

DIETARY HABITS AND LIFESTYLE PRACTICES AMONG
NORMAL AND OVERWEIGHT UNDERGRADUATE
STUDENTS IN UNIVERSITI SAINS MALAYSIA, HEALTH
SCIENCES CAMPUS, KUBANG KERIAN

NURUL ALIS FARHANA BINTI MOHD ZUKHI

2024

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NURUL ALIS FARHANA BINTI MOHD ZUKHI

Dissertation submitted in partial fulfilment
of the requirements for the degree
of Bachelor of Health Science (Honours) (Dietetics) 2024
JULY 2024

CERTIFICATE

This is to certify that the dissertation entitled “Dietary Habits And Lifestyle Practices Among Normal And Overweight Undergraduate Students at Universiti Sains Malaysia, Health Sciences Campus (Usm), Kubang Kerian” is the bona fide record of research work done by Ms “Nurul Alis Farhana Binti Mohd Zukhi” during the period from March 2023 to July 2024 under my supervision. I have read this dissertation and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation to be submitted in partial fulfilment for the degree of Bachelor of Health Science (Honours) (Dietetics).



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DECLARATION

I hereby declare that this dissertation is the result of my own investigations, except where otherwise stated and duly acknowledged. I also declare that it has not been previously or concurrently submitted as a whole for any other degrees at Universiti Sains Malaysia or other institutions. I grant Universiti Sains Malaysia the right to use the dissertation for teaching, research and promotional purposes.



Nurul Alis Farhana Binti Mohd Zukhi

Date: 4th July 2024

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TABIAT PEMAKANAN DAN AMALAN GAYA HIDUP DALAM KALANGAN
PELAJAR SARJANA MUDA BIASA DAN BERLEBIHAN BERAT BADAN DI
UNIVERSITI SAINS MALAYSIA, KAMPUS SAINS KESIHATAN, KUBANG KERIAN

ABSTRAK

Tabiat pemakanan dan amalan gaya hidup golongan dewasa muda telah diakui sebagai punca utama masalah berat badan berlebihan, yang dipengaruhi oleh beberapa faktor seperti pilihan peribadi, masyarakat, dan persekitaran. Tabiat pemakanan golongan dewasa muda dicirikan oleh kecenderungan untuk melangkau waktu makan, terutamanya sarapan, kerap mengambil makanan ringan atau minuman, dan percubaan berulang kali untuk berdiet kerana terlalu mengambil berat tentang imej badan dan penampilan (Fauzy, A., et al., 2020). Walaupun permulaan dan perkembangan tabiat pemakanan serta amalan gaya hidup kebanyakannya jelas semasa zaman kanak-kanak, pelajar universiti juga melalui tempoh kritikal di mana perubahan dalam tingkah laku mereka sering menyebabkan pertambahan berat badan (Tok et al., 2018). Objektif utama kajian ini adalah untuk menilai tabiat pemakanan dan amalan gaya hidup di kalangan pelajar sarjana muda yang normal dan berlebihan berat badan di Universiti Sains Malaysia, Kampus Sains Kesihatan (USM), Kubang Kerian. Kajian ini melibatkan 110 pelajar sarjana muda dari Kampus Sains Kesihatan (USM), Kubang Kerian, Kelantan, Malaysia. Satu soal selidik sendiri telah diedarkan secara dalam talian kepada responden terpilih melalui 'Google Forms' yang merangkumi parameter seperti tabiat pemakanan, amalan gaya hidup serta pengetahuan dan pandangan mengenai diet, pemakanan seimbang, dan imej diri. Keputusan menunjukkan bahawa kedua-dua kategori BMI menunjukkan tabiat pemakanan dan amalan gaya hidup yang serupa, tetapi terdapat perbezaan yang ketara dalam pilihan makanan, kekerapan makan, dan tindak balas terhadap tekanan. Menggunakan ujian

'Pearson Chi Square', tiada kaitan yang signifikan ($p > 0.05$) antara beberapa ciri sosiodemografi dan kategori BMI mereka.

