. K. (2019). What is a pilot study? *Journal of Obstetric, Gynecologic & Neonatal Nursing*, 48(2), 117–118. <https://doi.org/10.1016/j.jogn.2019.01.005>
- Mallory-Kani, A. (2022, September 27). *Research methodologies: Research instruments*. Paperpile. <https://paperpile.libguides.com/c.php?g=1235589&p=9041188>
- Ming, S. Y. H. & M. F. (2024, March 4). *LETTER | Let's talk obesity and cancer*. Malaysiakini. <https://www.malaysiakini.com/letters/698084>
- Mishra, P., Pandey, C. K., Singh, U., Gupta, A., Sahu, C., & Keshri, A. (2019). Descriptive statistics and normality tests for statistical data. *Annals of Cardiac Anaesthesia*, 22(1), 67–72. https://doi.org/10.4103/aca.aca_157_18

- Mohd-Sidik, S., Lekhraj, R., & Foo, C. N. (2021). Prevalence, Associated Factors and Psychological Determinants of Obesity among Adults in Selangor, Malaysia. *International Journal of Environmental Research and Public Health*, 18(3), 868. <https://doi.org/10.3390/ijerph18030868>
- Nikolopoulou, K. (2022). *What is purposive sampling? | definition & examples*. Scribbr. <https://www.scribbr.com/methodology/purposive-sampling/>
- Noor, S., Omid Tajik, & Jawad Golzar. (2022, December 16). *Simple Random Sampling*. ResearchGate; unknown. https://www.researchgate.net/publication/366390022_Simple_Random_Sampling
- Olawuyi, Y. O., & Sadiq, I., O. (2022). KNOWLEDGE, ATTITUDE AND PRACTICE TOWARDS RISKS OF OVERWEIGHT AND OBESITY AMONG ADOLESCENTS IN PRIVATE SECONDARY SCHOOLS IN IBADAN, NIGERIA. *Advance Journal of Current Research*, 7(11). <https://aspjournals.org/ajcr/index.php/ajcr/article/download/18/17/29>
- Oliver, T. L., Shenkman, R., Diewald, L. K., & Dowdell, E. B. (2020). Nursing students' perspectives on observed weight bias in healthcare settings: A qualitative study. *Nursing Forum*, 56(1). <https://doi.org/10.1111/nuf.12522>
- Ozaydin, T., & Kaya Tuncbeden, M. M. (2022). An investigation of the prejudice and stigmatization levels of nursing students towards obese individuals. *Archives of Psychiatric Nursing*, 40, 109–114. <https://doi.org/10.1016/j.apnu.2022.06.002>

- Rincón Uribe, F. A., Godinho, R. C. de S., Machado, M. A. S., Oliveira, K. R. da S. G., Neira Espejo, C. A., de Sousa, N. C. V., de Sousa, L. L., Barbalho, M. V. M., Piani, P. P. F., & Pedroso, J. da S. (2021). Health knowledge, health behaviors and attitudes during pandemic emergencies: A systematic review. *PLOS ONE*, 16(9), e0256731. <https://doi.org/10.1371/journal.pone.0256731>
- Rodríguez-Gázquez, M. L. A., Ruiz-Iglesias, A., & González-López, J. R. (2020). Changes in anti-fat attitudes among undergraduate nursing students. *Nurse Education Today*, 95, 104584. <https://doi.org/10.1016/j.nedt.2020.104584>
- Segal, Y., & Gunturu, S. (2024, May 2). *Psychological Issues Associated With Obesity*. PubMed; StatPearls Publishing. <https://www.ncbi.nlm.nih.gov/books/NBK603747/>
- Sheer, A. J., & Lo, M. C. (2023, February 9). *Counseling Patients with Obesity*. PubMed; StatPearls Publishing. <https://www.ncbi.nlm.nih.gov/books/NBK589679/>
- Shkur, D. A., & Shakor, S. Q. (2023). NURSE'S KNOWLEDGE REGARDING RISK FACTORS OF OBESITY IN SULAIMANI CITY HOSPITALS. *Eurasian Journal of Science and Engineering*, 9(3). <https://doi.org/10.23918/eajse.v9i3p08>
- 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). <https://doi.org/10.1038/s41598-024-54904-1>

