# ASSOCIATION BETWEEN ANXIETY, DEPRESSION, AND STRESS AND QUALITY OF LIFE AMONG UNDERGRADUATE STUDENTS AT THE SCHOOL OF HEALTH SCIENCES, UNIVERSITI SAINS MALAYSIA

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**2026**

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**by**

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**Dissertation submitted in partial fulfilment of the requirements**
**for the degree of**
**Bachelor in Nursing**

**August 2026**

## ACKNOWLEDGEMENT

First and foremost, I would like to express my utmost gratitude to Allah SWT for granting me the strength, good health, and opportunity to embark on and complete this research journey.

I am sincerely grateful to my supervisor, Dr. Salmi binti Ab Aziz, for her invaluable guidance, patience, and unwavering support. Her profound knowledge, constructive feedback, and continuous encouragement have greatly enhanced my understanding and capabilities. The insightful comments and thoughtful suggestions were instrumental in shaping and refining this thesis. I consider myself truly fortunate to have had the opportunity to learn under her mentorship.

I would also like to extend my heartfelt appreciation to all the students from the School of Health Sciences, Universiti Sains Malaysia (USM) who participated in this study. This research would not have been possible without their cooperation, time, and willingness to contribute.

I am also grateful to my parents, Adek Awang bin Seman and Cik NorHaslida binti Che Haron, who stood by me with words of encouragement, moral support, and shared challenges. Their presence helped me stay positive and motivated, especially during difficult moments. To everyone who supported me directly or indirectly in completing this research, I offer my deepest thanks and appreciation.

Also, a special thank you goes to my best friend, Nurul Nadia binti Mohd Yusoff for her prayers, and endless support. Her belief in me has been the greatest source of strength and inspiration during this academic journey.

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## LIST OF ABBREVIATIONS

| | |
|---|---|
| USM | Universiti Sains Malaysia |
| SPSS | Statistical Package Social Sciences |
| QOL | Quality of Life |
| DASS | Depression Anxiety Stress Scale |
| WHO | World Health Organization |
| APA | American Psychological Association |
| HBM | Health Belief Model |
| HREC | Human Research Ethics Committee |
| CFA | Confirmatory Factor Analysis |

## LIST OF APPENDICES

**HUBUNGAN ANTARA KEBIMBANGAN, KEMURUNGAN DAN TEKANAN DENGAN KUALITI HIDUP DALAM KALANGAN PELAJAR PRASISWAZAH DI PUSAT PENGAJIAN SAINS KESIHATAN, UNIVERSITI SAINS MALAYSIA.**

## ABSTRAK

Isu kesihatan mental dalam kalangan pelajar universiti boleh memberi kesan negatif terhadap kualiti hidup dan kesejahteraan keseluruhan mereka. Oleh itu, kajian ini bertujuan untuk menentukan hubungan antara kebimbangan, kemurungan, tekanan, dan kualiti hidup dalam kalangan pelajar prasiswazah di Pusat Pengajian Sains Kesihatan, Universiti Sains Malaysia (USM). Reka bentuk kajian keratan rentas telah digunakan melibatkan 211 orang pelajar prasiswazah. Data dikumpulkan menggunakan soal selidik kendiri yang mengandungi ciri-ciri sosiodemografi, *Depression Anxiety Stress Scale-21 (DASS-21)*, dan *EUROHIS-QOL 8-item Index*. Data dianalisis menggunakan *Statistical Package for the Social Sciences* (SPSS) versi 30.0. Statistik deskriptif dan analisis korelasi Pearson digunakan untuk menganalisis data. Dapatan kajian menunjukkan bahawa kebimbangan merupakan masalah psikologi yang paling prevalen dalam kalangan responden, diikuti oleh kemurungan dan tekanan. Skor min bagi kebimbangan, kemurungan, tekanan, dan kualiti hidup masing-masing ialah 11.34 (SP = 8.21), 8.26 (SP = 8.86), 11.13 (SP = 8.66), dan 29.45 (SP = 6.27). Analisis korelasi Pearson menunjukkan terdapat hubungan negatif yang signifikan antara kebimbangan dan kualiti hidup ($r = -0.36$, $p < 0.001$), kemurungan dan kualiti hidup ($r = -0.51$, $p < 0.001$), serta tekanan dan kualiti hidup ($r = -0.43$, $p < 0.001$).