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ABSTRACT

Young adults' dietary habits and lifestyle practices have been remarked as the prime cause of being overweight, influenced by several factors such as personal choices, society, and the environment. The dietary habits of young adults are characterized by a tendency to skip meals, especially breakfast, frequent consumption of snack foods or drinks, and repeated attempts at dieting due to preoccupation with body image and appearance. Although the onset and development of dietary habits and lifestyle practices are mostly apparent during childhood, university students also undergo a critical period where changes in their behaviors often result in weight gain. The main objective of this research is to assess the dietary habits and lifestyle practices among normal and overweight undergraduate students at Universiti Sains Malaysia, Health Sciences Campus (USM), Kubang Kerian. This cross-sectional study involved 110 undergraduate students from the Health Sciences Campus (USM), Kubang Kerian, Kelantan, Malaysia. A self-administered questionnaire was distributed online to selected respondents via Google Forms which covered parameters such as dietary habits, lifestyle practices as well as knowledge and perceptions about dieting, balanced nutrition, and self-body image. The results indicated that both BMI categories exhibited similar dietary habits and lifestyle practices, but there were significant differences in their food choices, meal frequency, and responses to stress. Using Pearson's chi-squared test, there was no significant association ($p>0.05$) between gender and their BMI category. The study's findings

provide detailed information about the dietary habits and lifestyle practices among normal and overweight undergraduate students at the Health Sciences Campus.

1.0 INTRODUCTION

1.1 BACKGROUND OF THE STUDY

The National Youth Development Policy (NYDP) of Malaysia define youth as a person aged between 15 to 40 years old. The policy further stipulates that the focus of our country's development programs would only involve individuals aged 18-25 (Country Youth Profile- MALAYSIA Country Youth Profile MALAYSIA, 2019). The 'emerging adults' phase or transition phase from adolescent to adult occurs during the age 18-25 years when most individuals begin to have a life alteration state, becoming independent living or embarking on a higher education level. Individual health-related behavioral patterns established within these transition phases often persist into later life and are firmly linked to influence their dietary habits and lifestyle practices (Poobalan et al., 2014). Although the onset and development of dietary habits and lifestyle practices are mostly apparent during childhood, Universiti students also undergoing a critical period where they have conducive changes in their behaviors that often result in weight gain (Tok et al., 2018).

Young adult's dietary habits and lifestyle practices have been remarked as the prime cause of being overweight, which can be influenced by several factors such as personal, society and environment. The dietary habits of young adults have been categorised as the tendency to skip meals, especially breakfast, frequent consumption of snack foods or drinks, and frequent attempts to practice dieting habits due to preoccupation with body image and appearance. Bad lifestyle practices that were found among young adults include unhealthy nutrition choices, physical inactivity and tobacco use. Poor dietary habits and lifestyle practices are

the major risk factors contributing to overweight/obesity and chronic non-communicable diseases (Fauzy, A., et al., 2020). Furthermore, research from International Medical Universiti of Malaysia on 240 clinical students who were overweight as a result of practicing bad eating habits and lifestyles support that claim that undergraduate students are more likely to engage in unhealthy habit and lifestyle practice while in college (Ganasegeran et al., 2012).

WHO defined overweight and obesity as having a high body-mass index as follows BMI greater than or equal to 25 is considered overweight while a BMI greater than or equal to 30 falls into obesity (WHO), 2021). A global burden of obesity in 2023 stated that 51% (4 billion) of people are living with overweight/obesity and the rate of obesity are particularly rising among children and in lower income countries. Therefore, studying Universiti students' dietary habits and lifestyle habits can help educate them on the importance of preventing the early development of overweight and obesity by practicing a healthy lifestyle. It is important to ensure this study can increase the awareness of healthy lifestyles and dietary habits among young adults, thereby targeting to reduce the risk of chronic disease development.

1.2 PROBLEM STATEMENT

In National Health and Morbidity Survey 2019, 50.1% of the Malaysian adult population reported 40.4 percent overweight and 19.7% obese. World Obesity Atlas 2023 warned that Malaysia will experience a rise in adult and child obesity rates, while the latest data from the World Obesity Federation predicted that 41% of the country's adults will be obese or overweight by 2035 (World Obesity Atlas, 2023). The increasing prevalence of unhealthy lifestyles and physical activity among Universiti students in Malaysia has emerged as a pressing concern. This phenomenon started simultaneously with the new environmental factors as young adults started to adopt different lifestyles, which can decrease the rate of physical activity and lead to overweight and obesity (Peltzer et al., 2014).