- Styk, W., Wojtowicz, E., & Zmorzynski, S. (2022). Reliable Knowledge about Obesity Risk, Rather Than Personality, Is Associated with Positive Beliefs towards Obese People: Investigating Attitudes and Beliefs about Obesity, and Validating the Polish Versions of ATOP, BAOP and ORK-10 Scales. *International Journal of Environmental Research and Public Health*, 19(22), 14977. <https://doi.org/10.3390/ijerph192214977>
- Surucu, L., & Maslakci, A. (2020). Validity and Reliability in Quantitative Research. *Business & Management Studies: An International Journal*, 8(3), 2694–2726.
- Tao, Y., Viberg, O., Baker, R. S., & Kizilcec, R. F. (2024). Cultural bias and cultural alignment of large language models. *PNAS Nexus*, 3(9). <https://doi.org/10.1093/pnasnexus/pgae346>
- Thomas, L. (2023, December 18). *An introduction to simple random sampling*. Scribbr. <https://www.scribbr.com/methodology/simple-random-sampling/>
- Thomas, L. (2020, May 8). *Cross-Sectional Study | Definitions, Uses & Examples*. Scribbr. <https://www.scribbr.com/methodology/cross-sectional-study/>
- Tiryag, A., & Atiyah, H. (2021). Nurses' Knowledge toward Obesity in Al-Basra City. *Annals of the Romanian Society for Cell Biology*, 25(5), 4667–4673. <https://faculty.uobasrah.edu.iq/uploads/publications/1636741585.pdf>
- Tiwari, A., & Balasundaram, P. (2023). *Public Health Considerations Regarding Obesity*. PubMed; StatPearls Publishing. <https://www.ncbi.nlm.nih.gov/books/NBK572122/>
- Turner, D. P. (2020). Sampling Methods in Research Design. *Headache: The Journal of Head and Face Pain*, 60(1), 8–12. Wiley. <https://doi.org/10.1111/head.13707>

- Van Den Dungen, D. (2021, August 1). *The Royal Children's Hospital*. Wwww.rch.org.au.
https://www.rch.org.au/uploadedFiles/Main/Content/nursing-education/Scope%20of%20Practice_July2021.pdf
- Wang, X., & Cheng, Z. (2020). Cross-sectional studies: Strengths, weaknesses, and Recommendations. *Chest*, 158(1), 65–71. Pubmed.
<https://doi.org/10.1016/j.chest.2020.03.012>
- Westbury, S., Oyeboode, O., van Rens, T., & Barber, T. M. (2023). Obesity Stigma: Causes, Consequences, and Potential Solutions. *Current Obesity Reports*, 12(1), 10–23.
<https://doi.org/10.1007/s13679-023-00495-3>
- Whitehead, A. L., Julious, S. A., Cooper, C. L., & Campbell, M. J. (2015). Estimating the sample size for a pilot randomised trial to minimise the overall trial sample size for the external pilot and main trial for a continuous outcome variable. *Statistical Methods in Medical Research*, 25(3), 1057–1073.
<https://doi.org/10.1177/0962280215588241>
- WHO. (2021). *Ensuring Ethical Standards and Procedures for Research with Human Beings*. World Health Organization. <https://www.who.int/activities/ensuring-ethical-standards-and-procedures-for-research-with-human-beings>
- World Health Organization. (2024, March 1). *Obesity and overweight*. World Health Organization; World Health Organization. <https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight>

Yilmaz, H. Ö., & Ayhan, N. Y. (2018). Attitudes and Behaviors of Nursing Students towards Obese Individuals. *ACTA SCIENTIFIC MEDICAL SCIENCES*, 2(6), 3–9.
https://www.researchgate.net/publication/326836020_Attitudes_and_Behaviors_of_Nursing_Students_towards_Obese_Individuals?enrichId=rgreq-47c136d9d3c5285d47345e644b10e29b-XXX&enrichSource=Y292ZXJQYWdlOzMyNjgzNjAyMDtBUzo2NTY1MjIwNDg3MjA4OTZAMTUzMzUzODQ2MjA0Mw%3D%3D&el=1_x_3&_esc=publicationCoverPdf

APPENDICES

Appendix A: Ethical Approval

Pejabat Akademik
Fakulti Perubatan dan Sains Kesihatan
Academic Office
Faculty of Medicine & Health Sciences
☎: 581000 samb 7768
📠: 665152

UNIVERSITI MALAYSIA
SARAWAK
94300 Kota Samarahan

MEMORANDUM

Reference : UNIMAS/NC-21.05/03-03 Jld. 8(149)

To : Muhammad Zikril Hakim Bin Ahmad Fuad (78276)
Bachelor of Nursing with Honours
Faculty of Medicine and Health Sciences

From : Dean
Faculty of Medicine and Health Sciences

Date : 05 March 2025

Subject : **Final Year Project - Research Approval: Knowledge of obesity and attitude towards obese people among Universiti Malaysia Sarawak (UNIMAS) undergraduate nursing students.**

The above matter is referred.

The Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak (UNIMAS) has granted the **RESEARCH APPROVAL** for this Final Year Project research based on the appraisal by the Department of Nursing, Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak (UNIMAS) on 24 February 2025. The Final Year Project research details stated below:

Student Name : **Muhammad Zikril Hakim Bin Ahmad Fuad**

Student ID : **78276**

Programme : **Bachelor of Nursing with Honours**

Research Title : ***Knowledge of obesity and attitude towards obese people among Universiti Malaysia Sarawak (UNIMAS) undergraduate nursing students.***

Supervisor Name : **Mr Md Fadlisham bin Samsuddin**

All records and data are to be kept strictly **CONFIDENTIAL** and can only be used for the purpose of this study. All precautions are to be taken to maintain data confidentiality. Permission from the all relevant heads of departments/units where the study will be carried out must be obtained prior to the study.

Please note that the approval is valid from **February 2025** to **November 2025** only. The reference number for this letter must be stated in all correspondence related to this study to facilitate the process.

Thank you with regards and well wishes.

Yours sincerely,

A handwritten signature in black ink, appearing to be 'Asri bin Said', written in a cursive style.

Professor Dr. Asri bin Said
Dean

c.c : Deputy Dean of Undergraduate
: Head of Nursing Department
: Bachelor of Nursing with Honours
: MDJ4653 Final Year Project 1 Course Coordinator

Appendix B: Cover Letter for Ethical Application

Muhammad Zikril Hakim Bin Ahmad Fuad,

Faculty Medicine and Health Sciences,
Universiti Malaysia Sarawak,
94300 Kota Samarahan,
Sarawak.

The Chairman,

Medical Research Ethics Committee,
Faculty Medicine and Health Sciences,
Universiti Malaysia Sarawak,
94300 Kota Samarahan,
Sarawak.

15th December 2024

Professor/Associate Professor/Dr/Sir/Madam,

REQUEST FOR APPROVAL TO CONDUCT RESEARCH PROJECT

I am a final-year student pursuing a Bachelor of Nursing with Honours at the Faculty of Medicine and Health Sciences, UNIMAS. I enrolled in MDJ 4653 Final Year Project I, in which the course is coordinated by Madam Shalin Lee Wan Fei. Please find my details as follows:

Full name: Muhammad Zikril Hakim Bin Ahmad Fuad

Matrix number: 78276

IC No.: 020414-05-0277

I would like to request for the kind approval from the Faculty of Medicine and Health Sciences Medical Research Ethics Committee to conduct the following study:

Research title: Knowledge of Obesity and Attitude towards Obese People among Universiti Malaysia Sarawak (UNIMAS) Undergraduate Nursing Students

Supervisor's name: Mr. Md Fadlisham Bin Samsuddin

Supervisor's email address: smfadlisham@unimas.my

Supervisor's HP number: +60 12-984 5452

Please find the required documents as appended for your kind consideration and approval.

Thank you.

Thank you.

Yours sincerely,

Muhammad Zikril Hakim

(Muhammad Zikril Hakim Bin Ahmad Fuad)

Final Year Nursing Student,

Universiti Malaysia Sarawak.

Appendix C: Participant Information Sheet (PIS) (English)



PARTICIPANT INFORMATION SHEET/ *MAKLUMAT KAJIAN PESERTA*

1. Title of the study/ Tajuk kajian : **KNOWLEDGE OF OBESITY AND ATTITUDE TOWARDS OBESE PEOPLE AMONG UNIVERSITI MALAYSIA SARAWAK (UNIMAS) UNDERGRADUATE NURSING STUDENTS/ PENGETAHUAN OBESITI DAN SIKAP TERHADAP ORANG OBES DALAM KALANGAN PELAJAR SARJANA MUDA UNIVERSITI MALAYSIA SARAWAK (UNIMAS)**
2. Main Researcher/ Penyelidik utama : **MUHAMMAD ZIKRIL HAKIM BIN AHMAD FUAD**
3. Supervisor/ Penyelia :
a) Course coordinator: Feryante Rintika ak Belansai
b) Main research supervisor: Md Fadlisham bin Samsuddin
4. Institution/ Institut :
Department of Nursing
Faculty of Medicine & Health Science
Universiti Malaysia Sarawak
5. Name of sponsor/ Nama Penaja : **No external funding/ Tiada penaja luar**