Oleh itu, dapatan kajian ini menekankan kepentingan mempromosikan kesedaran kesihatan mental dan menyediakan sokongan psikologi yang bersesuaian bagi meningkatkan kualiti hidup dalam kalangan pelajar prasiswazah.

**ASSOCIATION BETWEEN ANXIETY, DEPRESSION, AND STRESS AND QUALITY OF LIFE AMONG UNDERGRADUATE STUDENTS ATS THE SCHOOL OF HEALTH SCIENCES, UNIVERSITI SAINS MALAYSIA.**

## ABSTRACT

Mental health issues among university students may negatively affect their quality of life and overall well-being. Therefore, this study aimed to determine the association between anxiety, depression, and stress, and quality of life among undergraduate students at the School of Health Sciences, Universiti Sains Malaysia (USM). A cross-sectional study design was employed involving 211 undergraduate students. Data were collected using a self-administered questionnaire consisting of sociodemographic characteristics, the Depression Anxiety Stress Scale-21 (DASS-21), and the EUROHIS-QOL 8-item Index. Data were analysed using SPSS version 30.0. Descriptive statistics and Pearson correlation analysis were used to analyse the data. The findings revealed that anxiety was the most prevalent psychological condition among respondents, followed by depression and stress. The mean scores for anxiety, depression, stress, and quality of life were 11.34 (SD = 8.21), 8.26 (SD = 8.86), 11.13 (SD = 8.66), and 29.45 (SD = 6.27), respectively. Pearson correlation analysis identified statistically significant negative correlations between anxiety and quality of life ($r = -0.36$, $p < 0.001$), depression and quality of life ($r = -0.51$, $p < 0.001$), and stress and quality of life ($r = -0.43$, $p < 0.001$). Depression demonstrated the strongest negative correlation with quality of life. Therefore, the findings highlight the importance of promoting mental health awareness and providing appropriate psychological support to improve the quality of life among undergraduate students.

# CHAPTER 1

# INTRODUCTION

## 1.1 Introduction

This study aims to determine the association between anxiety, depression, and stress and quality of life among undergraduate students at the School of Health Sciences, Universiti Sains Malaysia (USM). This chapter presents the background of the study, followed by the problem statement, research questions and objectives, the hypothesis of the study, the significance of the study, and lastly, the operational definition of key terms used in the study.

## 1.2 Background of Study

The World Health Organization (WHO, 2025) recently revealed data showing that over 1 billion people suffer from mental health issues, with illnesses like depression and anxiety having significant negative effects on the health of individuals and the economy. Even though many nations have strengthened their mental health laws and initiatives, more funding and worldwide effort are required to provide programs that safeguard and advance people's mental health. Despite all ages and socioeconomic backgrounds, people are possibly impacted by mental health issues, which are extremely common in all nations and communities. Mental health issues can significantly lead to the loss of a healthy life, since they are the cause of long-term impairment. It is also causing financial instability worldwide due to rising health care costs for affected individuals and their families.

According to the World Health Organization (WHO, 2021), 359 million people were living with an anxiety disorder, including 72 million children and

adolescents. Excessive fear and worry, along with behavioural abnormalities, are hallmarks of anxiety disorders. Symptoms are severe enough to result in significant distress or significant impairment in functioning (WHO, 2021). Anxiety disorders come in a variety of forms, including generalised anxiety disorder, characterised by excessive worry, panic disorder, which usually manifests in panic attacks, social anxiety disorder, which can be marked by excessive fear and worry in social situations, and separation anxiety disorder, characterised by excessive fear or anxiety about separation from those individuals to whom the person has a deep emotional bond and others. There are effective psychological treatments available, and in some cases, medication may also be recommended, depending on the person's age and the severity of the condition.

| Characteristics | Prevalence | Confidence Interval |
|---|---|---|
| **MALAYSIA** | 1.8 | 1.5 - 2.1 |
| **Location** | | |
| Urban | 1.9 | 1.5 - 2.3 |
| Rural | 1.6 | 1.2 - 1.9 |
| **Sex** | | |
| Male | 1.4 | 1.0 - 1.7 |
| Female | 2.3 | 1.8 - 2.7 |
| **Ethnicity** | | |
| Malays | 1.6 | 1.3 - 1.9 |
| Chinese | 1.3 | 0.6 - 2.0 |
| Indians | 4.6 | 2.9 - 6.3 |
| Other Bumiputeras | 1.8 | 1.1 - 2.5 |
| Others | 2.5 | 1.1 - 3.9 |

