

**THE ASSOCIATION BETWEEN DEPRESSION,
ANXIETY, STRESS AND EATING HABITS WITH BMI
AMONG PPSK STUDENTS IN THE SCHOOL OF
HEALTH SCIENCES, USMKK**

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HEALTH SCIENCES, USMKK**

by

SITI NUR RABIATUL ADAWIYAH BINTI HASHIM

**A thesis submitted in fulfilment of the requirements
for the degree of
Bachelor of Health Science (Honours) (Dietetics)**

July 2024

DECLARATION

I hereby declare that this dissertation is the result of my investigations, except where otherwise stated and duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degrees at Universiti Sains Malaysia or other institutions.

Signature



Siti Nur Rabiatal Adawiyah Binti Hashim

Date: 1 July 2024

CERTIFICATE

This is to certify that the dissertation entitled “THE ASSOCIATION BETWEEN DEPRESSION, ANXIETY, STRESS AND EATING HABITS WITH BMI AMONG PPSK STUDENTS IN THE SCHOOL OF HEALTH SCIENCE, USMKK” during the period from October 2024 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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TABLE OF CONTENTS

DECLARATION.....	3
CERTIFICATE.....	4
ACKNOWLEDGEMENT.....	5
LIST OF TABLES.....	8
LIST OF FIGURES.....	9
LIST OF APPENDICES.....	10
ABSTRAK.....	11
ABSTRACT.....	13
CHAPTER 1.....	15
1.1 Background of the study.....	15
1.2 Problem Statement.....	17
1.3 Research Questions.....	19
1.4 Research Objectives.....	19
1.5 Research Hypothesis.....	20
1.6 Study rationale.....	21
CHAPTER 2.....	24
2.1 Level of Depression, Anxiety and Stress among university students.....	24
2.2 Eating Habits Among University Students.....	26
2.3 Level of Depression, Anxiety, Stress and Eating Habits.....	28
2.4 Conceptual Framework.....	32
CHAPTER 3.....	34
3.1 Research Design.....	34
3.2 Study area.....	34
3.3 Study population.....	35
3.4 Subject criteria.....	35
3.5 Sample size estimation.....	35
3.6 Sampling method and subject requirement.....	36
3.7 Research Tool.....	37
3.7.1 Section A: Socio-Demographic Information.....	37
3.7.2 Section B: Depression, Anxiety and Stress.....	38
3.7.3 Section C: Eating habits.....	39
3.8 Operational Definition.....	39
3.8.1 Depression, Anxiety and Stress.....	39

3.8.2	Eating Habit	40
3.9	Data collection method.....	40
3.10	Study Flowchart.....	42
3.11	Data Analysis.....	43
CHAPTER 4	.....	44
RESULT	.....	44
4.1	Sociodemographic distribution among PPSK students in USMKK.....	44
4.2	Depression, Anxiety and Stress Level of Respondents.....	46
4.2	Eating Habits Pattern Among Respondents	46
4.3	BMI Status Among Respondents	48
4.4	The Association between Levels of Depression, Anxiety, Stress and BMI.....	49
4.5	The Association between Eating Habits and BMI Status	50
CHAPTER 5	.....	53
DISCUSSION	.....	53
5.1	Introduction	53
5.2	Level of Depression, anxiety and stress among PPSK students.....	53
5.3	Eating Habits	55
5.3	BMI	58
5.4	Level of Depression, Anxiety, Stress and BMI Status.....	58
5.5	Eating Habits and BMI Status	60
5.6	Limitation and Strength	61
CHAPTER 6	.....	63
CONCLUSION	.....	63
6.1	Summary of Findings.....	63
6.2	Recommendations	63
REFERENCES	.....	64
APPENDICES	.....	84
APPENDIX A	THE ASSOCIATION BETWEEN DEPRESSION, ANXIETY, STRESS AND EATING HABITS WITH BMI AMONG PPSK STUDENTS IN THE SCHOOL OF HEALTH SCIENCE USMKK QUESTIONNAIRE	84
APPENDIX B	PROOF OF ACCESS TO QUESTIONNAIRES	89
APPENDIX C	RESEARCH QUESTIONNAIRE (GOOGLE FORM)	90
APPENDIX D	INFORMED CONSENT FORM	91
APPENDIX E	JEPeM APPROVAL LETTER	102