PARTICIPANT INFORMATION SHEET AND INFORMED CONSENT FORM

(for adult subjects)

6. Introduction:

It is important that you understand why the research is being done and what it will involve. Please take your time to read through and consider this information carefully before you decide if you are willing to participate. Ask the study staff if anything is unclear or if you would like more information. After you are properly satisfied that you understand this study, and that you wish to participate, you must sign this informed consent form.

Your participation in this study is voluntary. You do not have to be in this study if you do not want to. You may also refuse to answer any questions you do not want to answer. If you volunteer to be in this study, you may withdraw from it at any time. If you withdraw, any data collected from you up to your withdrawal will still be used for the study. Your refusal to participate or withdrawal will not affect any medical or health benefits to which you are otherwise entitled.

This study has been approved by the Medical Research and Ethics Committee, Ministry of Health Malaysia.

7. What is the purpose of the study?

The purpose of this study is to assess the knowledge of obesity and attitude towards obese people among UNIMAS Undergraduate nursing students. This research is necessary to improve the understanding of UNIMAS undergraduate nursing students regarding obesity and their attitude towards obese people. This study also aims to examine the relationship between knowledge about obesity and attitudes toward individuals who are obese. It aims to understand how awareness and understanding of obesity's causes and effects influence people's perceptions, biases, and behaviors. By identifying these connections, the study seeks to inform strategies to reduce stigma, promote empathy, and foster a more inclusive and supportive society for individuals of all body types. This research will be conducted for duration of 8 month (from 03/10/2024 until 31/05/2025). The expected number of participants is 163 individuals.

8. Who can participate in this study?

The inclusion and exclusion criteria have been meticulously defined to delineate eligible participants in this study that targets undergraduate nursing students. The inclusion criteria include UNIMAS undergraduate nursing students from year 1 to year 4 and UNIMAS undergraduate students who are willing to participate. Furthermore, eligible participants must be able to communicate effectively in either English or Malay and have access to the Internet and WhatsApp on their smartphone. In contrast, exclusion criteria are implemented to exclude individuals who may have confounding factors or conditions that could potentially affect the outcome of the study. This includes participants from the pilot study and postgraduate nursing students at UNIMAS. Additionally, post-registration UNIMAS undergraduate nursing students are subject to exclusionary criteria due to their distinct educational backgrounds. The study's precision, validity, and relevance to the

targeted research objectives are collectively guaranteed by these criteria, which collectively strive to establish a homogeneous participant group.

9. What are my responsibilities when taking part in this study?

It is important that you answer all of the questions asked by the study researcher honestly and completely, which will take about 30 minutes of your time. This study will also access your medical information for the following information like height, weight, and Body Mass Index (BMI). You will be given an online google form which has overall 35 questions to be answered. This form contains 3 sections which will enquire about socio-demographic, knowledge of obesity and attitude towards obese people.

10. What are the potential risks and side effects of being in this study?

Participation in this study will have no effect on you, and the associated risk is minimal. Participants have the option to refrain from responding to any questions that may cause discomfort.

11. What are the benefits of being in this study?

There may or may not be any benefits to you. Participating in this study can provide benefits such as increased knowledge about obesity and a better understanding of its complex causes, which may help challenge existing biases and improve healthcare quality. It also offers the opportunity to contribute to research that could inform policies and interventions aimed at reducing stigma and discrimination. Additionally, participants may gain insights into their own attitudes, fostering empathy and personal growth.

12. Who is funding the research?

This study does not receive any external funding, is fully sponsored by the main study researcher. You will not be paid for participating in this study. There are also no plans to develop commercial products through this study.