Figure 1:1 The prevalence (%) of current depression, National Health Morbidity Survey 2011

In 2019, 23 million children and adolescents were among the 280 million people who suffered from depression World Health Organization (WHO, 2022). Depression is different from a usual mood fluctuations and short-lived emotional responses to challenges in everyday life. When someone has a depressive episode, they spend most of the day, almost every day, for at least two weeks feeling melancholy (sad, irritated, empty), or they lose interest in activities or pleasure (WHO, 2022). Poor concentration, feelings of excessive guilt or low self-worth, hopelessness

about the future, thoughts of suicide or death, disturbed sleep, and changes in food or weight are some of the other symptoms that are also present. People with depression are at an increased risk of suicide. However, effective psychological treatments are available, and medication may also be used depending on the severity and age of the condition (WHO, 2022).

According to the American Psychological Association (APA, 2018), stress is defined as the physiological or psychological reaction to pressures, whether internal or external. Stress causes changes that impact almost all bodily systems, including people's emotions and actions. For instance, palpitations, sweating, dry mouth, shortness of breath, nervousness, rapid speech, heightened unpleasant emotions, and prolonged feelings of stress are some of its manifestations. Stress directly leads to psychological and physiological disorders and diseases, impair mental and physical health, and lower the quality of life by creating these mind-body alterations.

Students at universities encounter both academic and independent living problems. This predisposes them to anxiety, depression, and stress, which are fairly common. According to a study done using DASS-21 assessment, the DASS-21 assessment, among all students, 27.5% had moderate depression and 9.7% had severe or extremely severe depression. However, 34% had moderate anxiety, 29% had severe or extremely severe anxiety, 18.6% had moderate stress, and 5.1% had severe or extremely severe stress (Shamsuddin et al., 2013). The prevalence of anxiety is significantly higher than that of stress or depression, and the only difference between the two is age. More research into these variations is necessary in order to create more effective intervention programs and suitable support services for this population.

Mental health problems among university students have increasingly become a major global public health concern, as they profoundly influence students' overall well-being and quality of life. The WHO defines quality of life as a person's perception of a position in life in relation to their culture, values, goals, expectations, and worries (WHO, 2025). Students at universities frequently deal with a variety of pressures, such as pressure to perform well academically, social adjustment, and future uncertainty. Because of the demanding nature of their coursework and the emotional drain of clinical training, health sciences students are especially at risk (Al Azzam et al., 2021). Long-term anxiety, depression, and stress not only impair focus and academic performance but also upset emotional equilibrium and drastically lower students' general quality of life.

## 1.3 Problem Statement

According to Ebrahim et al. (2024), university students, particularly those pursuing medical and health sciences programmes, experience disproportionately high levels of psychological distress due to demanding academic workloads, frequent examinations, and clinical training. Their cross-sectional study involving 1,696 medical students at Helwan University, Egypt, found that approximately 93% of students experienced moderate to high levels of perceived stress, while 54.9% experienced moderate to severe anxiety. In addition, the highly competitive environment of higher education has intensified these challenges, leading to a rise in psychological problems among undergraduates (Fauzi et al., 2021). Students enrolled in medical and health sciences programs appear to be especially at risk, as they are required to balance rigorous coursework, demanding clinical training, and the expectation to develop strong professional and interpersonal skills. Such ongoing

pressures may place a considerable strain on their mental well-being and overall quality of life (Fauzi et al., 2021).

Similarly, a study conducted in Malaysia revealed that undergraduate dental students are particularly susceptible to professional burnout, anxiety, and clinical depression due to the numerous stressors they encounter throughout their academic and clinical training (George et al., 2022).

Moreover, high levels of anxiety, depression, and stress can have negative effects on students' emotional health, motivation, and focus, and all these are associated with quality of life. During this phase, poor mental health can have an impact on future professional functioning, general life satisfaction, and academic success, leading to a poor quality of life. According to earlier research, anxiety and depression are very common among medical and health sciences students worldwide. For example, Roshaidai et al. (2025) discovered that 239 (77.3%) students showed symptoms of anxiety and 197 (63.8%) students experienced signs of depression. Out of 355 pre-university students approached, 309 responded (87.0% response rate) and answered the study questionnaires.