LIST OF TABLES

	Page
Table 1 Sociodemographic distribution among PPSK students	45
Table 2 Table of Depression, Anxiety and Stress among Respondents	46
Table 3 Table of Eating Habits Pattern among Respondents.....	47
Table 4 Table of BMI Status among Respondents.....	49
Table 5 Table of Association between Level of Depression, Anxiety, Stress and BMI	49
Table 6 Table of Association between Eating Habits and BMI status	51

LIST OF FIGURES

	Page
Figure 1 Conceptual Framework of The Study.....	32
Figure 2 The Flow of Research Study	42

LIST OF APPENDICES

Appendix A	The Association between Depression, Anxiety, Stress and Eating Habits with BMI Among PPSK Students in The School of Health Science USMKK Questionnaire
Appendix B	Proof of Access To Questionnaire
Appendix C	Research Questionnaire (Google Form)
Appendix D	Informed Consent Form
Appendix E	JEPeM Approval Letter

**HUBUNGAN ANTARA TAHAP KEMURUNGAN, KEBIMBANGAN, TEKINAN DAN
TABIAT PEMAKANAN DENGAN BMI DALAM KALANGAN PELAJAR PPSK DI
USMKK**

ABSTRAK

Depresi, kebimbangan, dan tekanan adalah masalah yang biasa dialami oleh pelajar universiti, yang berpotensi mempengaruhi kesejahteraan keseluruhan dan prestasi akademik mereka. Kajian ini bertujuan untuk menyiasat tahap depresi, kebimbangan, tekanan, tabiat pemakanan, dan BMI di kalangan pelajar PPSK di USMKK serta untuk mengkaji hubungan antara depresi, kebimbangan, tekanan dan BMI, serta antara tabiat pemakanan dan BMI. Reka bentuk kajian potong lintang telah digunakan, melibatkan sampel pelajar PPSK berumur antara 20 hingga 32 tahun. Data dikumpulkan menggunakan Depression, Anxiety, and Stress Scale (DASS-21) untuk menilai tahap depresi dan soal selidik tabiat pemakanan untuk menilai pola pemakanan pelajar. BMI dikira berdasarkan tinggi dan berat badan yang dilaporkan sendiri. Keputusan menunjukkan bahawa daripada 100 responden, 35% mengalami depresi sederhana, 24% mengalami depresi teruk, dan 41% mengalami depresi yang sangat teruk. Berkenaan dengan kebimbangan, 2% responden melaporkan kebimbangan sederhana, 13% melaporkan kebimbangan teruk, dan 85% melaporkan kebimbangan yang sangat teruk. Untuk tahap tekanan, 30% responden mempunyai tekanan sederhana, 38% mempunyai tekanan teruk, dan 24% mempunyai tekanan yang sangat teruk. Tabiat pemakanan keseluruhan pelajar PPSK menunjukkan pola yang tidak sihat: 66% tidak mengambil sarapan, 78% mengambil kurang daripada tiga hidangan sehari, 58% mengambil snek lebih daripada tiga kali seminggu, 62% makan makanan bergoreng lebih daripada dua kali seminggu, dan 62% minum kurang daripada 2 liter air setiap hari. Walaupun tabiat tidak sihat ini, kebanyakan pelajar (47%) mempunyai BMI normal. Tiada hubungan yang signifikan ditemui antara tahap depresi, kebimbangan, tekanan dan status BMI. Begitu juga, tiada hubungan yang signifikan

diperhatikan antara tabiat pemakanan dan BMI. Namun, disyorkan agar lebih banyak kajian dilakukan untuk memberikan pemahaman yang lebih jelas mengenai hubungan ini dan meneroka faktor-faktor lain yang mungkin menyumbang. Intervensi yang mempromosikan kesedaran tentang kesihatan mental, pemeriksaan berkala, dan pengamalan tabiat pemakanan yang lebih sihat adalah disyorkan untuk meningkatkan kesejahteraan pelajar universiti.