13. Will my information be kept private?

All your information obtained in this study will be kept and handled in a confidential manner, in accordance with applicable laws and/or regulations. All gathered data will be carefully stored in a password-protected system to ensure the confidentiality. Access will be limited to individuals who have been granted authorisation for research purposes exclusively. The retention of data will occur throughout the study and will continue after completion for the purposes of analysis, validation, or potential future research, adhering to ethical guidelines as applicable. When publishing or presenting the study results, your identity will not be revealed without your expressed consent. At the end of the retention period or when no longer needed, all data will be securely destroyed via permanently deleted from storage devices. In the future, where there may be a requirement for

additional storage or utilisation of the gathered specimens or data, individuals maintain the right to decline, thereby upholding their autonomy and privacy. Individuals involved in this study, qualified monitors and auditors, and governmental or regulatory authorities may inspect the study data, where appropriate and necessary.

14. Who should I call if I have questions?

If you have any questions about the study or if you think you have a study related injury and you want information about this study, please contact the study researcher, Muhammad Zikril Hakim Bin Ahmad Fuad at telephone number 01131727310 or supervisor of this study, Md Fadlisham Samsuddin, who can reach through the email address: smfadlisham@unimas.my

If you have any questions about your rights as a participant in this study, please contact: The Secretary, Medical Research and Ethics Committee, Ministry of Health Malaysia, at telephone number 03-3362 8407/8205/8888.

Appendix D: Informed Consent

INFORMED CONSENT FORM

Title of Study: **KNOWLEDGE OF OBESITY AND ATTITUDE TOWARDS OBESE PEOPLE AMONG UNIVERSITI MALAYSIA SARAWAK (UNIMAS) UNDERGRADUATE NURSING STUDENTS**

By signing below, I confirm the following:

- I have been given oral and written information for the above study and have read and understood the information given.
- I have had sufficient time to consider participation in the study and have had the opportunity to ask questions and all my questions have been answered satisfactorily.
- I understand that my participation is voluntary, and I can at any time freely withdraw from the study without giving a reason and this will in no way affect my future treatment. I am not taking part in any other research study at this time. I understand the risks and benefits, and I freely give my informed consent to participate under the conditions stated. I understand that I must follow the study doctor's (investigator's) instructions related to my participation in the study.
- I understand that study staff, qualified monitors and auditors, the sponsor or its affiliates, and governmental or regulatory authorities, have direct access to my medical record in order to make sure that the study is conducted correctly, and the data are recorded correctly. All personal details will be treated as **STRICTLY CONFIDENTIAL**
- I will receive a copy of this subject information/informed consent form signed and dated to bring home.
- I agree/disagree* for my family doctor to be informed of my participation in this study. (**delete which is not applicable*)

Subject:

Signature:

I/C number:

Name:

Date:

Investigator conducting informed consent:

Signature:

I/C number:

Name:

Date:

Impartial witness:

Signature:

I/C number:

Name:

Date:

Appendix E: Questionnaire / Semi-Structured Questions

Section A: Socio-demographic.

Please complete the following information.

Fill in the information required. Kindly tick (✓) in the box corresponding to the selection.

1. Age:

2. Gender:

☐ Male

☐ Female

3. Race:

☐ Malay

☐ Chinese

☐ India

☐ Bumiputera Sarawak

☐ Bumiputera Sabah

4. Year of study:

☐ Year 1

☐ Year 2

☐ Year 3

☐ Year 4

5. BMI level:

- ☐ Underweight
- ☐ Normal
- ☐ Overweight
- ☐ Obesity

*Calculate the BMI using <https://www.calculator.net/bmi-calculator.html>

Section B: Knowledge of Obesity.

Instruction: Please tick your answer (✓) in the box provided.

No	Statement regarding knowledge	Strongly disagree	Disagree	Do not know	Agree	Strongly agree
1.	Obesity is diagnosed using body mass index (BMI).					
2.	An individual with BMI above 30 is considered obese.					
3.	Obesity can be reduced by eating less during meals.					
4.	Eating more fruit and vegetables can help reduce obesity.					
5.	Obesity can increase the cost of health care.					
6.	Doing more exercises daily reduces obesity.					
7.	Obesity is associated with some non-communicable diseases					
8.	Obesity is a risk factor for some cancers					
9.	Management of obesity involves combining different strategies like drugs, surgery, psychotherapy and behavioural therapy.					
10.	Obesity stigma may lead to mental health problems among obese patients.					

Section C: Attitude Towards Obese Persons (ATOP) Scale.

Instruction: Please mark each statement below in the left margin, according to how much you agree or disagree with it. Please do not leave any blanks. Use the numbers on the following scale to indicate your response. Be sure to place a minus or plus sign (- or +) beside the number that you choose to show whether you agree or disagree.