Despite growing concern over student mental health, there remains limited evidence on the association between anxiety, depression, stress, and quality of life among Health Sciences undergraduate students at Universiti Sains Malaysia (USM). Most previous studies have focused on general university populations or specific faculties, making it difficult to understand the psychological well-being of Health Sciences students, who face additional academic and clinical demands. Without such evidence, universities may be unable to develop targeted mental health interventions and student support services that address the specific needs of this population.

Therefore, this study aims to fill this gap by examining the association between anxiety, depression, stress, and quality of life among undergraduate students at the School of Health Sciences, USM.

## 1.4 Research Questions

The research questions for this study are as follows:

i. What is the level of anxiety, depression, and stress among undergraduate students at the School of Health Sciences, USM?
ii. What is the level of quality of life among undergraduate students at the School of Health Sciences, USM?
iii. Is there any association between anxiety, depression, and stress and the quality of life among undergraduate students at the School of Health Sciences, USM?

## 1.5 Research Objectives

### 1.5.1 General Objective

The general objective of this study is to determine the association between anxiety, depression, and stress and quality of life among undergraduate students at the School of Health Sciences, USM.

### 1.5.2 Specific Objectives

The specific objectives for this study are as follows:

i To determine the level of anxiety, depression, and stress among

undergraduate students at the School of Health Sciences, USM.

ii To determine the level of quality of life among undergraduate students at the School of Health Sciences, USM.

iii To examine the association between anxiety, depression, and stress and the quality of life among undergraduate students at the School of Health Sciences, USM.

## 1.6 Research Hypothesis

Hypothesis 1

**(H0):** There is no association between anxiety, depression, and stress and the quality of life among undergraduate students at the School of Health Sciences, USM.

**(H1):** There is an association between anxiety, depression, and stress and the quality of life among undergraduate students at the School of Health Sciences, USM.

## 1.7 Significance of study

The findings from this study will address and determine the association between anxiety, depression, and stress and the quality of life among undergraduate students at the School of Health Sciences, USM. Mental health problems are prevalent among people nowadays, particularly among students worldwide. The results of this study may contribute to the development of targeted mental health interventions, provide valuable insights into the psychological challenges students face, and ultimately enhance their overall quality of life. The findings also may support the development of mental health awareness programs, counselling services, and

preventive strategies aimed at improving students' psychological well-being and overall quality of life.

Additionally, poor mental health can negatively impact students, especially their academic performance, focus, and cognitive function, which may make it more difficult for students to complete their studies. Thus, the purpose of this research is to determine how anxiety, depression, and stress can affect the physical, psychological, social, and environmental aspects of quality of life. Knowing these impacts will make it easier to identify the areas that most require support and alternatives. The findings can assist university administrators, such as deans and lecturers, in creating clinical and academic settings that promote improved mental health among students. Therefore, this study can improve students' academic achievement, professional readiness, and ability to provide high-quality care in their future jobs.

## 1.8 Definitions of Operational Terms

The operational definitions of the terms used in this study are presented below:

| Term | Standard definition and operational definition |
|---|---|
| Anxiety | Standard definition: Anxiety is a common mental health condition marked by ongoing feelings of worry, fear, and tension. People with anxiety often struggle to concentrate and may experience restlessness or muscle tension. These feelings are often stronger than the actual situation, making it difficult to study, work, or carry out daily activities (WHO, 2023).<br>Operational definition: In this study, the anxiety level will be measured using the anxiety subscale of the Depression |

| | |
|---|---|
| | Anxiety Stress Scales (DASS-21) developed by Lovibond & Lovibond (1995). Higher scores on this subscale indicate higher levels of anxiety. |
| Depression | Standard definition: Depression is a mood disorder that causes persistent sadness, loss of interest, and reduced energy. Other symptoms of depression include altered eating, sleeplessness, and poor self-esteem. These symptoms can interfere with day-to-day functioning, including social and academic life, and often persist for at least two weeks (WHO, 2021).<br><br>Operational definition: In this study, depression level will be measured using the Depression subscale of the DASS-21 (Lovibond & Lovibond, 1995). Higher scores indicate more severe depressive symptoms. |
| Stress | Standard definition: Stress is characterised as a condition of tension or nervousness brought on by challenging circumstances. Humans naturally react to stress, which makes us confront obstacles and dangers in our lives. Stress affects everyone to various extents (WHO, 2023).<br><br>Operational definition: In this study, stress level will be measured using the anxiety subscale of the Depression Anxiety Stress Scales (DASS-21) (Lovibond & Lovibond, 1995). Higher scores on this<br>subscale indicates higher levels of stress. |