THE ASSOCIATION BETWEEN LEVEL OF DEPRESSION, ANXIETY, STRESS AND EATING HABITS WITH BMI AMONG PPSK STUDENTS IN USMKK

ABSTRACT

Depression, anxiety, and stress are prevalent among university students, potentially impacting their overall well-being and academic performance. This study aimed to investigate the levels of depression, anxiety, stress, eating habits, and BMI among PPSK students at USMKK and to examine the associations between depression and BMI, as well as between eating habits and BMI. A cross-sectional study design was employed, involving a sample of PPSK students aged 20 to 32. Data were collected using the Depression, Anxiety, and Stress Scale (DASS-21) to assess the level of depression and an eating habits questionnaire to evaluate the dietary patterns of the students. BMI was calculated based on self-reported height and weight. The results indicated that among the 100 respondents, 35% experienced moderate depression, 24% experienced severe depression, and 41% experienced extremely severe depression. Regarding anxiety, 2% of respondents reported moderate anxiety, 13% reported severe anxiety, and 85% reported extremely severe anxiety. For stress levels, 30% of respondents had moderate stress, 38% had severe stress, and 24% had extremely severe stress. The overall eating habits of PPSK students indicated unhealthy patterns: 66% skipped breakfast, 78% had less than three meals per day, 58% consumed snacks more than three times per week, 62% ate fried food more than twice per week, and 62% drank less than 2 litres of water daily. Despite these unhealthy habits, most students (47%) had a normal BMI. No significant association was found between the level of depression, anxiety, stress and BMI status. Similarly, no significant association was observed between eating habits and BMI. Nonetheless, it is suggested that more studies be carried out to provide a clearer understanding of these relationships and explore other potential contributing factors. Interventions promoting mental health awareness, regular screenings,

and adopting healthier eating practices are recommended to enhance the well-being of university students.

CHAPTER 1 INTRODUCTION

1.1 Background of the study

Major depressive disorder (MDD), also mostly referred to as clinical depression, is a psychiatric condition characterized by a persistent period of at least two weeks marked by pervasive feelings of sadness, low self-worth, and a lack of interest or enjoyment in things that are typically pleasurable. It is identified when an individual consistently feels down or depressed, shows a loss of interest in activities once enjoyed, experiences feelings of guilt or worthlessness, has low energy, struggles with focus, undergoes changes in appetite, exhibits slowed movements or agitation, has trouble sleeping, or harbours suicidal thoughts. Change in an individual's life frequently causes uncertainty, which can lead to rising levels of depression (Malhi & Mann, 2018).

Depression is a significant and critical psychological issue on a global scale due to its high prevalence, chronicity, and the challenges associated with its treatment and recovery (Melo-Carrillo et al., 2012). It has been classified as one of the four prominent diseases in terms of its major effect on individuals, families, and society. Furthermore, depression has been found to be a potential catalyst for additional health problems as it is known to have detrimental impacts on cognitive function and is linked to increased prevalence of dementia, cardiovascular disease, stroke, and diminished quality of life (Joo et al., 2022).

Numerous psychological and psychiatric research conducted in various established and developing countries over recent decades have consistently demonstrated a higher prevalence of stress, anxiety, and depression (SAD) among university students as compared to the general population (Brenneisen Mayer et al., 2016). According to Shamsuddin et al, (2013) in a recent study of the Malaysian student population conducted in four public universities in the Klang Valley, a prevalence rate of 27.5% was observed for moderate depression, while 9.7% exhibited symptoms indicative of severe or extremely severe depression. This elevated incidence of depression among

university students can be attributed to various risk factors, including psychological, academic, biological, lifestyle, social, and financial influences.