-3	-2	-1	+1	+2	+3
I strongly disagree	I moderately disagree	I slightly disagree	I slightly agree	I moderately agree	I strongly agree

1. _____ Obese people are as happy as nonobese people.
2. _____ Most obese people feel that they are not as good as other people.
3. _____ Most obese people are more self-conscious than other people.
4. _____ Obese workers cannot be as successful as other workers.
5. _____ Most nonobese people would not want to marry anyone who is obese.
6. _____ Severely obese people are usually untidy.
7. _____ Obese people are usually sociable.
8. _____ Most obese people are not dissatisfied with themselves.
9. _____ Obese people are just as self-confident as other people.
10. _____ Most people feel uncomfortable when they associate with obese people.

11. _____ Obese people are often less aggressive than nonobese people.
12. _____ Most obese people have different personalities than nonobese people.
13. _____ Very few obese people are ashamed of their weight.
14. _____ Most obese people resent normal weight people.
15. _____ Obese people are more emotional than nonobese people.
16. _____ Obese people should not expect to lead normal lives.
17. _____ Obese people are just as healthy as nonobese people.
18. _____ Obese people are just as sexually attractive as nonobese people.
19. _____ Obese people tend to have family problems.
20. _____ One of the worst things that could happen to a person would be for him to become obese.

Appendix F: Permission Obtained from Original Author to Use Questionnaire

i. Knowledge of Obesity:

Permission to use questionnaire for Research for an Undergraduate Nursing Programme



You
To moyoperseverance@gmail.com

11 Nov

...



Greetings Miss Perseverance Moyo .

Kindly allow me to introduce myself. My name is Muhammad Zikril Hakim Bin Ahmad Fuad, a year 4 nursing students Sarawak Malaysia University. I need to conduct research with the title of Knowledge of Obesity and Attitude towards Obese People among UNIMAS Nursing students.

I came across your article titled 'Nurses' obesity knowledge, attitudes and practice in private facilities in Oshana, Namibia'. As per discussion with my supervisor, we would like to seek permission to use your questionnaire for this research which you could send your questionnaire.

All ethical and consideration will be followed as per university requirement. Your kind consideration is much appreciated.

Thank you and regards.

Sincerely,

Muhammad Zikril Hakim

(Muhammad Zikril Hakim Bin Ahmad Fuad)
Nursing student
Universiti Malaysia Sarawak



Perseverance Moyo
To You

12 Nov

...



Good day Muhammad Zikri Hakim Bin Ahmad Fuad.
Yes, go ahead and use the questionnaire.
Good luck with your studies

Kind regards
Perseverance Moyo

...

ii. Attitude towards Obese Persons (Scale) Scale

Permissiom to use questionnaire for Research for an Undergraduate Nursing Programme



You
To allison@iu.edu

11 Nov

...



Greetings Professor David B. Allison .

Kindly allow me to introduce myself. My name is Muhammad Zikril Hakim Bin Ahmad Fuad, a year 4 nursing students Sarawak Malaysia University. I need to conduct research with the title of Knowledge of Obesity and Attitude towards Obese People among UNIMAS Nursing students.

I came across your article titled 'The Measurement of Attitudes Toward and Beliefs About Obese Persons'. As per discussion with my supervisor, we would like to seek permission to read and ask your questionnaire for this research which you could send your questionnaire.

All ethical and consideration will be followed as per university requirement. Your kind consideration is much appreciated.

Thank you and regards.

Sincerely,

Muhammad Zikril Hakim

(Muhammad Zikril Hakim Bin Ahmad Fuad)
Nursing student
Universiti Malaysia Sarawak



Allison, David B
To You, Oarhe, Omoikhefe Ihinosen and Otten, Justin

11 Nov

...



Dear Muhammad Zikril Hakim Bin Ahmad Fuad,

Thank you for your interest in my work.

Efe Oarhe, cc'd here, can help you.

Best Wishes,

David

...