Malaysian students are reported to be one of the countries with the highest overweight/obesity rate. A study conducted on overweight among 22 Universiti students in Malaysia found that overweight people, females more prevalent than males (Peltzer et al., 2014). However, recent data from two public universities in Sarawak, Malaysia, based on studies of overweight/obesity among students aged from 18 to 24 years old was contraindicated. The result was differed from the previous study, the age of the male group prominent in the prevalence of obesity and overweight compared to female students. Bachelor's Degree students recorded higher BMI levels than degree students (Fauzy, A., et al., 2020). Generally, Universiti students denote the transition of time experienced by young adults, including adaptation to a new environment and lifestyle (Pitil & Ghazali, 2022). It is common for Universiti students to gain weight during the course of their education.

As they enter Universiti, young adults become responsible for their lifestyle practices and dietary behavior. They are predisposed to negative adjustment in their eating behavior regarding fruit and vegetable consumption, mealtimes and frequency of food intake. Thus, this adjustment impacted their weight and health (Fauzy, A., et al., 2020). The impact of overweight leads to serious health consequences as the body is carrying extra fat, such as cardiovascular disease (mainly heart disease and stroke), type 2 diabetes, musculoskeletal disorders like osteoarthritis, and some cancers (endometrial, breast and colon). Overweight is preventable. Therefore, this study aims to determine the dietary habits and lifestyle practices among undergraduate students at the Universiti Sains Malaysia, Health Sciences Campus, Kubang Kerian. This will eventually bring awareness to the students to practice good dietary habits and healthy lifestyles to prevent non-communicable diseases.

1.3 RESEARCH QUESTION

1. What are the dietary habits among normal and overweight undergraduate students at the Universiti Sains Malaysia, Health Science Campus (USM), Kubang Kerian?
2. What are the lifestyle practices among normal and overweight undergraduate students at the Universiti Sains Malaysia, Health Science Campus (USM), Kubang Kerian?
3. Is there any association between dietary habits and lifestyle practices among normal and overweight undergraduate students at the Universiti Sains Malaysia, Health Science Campus (USM), Kubang Kerian?
4. Is there any association between demographic data and dietary habits among normal and overweight undergraduate students at the Universiti Sains Malaysia, Health Science Campus (USM), Kubang Kerian?
5. Is there any association between demographic data and lifestyle practices among normal and overweight undergraduate students at the Universiti Sains Malaysia, Health Science Campus (USM), Kubang Kerian?

1.4 RESEARCH OBJECTIVES

General Objective

To assess the dietary habits and lifestyle practices among normal and overweight undergraduate students at the Universiti Sains Malaysia, Health Sciences Campus (USM), Kubang Kerian.

Specific Objective

1. To identify the dietary habits among normal and overweight undergraduate students at the Universiti Sains Malaysia, Health Sciences Campus (USM), Kubang Kerian.
2. To identify the lifestyle practices among normal and overweight undergraduate students at the Universiti Sains Malaysia, Health Sciences Campus (USM), Kubang Kerian.
3. To determine the association between dietary habits and lifestyle practices among normal and overweight undergraduate students at the Universiti Sains Malaysia, Health Sciences Campus (USM), Kubang Kerian.
4. To determine the association between demographic data and dietary habits among normal and overweight undergraduate students at the Universiti Sains Malaysia, Health Sciences Campus (USM), Kubang Kerian.
5. To determine the association between demographic data and lifestyle practices among normal and overweight undergraduate students at the Universiti Sains Malaysia, Health Sciences Campus (USM), Kubang Kerian.

1.5 RESEARCH HYPOTHESIS

NULL HYPOTHESIS (H₀): There is no association between dietary habits and lifestyle practices among Undergraduate Students at the Universiti Sains Malaysia, Health Sciences Campus (USM), Kubang Kerian.