Eating habits are characterized as repetitive, deliberate, and collective actions that influence individuals' choices, consumption, and utilization of particular foods or diets in accordance with societal and cultural factors, including stress, sleep deprivation, financial constraints, time constraints, and changes in lifestyle (Sogari et al., 2018). Numerous research has been done to investigate the susceptibility of dietary habits among university students. A study conducted at one of Brunei's universities found that most university students had poor eating habits even though the majority possessed an excellent knowledge of nutrition. It was due to factors including frequent snacking, consumption of high-fat foods, and inadequate daily intake of fruits and vegetables (Tok et al., 2018). This scenario occurs due to individual food perception, peer influence and social norms, and environmental factors such as the availability of cooking resources and facilities, as well as food prices. These factors have been identified as significant determinants of students' eating behavior and dietary intake (Kabir, Miah & Islam, 2018).

In addition, eating habits are regarded as key variables in mental health because some bad eating habits, such as inadequate fruit and vegetable consumption and meal skipping, have been linked to feelings of sadness or hopelessness, suicidal ideation, and suicide attempts (Głąbska et al., 2020). Research has generally indicated that individuals experiencing depression exhibit a tendency to consume a greater quantity of calories, possess a higher Body Mass Index (BMI), and exhibit a lower quality of dietary intake (Flórez et al., 2015)

Multiple factors, including depression, make university students vulnerable to alterations in their eating habits. As they transition to college, young adults reportedly consume an unhealthy diet. This allows individuals to determine their food preferences, which are additionally impacted by socioeconomic status and food accessibility (Merhout & Doyle, 2019). As a result, it is typical for

college students to skip breakfast in favour of fast food. The situation is further exacerbated by academic pressures stemming from projects, competition, and an overwhelming workload. Additional variables such as body dissatisfaction, diminished self-esteem, weight taunting, and thinness pressure (Pengpid & Peltzer, 2020) contribute to the depression levels experienced by college students and further affect their eating habits.

Hence, this present study is proposed to investigate the association between the level of depression, anxiety, stress and eating habits with BMI among Pusat Pengajian Sains Kesihatan (PPSK) students at Universiti Sains Malaysia, USM.

1.2 Problem Statement

University students face a variety of challenges, including independent living, academic stress, peer pressure, and family issues, all of which predispose them to depression. This emotional and mental stress can lead to high-risk behaviours such as increased smoking, increased alcohol and drug intake, and increased self-harm (Mofatteh, 2021). Depression can also have an impact on both their physical and mental health because it has been linked to acute infectious illness, self-destructive ideation, and suicide (Sadath et al., 2023).

More than half of university students report having a high or very high stress and depression level, according to a study on the cardiovascular health of students. According to Barbayannis et al (2022), exams are the main cause of academic stress for many university students. High levels of exam anxiety can also cause a person to postpone or give up on their university education (Yusefzadeh et al., 2019). Additional factors that may contribute to academic stress include work overload, organizational issues, insufficient monitoring during instruction, tense relationships between teachers and students, and unhealthy lifestyle choices. Furthermore, studies have linked high levels of academic stress to decreased well-being, depression, anxiety, altered eating, trouble sleeping, and worse academic performance (Pozos-Radillo et al., 2014).

The establishment of healthy, enduring dietary habits is critical during the lifestyle development phase, which usually takes place between the ages of 18 and 25 when most college students begin living independently for the first time. Poor dietary habits manifest chronic disease factors during this age range (Sogari et al., 2018). University life is a time when students begin a new educational phase of their lives and are given the freedom to make their own eating choices. They are more resilient in terms of food preferences than they have ever been in their early years. As a result, this leads to several health-related problems.