Appendix G: Gantt Chart

ACTIVITY	MONTH								
	2024			2025					
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
Determination of research title									
Literature Review									
Meeting with supervisor									
Submit proposal defense slides									
Ethical approval									
Submission of first draft									
FYP 1: Submission of research proposal									
Data collection									
Data analysis									
FYP poster presentation									
Writing up report									
Submit final draft									
FYP 2: Submission of final project									

Appendix H: Budget

Budget			
Project title	KNOWLEDGE OF OBESITY AND ATTITUDE TOWARDS OBESE PEOPLE AMONG UNIVERSITI MALAYSIA SARAWAK (UNIMAS) UNDERGRADUATE NURSING STUDENTS		
Duration of the project	October 2024 – May 2025		
Items	Unit price (RM)	Quantity	Amount (RM)
Report			
Printing FYP II	0.10/page	116 pages	11.60
Binding	2.00/report	1 report	2.00
Presentation			
Printing poster	39.00/poster	1 poster	39.00
Others			
SPSS software	5.00	1	5.00
Internet data	35.00/month	9 months	315.00
Total amount			372.60

Appendix I: Turnitin Similarity Index Report

Fyp II (Chapter 1-5)_ 78276_Muhammad Zikril Hakim Bin Ahmad Fuad

ORIGINALITY REPORT

15%	12%	8%	5%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	ir.unimas.my Internet Source	2%
2	files.aiscience.org Internet Source	2%
3	Submitted to CSU, San Jose State University Student Paper	1%
4	ir-library.ku.ac.ke Internet Source	1%
5	doi.org Internet Source	1%
6	pmc.ncbi.nlm.nih.gov Internet Source	1%
7	Submitted to Curtin University of Technology Student Paper	<1%
8	Yaiza-María Arvelo-Rodríguez, Cristo-Manuel Marrero-González, Alfonso-Miguel García-Hernández. "Attitudes and Behaviors of Nurses and Nursing Students Toward Patients with Obesity: A Systematized Review", Nursing Reports, 2025 Publication	<1%
9	etd.aau.edu.et Internet Source	<1%
10	María de los Angeles Rodríguez-Gázquez, Ana Ruiz-Iglesias, José Rafael González-López.	<1%

"Changes in anti-fat attitudes among undergraduate nursing students", Nurse Education Today, 2020

Publication

11	Mokemane, Pitso Ernest. "The Evaluation of Nuclear Medicine Radiographers' Perceptions on Role Extension in South Africa.", University of Johannesburg (South Africa)	<1 %
	Publication	
12	hdl.handle.net	<1 %
	Internet Source	
13	www.coursehero.com	<1 %
	Internet Source	
14	Awad Al-Qahtani, Hamza Sundogji. "Attitudes and knowledge of obesity risks among Male high school students in Al-Madinah, Saudi Arabia.", Journal of Applied Pharmaceutical Science, 2016	<1 %
	Publication	
15	www.researchgate.net	<1 %
	Internet Source	
16	Vatrapu, Ravi K.. "Technological Intersubjectivity and Appropriation of Affordances in Computer Supported Collaboration", University of Hawai'i at Manoa	<1 %
	Publication	
17	repository.unam.edu.na	<1 %
	Internet Source	
18	repository.out.ac.tz	<1 %
	Internet Source	
19	www.mdpi.com	<1 %
	Internet Source	
20	Submitted to University of Derby	

	Student Paper	<1 %
21	e-mfp.org Internet Source	<1 %
22	research-information.bris.ac.uk Internet Source	<1 %
23	Submitted to Sunway Education Group Student Paper	<1 %
24	core.ac.uk Internet Source	<1 %
25	meral.edu.mm Internet Source	<1 %
26	assets-eu.researchsquare.com Internet Source	<1 %
27	B. Sundaravadivazhagan, Sekar Mohan, Balakrishnaraja Rengaraju. "Recent Developments in Microbiology, Biotechnology and Pharmaceutical Sciences - International Conference on Recent Development in Microbiology, Biotechnology and Pharmaceutical Science", CRC Press, 2025 Publication	<1 %
28	Kathy DeBarr, Michele Pettit. "Weight Matters: Health Educators' Knowledge of Obesity and Attitudes Toward People Who Are Obese", American Journal of Health Education, 2016 Publication	<1 %
29	Lalit Prasad, Anatoliy Goncharuk, Teddy Fauzi, Hanna Doroshuk, Sri Sundari. "Sustainable Smart Technology Businesses in Global Economies - Proceedings of International Conference on Sustainable Smartech	<1 %