ALTERNATIVE HYPOTHESIS (H₁): There is an association between dietary habits and lifestyle practices among Undergraduate Students at the Universiti Sains Malaysia, Health Sciences Campus (USM), Kubang Kerian.

NULL HYPOTHESIS (H₀): There is no association between demographic characteristics and dietary habits among Undergraduate Students at the Universiti Sains Malaysia, Health Sciences Campus (USM), Kubang Kerian.

ALTERNATIVE HYPOTHESIS (H₁): There is an association between demographic characteristics and dietary habits among Undergraduate Students at the Universiti Sains Malaysia, Health Sciences Campus (USM), Kubang Kerian.

NULL HYPOTHESIS (H₀): There is no association between demographic characteristics and lifestyle practices among Undergraduate Students at the Universiti Sains Malaysia, Health Sciences Campus (USM), Kubang Kerian.

ALTERNATIVE HYPOTHESIS (H1): There is an association between demographic characteristics and lifestyle practices among Undergraduate Students at the Universiti Sains Malaysia, Health Sciences Campus (USM), Kubang Kerian

1.6 CONCEPTUAL FRAMEWORK

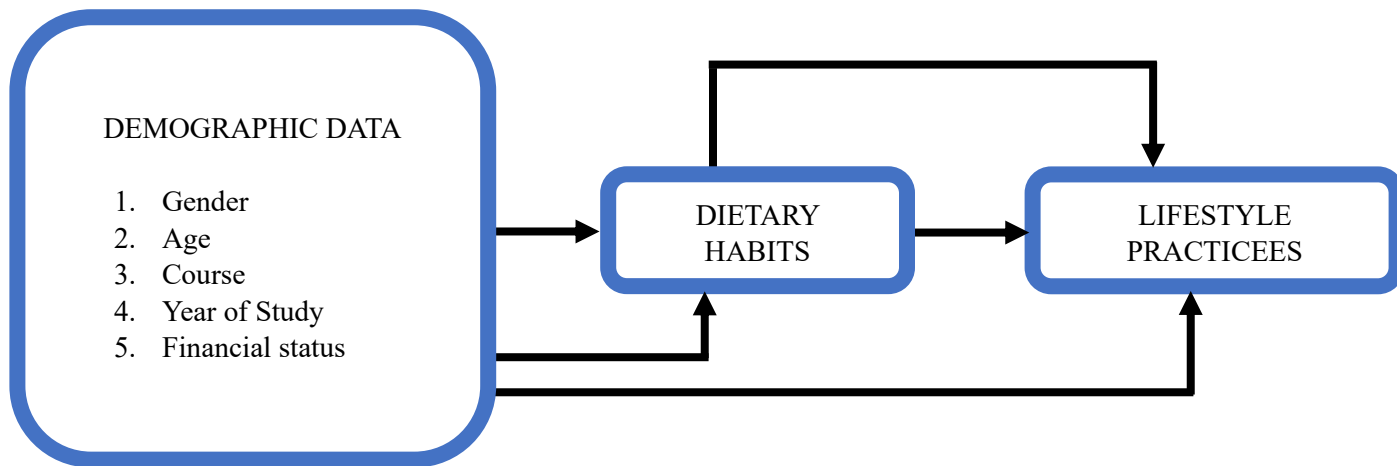


Figure 1: Conceptual Framework

Generally, dietary habits and lifestyle practices can be influenced by several factors, including demographic data. This study's demographic data include gender, age, course, year of study and financial status. Thus, this study aimed to determine the relationship between dietary habits and lifestyle practices among normal and overweight undergraduate students at the Universiti Sains Malaysia, Health Sciences Campus (USM), Kubang Kerian. Then, the association between the demographic data and dietary habits among normal and overweight undergraduate students at the Universiti Sains Malaysia, Health Sciences Campus (USM), Kubang Kerian. Lastly, the association between the demographic data and lifestyles among normal and overweight undergraduate students at the Universiti Sains Malaysia, Health Sciences Campus (USM), Kubang Kerian (Figure 1).