| | |
|---|---|
| Quality of Life | Standard definition: Quality of life refers to a person's overall perception of their well-being in the context of their culture, values, goals, and expectations. It encompasses every aspect of life, including environment, social connections, mental well-being, and physical health. When someone has a higher quality of life, they feel fulfilled, healthy, and capable of handling life's obstacles, while a poor quality of life may reflect health problems, stress, or lack of support (WHOQOL GROUP, 1998).<br><br>Operational definition: Quality of life will be measured using the World Health Organization EUROHIS-QOL 8 Index as a measurement instrument. This tool covers four domains, which are physical, psychological, social, and environmental. The higher scores indicate a better quality of life |
| Undergraduate students | Standard definition: Undergraduate students refer to the first phase of university education. It usually leads to a bachelor's degree and comes before postgraduate studies (Polo, 2025).<br><br>Operational definition: In this study, undergraduate students refer to the full-time students studying at the School of Health Science, USM, during the academic session 2025/2026. |

# CHAPTER 2

# LITERATURE REVIEW

## 2.1 Introduction

This chapter provides a general review of the literature about anxiety, depression, and stress on quality of life among undergraduate students. The final section of this chapter will describe the theoretical and conceptual framework used in this study.

## 2.2 Anxiety

According to the WHO (2025a), individuals with anxiety disorders often experience persistent and overwhelming fear or worry, accompanied by physical tension as well as behavioural and cognitive symptoms. These symptoms are typically difficult to manage, cause significant emotional distress, and may persist over a long period if left untreated. Anxiety disorders can disrupt daily functioning and negatively affect various aspects of life, including family relationships, social interactions, academic performance, and work productivity. Globally, it is estimated that 4.4% of the population currently suffers from an anxiety disorder. Various factors contribute to elevated anxiety levels among university students.

According to Naceanceno et al. (2021), the primary sources of stress include financial obligations, social interactions, and academic workload. Financial pressure, in particular, has been identified as a significant contributor to students' mental distress. For instance, Andrews and Wilding (2004) reported that the financial burden resulting from tuition fees and other academic expenses can negatively affect students' academic performance and increase their susceptibility to anxiety and depression. Similarly,

Jones, Park, and Lefevor (2018) found that both academic and financial stress were strongly correlated with heightened anxiety levels among college students.

In addition to financial and academic factors, lifestyle and personal habits also play a role. Mohamad et al. (2021) revealed that poor sleep quality was significantly associated with increased anxiety, as students who experienced sleep disturbances were at a higher risk compared to those with better sleep patterns. Furthermore, academic characteristics such as program level and academic achievement were also linked to anxiety levels. Students enrolled in diploma and PhD programs showed higher anxiety risks compared to others, and students in the first to the fourth academic year with the lowest CGPA (2.0–2.24) were more likely to experience anxiety symptoms.

Social relationships also play a significant role in shaping students' mental well-being. The study by Mohamad et al. (2021) found that students with close friendships or active involvement in university societies reported lower levels of anxiety, suggesting that strong social support networks can act as a protective factor against psychological distress.

International evidence also supports the high prevalence of anxiety among university students. For instance, a study conducted in China during the COVID-19 pandemic by Guan et al. (2021) investigated the prevalence of anxiety and identified its potential risk and protective factors. The findings revealed that the pandemic had a significant socio-psychological impact on society, leading to a wide range of mental health issues, particularly anxiety. The authors noted that the number of individuals experiencing psychological distress far exceeded the number of those infected with the virus. A recent meta-analysis also reported that the prevalence of anxiety among the general population during the pandemic rose to 13.9%, compared to 5% before the outbreak. Furthermore, university students were found to be especially vulnerable, as

anxiety remained the most common psychological issue affecting their motivation, concentration, and social interactions.

Similarly, a study conducted by Samreen et al. (2020) assessed the prevalence and associated factors of anxiety among pharmacy students at a university in Saudi Arabia. The results showed that 49% of the students experienced anxiety, with 25.9% reporting mild, 14.1% moderate, and 8.8% severe levels. The findings indicate that nearly half of the pharmacy students suffered from some degree of anxiety during their academic studies, with most cases ranging from mild to moderate severity. Such levels of anxiety may significantly affect students' academic performance and highlight the need for targeted mental health support.