For many years, the general population has believed that health science students have a higher level of understanding of healthy food habits and lifestyles than non-health-science students. This is significant because these students are future physicians, as those who adopt a healthful lifestyle are more likely to positively impact their patients. Based on a study conducted at King Abdulaziz University in Jeddah on the dietary habits of medical students. Even though they are expected to have a broad knowledge of nutrition and good eating, most undergraduate medical students exhibit bad eating habits (Alzahrani et al., 2020). This demonstrates that knowledge alone is insufficient to build good eating habits in a society; it can also be caused by other factors such as psychological factors like depression and stress. For example, as medical students have significant amounts of stress throughout their years of university life, the findings of the same study revealed that many students eat because they are lonely (44.7%), scared (42.1%), or bored (51.1%). The potential impact of stress on behavior might manifest in altered eating patterns, whereby individuals residing in high-stress environments may exhibit increased food consumption as a way of managing their stress levels (Choi, 2020).

There is also a concern that changes in eating patterns linked with long-term depression can put a person at risk for different eating disorders, including bingeing, purging, and restricted eating behavior. Depression and eating disorders frequently coexist and share risk factors such as low self-esteem and unhappiness with one's appearance (Becker et al., 2014). Eating disorders, if left

untreated, can cause major health concerns such as cardiac problems, gastrointestinal problems, neurological problems, and death.

Several studies on the relationship between depression, anxiety, stress and eating habits have been undertaken. Most research has concluded that those with more depressive symptoms are more likely to have poorer dietary intent and choice, less perceived support for healthy eating, and are more likely to develop type 2 diabetes mellitus (Afshin et al., 2019).

Although it is generally acknowledged that depressed people change their lifestyle and eating habits, there is little evidence to suggest that the dietary pattern one follows in one's life changes one's behaviour and contributes to depression (Selvaraj et al., 2022). The primary objective of this study is to enhance understanding of the relationship between eating habits, depression, anxiety and stress among PPSK students. The results of this study will provide valuable insights for students, educators, families, and peers in promoting and sustaining optimal mental health through enhancing dietary habits, ultimately contributing to an enhanced overall quality of life.

1.3 Research Questions

1. What is the level of depression, anxiety and stress of PPSK students in the School of Health Sciences?
2. What is the BMI status among PPSK students in the School of Health Sciences?
3. What is the eating habit pattern among PPSK students in the School of Health Sciences?
4. Is there any association between the level of depression, anxiety, stress and BMI among PPSK students in the School of Health Sciences?
5. Is there any association between eating habits and BMI among PPSK students in the School of Health Sciences?

1.4 Research Objectives

General objective:

To determine the association between the level of depression and eating habits with BMI among PPSK students in Universiti Sains Malaysia (USM)

Specific Objectives:

- i) To assess the level of depression, anxiety and stress among PPSK students in the School of Health Sciences
- ii) To assess the eating habit pattern among PPSK students in the School of Health Sciences.
- iii) To determine the BMI status among PPSK students in the School of Health Sciences.
- iv) To determine the level of depression, anxiety, stress, eating habits and BMI among PPSK students in the School of Health Sciences
- v) To determine the association between the level of depression, anxiety, stress and BMI among PPSK students in the School of Health Sciences
- vi) To determine the association between eating habits and BMI among PPSK students in the School of Health Sciences.

1.5 Research Hypothesis**Hypothesis I :*****Null Hypothesis (H_0)***

There is an association between the level of depression, anxiety, stress and BMI among PPSK students.

Alternative Hypothesis (H_A)

There is no association between the level of depression, anxiety, stress and BMI among PPSK students.

Hypothesis II:

Null hypothesis (H₀)

There is an association between eating habits and BMI among PPSK students.

Alternative Hypothesis (H_A)

There is no association between eating habits and BMI among PPSK students.

1.6 Study rationale

In this research, students of School of Health Sciences in Universiti Sains Malaysia, Kubang Kerian are chosen. PPSK students encompass a diverse range of students from different programs, such as dietetics, nutrition, audiology, biomedicine, medical radiation, forensic science, speech pathology, and nursing.

The period of transition experienced by students as they leave their parental homes and move to university is a crucial phase that significantly impacts their short- and long-term dietary patterns and overall lifestyle choices (Hafiz et al., 2023). Since many of them will be living away from home for the first time, the adjustment entails considerable changes in their eating habits. Previous research has shown that a person's food decisions and intake are affected by several factors, such as their ability to make their food, the cost of food, meeting new people, cooking skills and facilities, nutritional knowledge, and exam stress (Nelson et al., 2008).