2.0 LITERATURE REVIEW

2.1 Meal Consumption Pattern Among Universiti Students

There is currently, no evidence to conclude the recommended amount of meal consumed per day. It is normal everyday practice that our meal should be divided into three main meals consisting of breakfast, lunch and dinner while the snaking is suggested in between the main meal (Wan Zakaria, 2021). Previous study has shown that daily meal eating enhances human health. A malmo diet and cancer study discovered that eating more than six meals per day reduces the risk of obesity compared to eating less than three meals per day. The study also found that frequent eaters had lower waist circumferences after dieting and lifestyle adjustment. On the contrary, adult who ate less than three times per day appeared to have lower BMI than those who ate three meals daily (Kahleova et al., 2017). Thus, it was concluded that maintaining consistency in eating daily meal and consuming significant amount of energy during breakfast may be effective for preventing long term weight gain (Paoli et al., 2019). As a result, infrequent meal pattern including skipping meals had been seen to increase the rate of obesity. Similarly, a study of students at Universiti of Turkey found that those who practicing meal skipping significantly higher body mass index (BMI) (Omaç Sönmez & Nazik, 2019). Those students who practiced the skipping meal pattern had related to frequently snaking with neglect to take main meal (Wan Zakaria, 2021).

2.2 Physical Activity Pattern Among Undergraduate Students

Physical activity and fitness should remain a top priority in all countries. Sedentary physical activity behavior had become norm in Malaysian society. A study shown that physical activity reduced from high school to college level then again reduction in the physical activity upon graduation (Calestine et al., 2017). A survey study investigated the physical activity index among Malaysian young adult at 21 years old, they were more likely active at that age and when their age become increase than 21 years old, the young adult had decreased their physical activity (Kohl, 2001). The lack of physical activity had led to overweight/obesity and also shortened the life expectancy. Therefore, if we focus on physical activity enhancing, it will produce a better lifestyle (Kohl, 2001).Universiti students have been found to have poor physical activity that lead to poor body mass index value (Hoseini et al., 2022). Physically active individuals found to have better sleep quality and feel energetic during the day, reduce insomnia and improve their academic performance (Kamal et. al., 2014) Regular physical activity can induce rate of disease, improve muscular strength and bone and help in stress and anxiety reduction. Previous study found that, males and females involved in physical activity with different motivation. Male students are more motivated by intrinsic factors such as strength, competition and challenges while female student motivated by extrinsic factor such as weight management and appearance (Egli et al., 2011).

3.0 MATERIALS AND METHODS OR METHODOLOGY

3.1 Research Design

A cross-sectional study will be conducted on normal and overweight undergraduate students Universiti Sains Malaysia, Health Sciences Campus (USM), Kubang Kerian. Participants will be given a self-administered questionnaires via google form in English adapted from a previous study on Dietary Habit and Lifestyle Practices among Normal and Overweight IIUM Kuantan students: A Comparative Study (Fauzy, A., et al., 2020). Then, students will volunteer to participate in the study based on inclusion and exclusion criteria. Furthermore, the data will be gathered concurrently without requiring further follow-up processes of the subjects as in the other longitudinal studies. The best ethical practices will be followed during the study conduct as all participants' confidentiality will be maintained, informed consent will be obtained, the study will adhere to institutional and international guidelines, potential conflicts of interest will be disclosed, and results will be reported honestly and transparently.

3.2 Study Population

Undergraduate Students at the Universiti Sains Malaysia, Health Sciences Campus (USM), Kubang Kerian.

3.3 Subject Criteria

The subject inclusion criteria:

- a) Individuals aged 18 to 25 years old.
- b) Individual who is in normal or overweight category.
- c) Undergraduate students at the Universiti Sains Malaysia, Health Sciences Campus (USM), Kubang Kerian.
- d) Able to write and read in English.
- e) Individual who is willing to participate in the study.

The subject exclusion criteria:

- a) Respondents that are not from Universiti Sains Malaysia, Health Sciences Campus (USM), Kubang Kerian.
- b) Individual who are not in normal or overweight category.

3.4 Sample Size Estimation

One proportion formula is used to determine the approximate sample size for this study:

$$n = \left[\frac{Z}{\Delta} \right]^2 p(1 - p)$$

n = *sample size*

Z = *value representing the desired confidence level*

Δ = *precision/margin of error*

p = *anticipated population proportion*

The value for Δ is 0.05 with the confidence interval 95% and the value of the Z-score will be 1.96. Percentage of overweight between undergraduate students = 42.5% (Fauzy, A., et al. 2020).