Businesses and SMEs across Global Economies", Routledge, 2025

Publication

30	hrmars.com Internet Source	<1 %
31	www.um.edu.mt Internet Source	<1 %
32	Feister, Katharine . "Exploring the Relationship of Personal Factors with Explicit Attitudes of Licensed Counselors Toward Obese Individuals", Proquest, 2014. Publication	<1 %
33	Submitted to The Independent Institute of Education (IIE) Student Paper	<1 %
34	Yong, Wu. "The Influence of Psychological Capital and Classroom Management on Teachers Well-Being: A Case Study Among English University Teacher in Zhejiang Province, China", University of Malaya (Malaysia), 2023 Publication	<1 %
35	bpace.buid.ac.ae Internet Source	<1 %
36	irbackend.kiu.ac.ug Internet Source	<1 %
37	iris.who.int Internet Source	<1 %
38	www.frontiersin.org Internet Source	<1 %
39	Daniel, Shawanda Pyper. "Healthcare Access and Health Equity Outcomes Among Adults	<1 %

with Cardiometabolic Conditions", Walden
University, 2023

Publication

40	Submitted to Leeds Beckett University Student Paper	<1 %
41	Submitted to Tung Wah College Student Paper	<1 %
42	Submitted to University of Adelaide Student Paper	<1 %
43	arxiv.org Internet Source	<1 %
44	www.jetir.org Internet Source	<1 %
45	Submitted to Northern Consortium UK Student Paper	<1 %
46	Shoatz, Leo-May. "The Relationship between Intercultural Sensitivity and Organizational Culture in Higher Education: A Correlational Study", University of Phoenix, 2021 Publication	<1 %
47	Submitted to Universiti Malaysia Sarawak Student Paper	<1 %
48	Submitted to Victoria University Student Paper	<1 %
49	digitalcollections.ohsu.edu Internet Source	<1 %
50	Submitted to National University of Ireland, Galway Student Paper	<1 %
51	Submitted to University of Sunderland Student Paper	<1 %

archive.org

52	Internet Source	<1 %
53	documentation-service.arm.com Internet Source	<1 %
54	erepo.usiu.ac.ke Internet Source	<1 %
55	nursekey.com Internet Source	<1 %
56	www.theseus.fi Internet Source	<1 %
57	Submitted to The Robert Gordon University Student Paper	<1 %
58	doaj.org Internet Source	<1 %
59	eprints.usm.my Internet Source	<1 %
60	medic.upm.edu.my Internet Source	<1 %
61	sajhrm.co.za Internet Source	<1 %
62	Pinckney-Shaw, Veronica. "The Relationship Between Perceived Racial Microaggression and Job Satisfaction for Black K-12 School Leaders", Grand Canyon University Publication	<1 %
63	bmccardiovascdisord.biomedcentral.com Internet Source	<1 %
64	brage.bibsys.no Internet Source	<1 %
65	onlinelibrary.wiley.com Internet Source	<1 %

66	rdw.rowan.edu Internet Source	<1 %
67	wiredspace.wits.ac.za Internet Source	<1 %
68	www.grafiati.com Internet Source	<1 %
69	www.ncbi.nlm.nih.gov Internet Source	<1 %
70	Isabelle Niedhammer, Sarra Kerrad, Stefanie Schütte, Jean-François Chastang, Cecily C Kelleher. "Material, psychosocial and behavioural factors associated with self-reported health in the Republic of Ireland: cross-sectional results from the SLÁN survey", <i>BMJ Open</i> , 2013 Publication	<1 %
71	Larson-McGuire, Brandon Scott. "Love Your Neighbor as Yourself: The Effects of Training a Core Relational Framing Repertoire on Implicit Bias Against a Minority Religious Group.", <i>The Chicago School of Professional Psychology</i> , 2024 Publication	<1 %
72	Submitted to University of Sydney Student Paper	<1 %
73	archive.udmercy.edu Internet Source	<1 %
74	bmcgeriatr.biomedcentral.com Internet Source	<1 %
75	eprints.qut.edu.au Internet Source	<1 %
76	eprints.utar.edu.my Internet Source	<1 %

		<1 %
77	erepository.uoeld.ac.ke Internet Source	<1 %
78	ijmtst.com Internet Source	<1 %
79	pharmacyeducation.fip.org Internet Source	<1 %
80	researchonline.ljmu.ac.uk Internet Source	<1 %
81	McCardle, Melissa. "Weight bias and social work practice: An empirical exploration", Proquest, 20111004 Publication	<1 %

Exclude quotes	Off	Exclude matches	Off
Exclude bibliography	On		