Evaluating the eating habits could give an insight into eating patterns and level of depression, anxiety and stress among PPSK students who are currently attending health sciences courses at Universiti Sains Malaysia (USM) in Kubang Kerian, Kelantan. Good eating habits among PPSK students could be an excellent method to promote effective healthy eating. Healthy eating habits contribute to health promotion, disease prevention, improved work performance, and treatment of nutritional-related issues such as eating disorders. Thus, PPSK students represent a

specific group that should be particularly informed about health issues and encourage the adoption of healthy eating habits.

As health science students, they must take responsibility for their health. Students studying in the health education sector of universities must grasp the value of a healthy lifestyle and decide to adopt a conscious living idea as a critical step toward enhanced community health. It is believed that future health professionals who adopt healthy lifestyle patterns can play a beneficial role in 'public health' studies as long as they make this attitude a part of their lives and can sustain goodness.

The intense academic demands placed upon health science students elevate their susceptibility to depression, anxiety, stress and various other mental health disorders. Depression, anxiety, stress and unhealthy eating habits can negatively impact students' academic performance, leading to reduced motivation, poor concentration, and impaired decision-making abilities. These issues can also affect their future careers in healthcare, where mental well-being and healthy lifestyle choices are essential for providing quality patient care. A cohort study conducted on graduate health science students revealed varying degrees of depression and anxiety, which were observed to be influenced by the students' chosen majors and their duration in the program (Rizzolo, 2020). The findings of their research indicate that graduate students in the field of health science are more prone to experiencing depression, which in turn increases the probability of developing concurrent symptoms of depression or anxiety. The elevated levels of stress seen in health science graduate programs have the potential to impact students' academic performance and subsequent careers as clinicians. The potential impacts on the future clinical practices of health science students are evident in the observed decline in empathy toward clients and the increased turnover rates within practice settings (Ayed & Amoudi, 2020).

This study has the potential to address depression, anxiety, stress and unhealthy eating patterns among health science students and can contribute to their overall well-being, enabling them to thrive academically, personally, and professionally. By identifying the association between

depression, anxiety, stress and eating habits, researchers and healthcare professionals can design targeted interventions to address both mental health and dietary patterns. These interventions may include counselling, mindfulness techniques, nutrition education, and stress management strategies.

CHAPTER 2 LITERATURE REVIEW

2.1 Level of Depression, Anxiety and Stress among university students

People who suffer from depression often have emotions of sadness and a lack of interest in things that they used to like. A decline in a person's capacity to function, as well as a cascade of other mental and physical problems, can result from depression (Malhi & Mann, 2018). The phenomenon exerts an influence on an individual's emotional state, cognitive processes, and behavioral responses. Given the complexity of the educational process that health science students must go through, a study revealed an apparently high incidence of depressive disorders among health sciences students (Yusoff, 2013).

A cross-sectional study was conducted by (Nahas et al., 2019) to explore the prevalence of depressive disorder, as well as the associated sociodemographic factors among health sciences students. The study was done among 425 students from 5 different schools of health sciences which are the School of Medicine, Pharmacy, Dentistry, Nursing, and Allied Health Sciences at the International Islamic University Malaysia (IIUM) health campus, using the Patient Health Questionnaire-9 (PHQ-9). The findings of this study, shows that there are significant differences between the level of depression and sociodemographic factors, including gender and the origin of the students. In this study, females had higher rates of severe levels of depression than males. Prior research has documented a greater prevalence of depression in females, which can be attributed to factors such as heightened sensitivity to interpersonal connections and changes in hormones (Albert, 2015). A study by NidaNaz & Zehra. (2019) also found high levels of anxiety and depressive symptoms were found in female students as compared to male students. However, these findings do not correspond with another study that shows no significant differences between the level of depression and gender. The study which was conducted among 260 respondents from a public