Therefore, the proportions will be 0.288.

$$n = \left[\frac{1.96}{0.05} \right]^2 0.425(1 - 0.425)$$

$$n = 376$$

Adjusted sample size:

$n_1 =$ *New adjusted sample size*

$n_0 =$ *Recommended sample size*

$N =$ *Population size*

The total population size was obtained from the academic office with the total of students from School of Health Sciences are 1165 of students. 120 recommended sample size taken from the total population sample from the previous study (Fauzy, A., et al. 2020).

$$n_1 = \frac{n_0}{1 + \frac{(n_0 - 1)}{N}}$$

$$n_1 = \frac{120}{1 + \frac{(120 - 1)}{1165}}$$

$$n_1 = 109$$

Therefore, the new sample size is equal to 109 participants.

3.5 Sampling Method And Subject Recruitment

This study was employed a convenience sampling method, where voluntary participation was recruited from undergraduate Health Sciences Campus students aged between 18 to 25 years old at the Universiti Sains Malaysia, Health Sciences Campus who meet all the inclusion and exclusion criteria. They were given a self-administered questionnaire via Google form to complete on their own.

3.6 Research Tool

Data collection in this study will be based on previously validated questionnaires from 'Dietary Habit and Lifestyle Practices Among Normal and Overweight/Obese IIUM Kuantan Students: A Comparative Study'. The structured self-administered questionnaire in the Google Form consist of 30 multiple-choice questions available in English. The first section of the questionnaire collects sociodemographic information such as age, gender, course, year of study and financial status. Aside from that, the second part in the questionnaire is about self-reported of their height, weight and their Body Mass Index (BMI). Then, the next part was aimed at exploring student's eating habit and lifestyle practices. The last part of the questionnaire was about knowledge and views on dieting, balanced nutrition and self-body image.

3.7 Operational Definition

Snacking: The time interval of food intake between regular meals.

Regular exercise: The time at least 3 to 4 times per week of any physical activities.

Dieting: The food restriction in daily calorie consumption associated with an imbalance in nutrient intake.

Knowledge of food pyramid: An understanding of the main components in the food pyramid consisting of carbohydrates, protein, vitamins, fat and oil as well as the daily recommendation portion.

Lifestyle practice: it refer to behaviors, habits, and choices individuals make daily that affect their overall well-being.

3.8 Data Collection Method

The data collection method was begin after the human research ethics committee approval of the Universiti Sains Malaysia, Health Sciences Campus (USM), Kubang Kerian (USM/JEPeM/KK/24010047). Students from undergraduate health sciences campus will choose to be volunteer to participate in the study.

The information in this study, such as objectives, procedure, benefits, potential risk and their rights and refusal, will be provided before the survey. A signed informed consent form required if they agree to participate. Their signature on the consent form required before answering the questionnaire. Students participating in the study will endure to secure their rights. They were free to leave the study without penalty or losing advantage, but the participation was disqualified.

The participant's demographic data such as age, gender, ethnicity, current study semester and nutrition or dietetics course is collected. The essential parts of the question, including their eating habits and lifestyle practices, personal view on dieting and self-body image and understanding of nutrition balance, will also be included.

Numerical serial numbers such as "1", "2", and "3" were used to code the participants. This study will be conducted anonymously to protect participants' privacy and confidentiality, and the data were only be used for this study. The data were analysed using the Statistical Package for Social Sciences (SPSS) Version 28.0.

3.9 Study Flowchart

The flowchart outlines (Figure 2) shows the structured process of conducting research, beginning by obtained Ethical Approval from the Ethics Committee (JePeM) and following with approval of Research Proposal. The next steps involve informing participants about the research objectives, procedures, and their rights, ensuring transparency and ethical considerations. Researchers then proceed to obtain informed consent from a total of 109 participants, emphasizing the importance of participant understanding. Once consent is secured, the focus shifts to collecting data. After data collection, data analysis were conducted using SPSS (Statistical Package for the Social Sciences). The flowchart continues with the Compilation of Research Findings, where results are organized and prepared for presentation. This leads to the Presentation of Findings. Next, the proposal were submitted for Report Assessment, initiating the evaluation process. If any corrections are needed, it will undertake the Correction of Research Proposal, refining their work based on feedback. The final process concludes with Handing in the Finalized Research Proposal, marking the completion of a thorough and ethically conducted research process. Overall, this flowchart illustrates a systematic approach to research that prioritizes ethical considerations and structured analysis, ensuring the integrity and quality of the research outcomes.

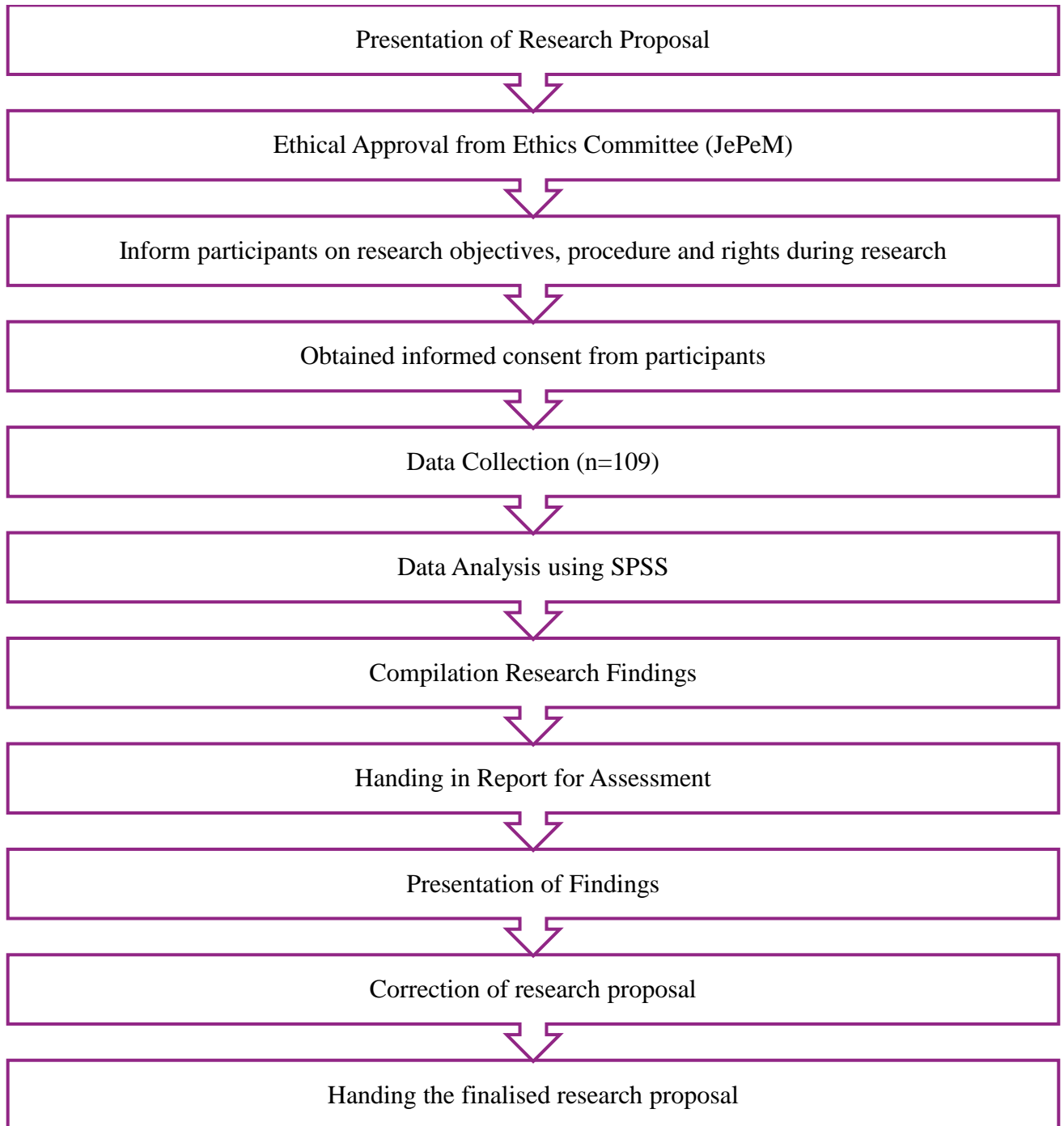


Figure 2: Study Flowchart

4.0 RESULT

4.1 Demographic Characteristics

There was a total of 110 students participated in this study with a distribution of 15 (13.6%) were aged 19-20 years, 29 (53.6%) aged 21-22 years, and 36 (32.7%) aged 23-24 years, with an interquartile range (IQR) of 22.0 years. The participants of 20 (18.2) were male and 90 (81.8%) were female. The participants were from various courses, with the majority of the participants were from Dietetics (38, 34.5%) and then Nutrition (19, 17.3%), Biomedicine (7, 6.4%), Environmental and Occupational Health (9, 8.2%), Nursing (10, 9.1%), Exercise and Sports Science (11, 10.0%), Medical Radiation (4, 3.6%), Speech Pathology (2, 1.8%), Audiology (4, 3.6%), and Forensic Science (6, 5.5%). Regarding their academic year, 24 (21.8%) were in Year 1, 20 (18.2%) in Year 2, 58 (52.7%) in Year 3, and 8 (7.3%) in Year 4. The financial status of the participants was as follows: 26 (23.6%) were funded by JPA, 23 (20.9%) by MARA, 35 (31.8%) by PTPTN, 12 (10.9%) were self-sponsored, and 14 (12.7%) had other sources of funding.

Table 4.1: Gender of participants

Gender	TOTAL, <i>n</i> (%)
Male	20 (18.2)
Female	90 (81.8)

Table 4.1: Course of participants

Course	TOTAL, <i>n</i> (%)
Dietetics	38 (34.5)
Nutrition	19 (17.3)
Biomedicine	7 (6.4)
Environmental and Occupational Health	9 (8.2)
Nursing	10 (9.1)
Exercise and Sports Science	11 (10.0)
Medical Radiation	4 (3.6)
Speech Pathology	2 (1.8)
Audiology	4 (3.6)
Forensic science	6 (5.5)

Table 4.1: Current year study of participants

Year	TOTAL, <i>n</i> (%)
Year 1	24 (21.8)
Year 2	20 (18.2)
Year 3	58 (52.7)
Year 4	8 (7.3)

Table 4.1: Financial status of participants

Financial Status	TOTAL, <i>n</i> (%)
JPA	26 (23.6)
MARA	23 (20.9)
PTPTN	35 (31.8)
Self-sponsored	12 (10.9)
Other	14 (12.7)

Table 4.1: Age of participants

Age	Mean Age (SD)	TOTAL, <i>n</i> (%)
19-20 years old		15 (13.6)
21-22 years old	22.0	29 (53.6)
23-24 years old		36 (32.7)

IQR = Interquartile Range

4.2 BMI Classification And Gender Distribution Of Participants

The BMI category according to World Health Organization (WHO). According to the Table 5, the participants' majority are from normal weight category with a total number of 64 participants. Among these, 53 were female (82.8%) and 11 were male (17.2%). The distribution of BMI categories by gender show that underweight participants (BMI < 18.5) comprised 20 individuals, predominantly female (75%). In the normal weight category (BMI 18.5-24.9), there were 64 participants, with females making up the majority (82.8%). Participants classified as overweight (BMI \geq 25.0) totaled 21, predominantly female (81%). Lastly, obese participants (BMI \geq 30.0) numbered 5, all of whom were female. The $p > 0.05$ indicates there was no significant difference between BMI category and gender.

Table 4.2: BMI status according to the gender among participants

BMI (kg/m ²)	BMI Category	Male N= 20	Female N=90	Total N=110	p-value
<18.5	Underweight	5 (25)	15(75)	20	0.62
18.5-24.9	Normal weight	11(17.2)	53(82.8)	64	
\geq 25.0	Overweight	4(19)	17(81)	21	
\geq 30.0	Obese	0	5(100)	5	