In a related study, Alsoghair et al. (2023) examined the prevalence of depression and anxiety among students at Qassim University during the COVID-19 pandemic. The study found that 40.6% of students experienced depression and 29.4% experienced anxiety, with female students reporting higher levels of both conditions compared to males.

## 2.3 Depression

According to the WHO (2021), depression is a prevalent mental health disorder that can affect anyone, regardless of age or background. It is characterised by a persistent low mood or a loss of interest and pleasure in daily activities over an extended period. Unlike ordinary mood fluctuations, depressive episodes typically last most of the day, nearly every day, for at least two weeks. Individuals experiencing depression may suffer from sleep disturbances, changes in appetite, fatigue, and difficulty concentrating. They often experience feelings of worthlessness and hopelessness about the future, and in severe cases, may have thoughts of death or suicide.

The factors influencing depression among college students have been identified as four main contributors: biological factors, personality and psychological state, college experience, and lifestyle. They also highlighted the role of universities in recognising risk factors early and improving screening and prevention efforts through modern technological approaches (Liu et al., 2022).

That study also reported that female students exhibited a significantly higher risk of mental health issues compared to their male counterparts (Liu et al., 2022). This disparity is often attributed to a combination of biological and social factors, including genetic vulnerability and hormonal fluctuations, which may predispose females to internalise negative emotions. In contrast, males are more likely to externalise distress through behaviours such as smoking or alcohol use (Liu et al., 2022). Moreover, depression was found to be more prevalent among students in their early academic years, possibly due to factors such as academic pressure, social adjustment challenges, and separation from family (Liu et al., 2022). A related study among Chinese university students revealed that symptoms of anxiety, depression, and stress tended to decrease by the final year, as students became more emotionally adjusted and resilient (Liu et al., 2019).

A systematic review and meta-analysis by Khan et al. (2021) examined the prevalence of depressive symptoms among university students in Pakistan, where nearly 30% of the population is aged 15–29, yet only 10–15% are enrolled in higher education. The review, which included 26 studies with 7,652 participants, reported an overall prevalence of depression of 42.66%, with substantial variation across studies. Notably, almost 40% of young individuals experience their first depressive episode before age 20, with the average onset occurring in the mid-20s. Globally, about 24–34% of university students experience depressive symptoms, mainly due to academic pressure.

The stress of achieving good grades and finding future employment is a major factor contributing to student anxiety and depression. Furthermore, the lack of psychological counselling services and limited faculty training in identifying mental health issues exacerbate the problem. Interestingly, students in non-medical programs showed a higher prevalence of depression (53.6%) compared to medical students (36.9%), possibly due to unmet parental expectations, career uncertainty, and limited job opportunities. These findings underscore the urgent need for mental health support systems and awareness programs within university settings (Khan et al., 2021).

To conclude, compared with teenagers and adults, college students are the key group at significantly higher risk of poor mental health. A series of factors, including family, college, studies, and social interactions, are likely to induce college students' depression.

## 2.4 Stress

According to the World Health Organization (WHO, 2023), stress is defined as a state of mental or emotional tension resulting from difficult or demanding situations. It is a natural human response that helps individuals face challenges and threats in life. However, the level and impact of stress vary among individuals (WHO, 2023).

A study conducted at Sultan Qaboos University (SQU) in Oman by Alkhawaldeh et al. (2023) explored stress levels, stressors, and coping styles among university students and the findings revealed that nearly two-thirds of participants experienced moderate levels of stress. Students with chronic illnesses, low CGPA, living alone, or facing exams on the same day reported significantly higher stress levels.

Growing evidence suggests that university students frequently experience moderate to high stress due to academic and personal demands. Supporting this, Rettew

et al. (2021) found that individuals with high neuroticism, which is marked by anxiety and negative thinking, tend to report elevated stress levels. Similarly, introverted students who withdraw from social interactions are often more prone to stress than their extroverted peers. That study also reported that the majority of students have a moderate level of stress (75.1%), followed by those with a severe level of stress (13.5%) and a mild level of stress (11.4%) (Alkhawaldeh et al., 2023).

Furthermore, a cross-sectional study by Chhetri et al. (2021) conducted among Indian students during the COVID-19 pandemic found that approximately 25% of students were negatively affected by the outbreak, experiencing above-average stress levels. Of these, 6% reported severe stress, while about 45% experienced mild stress. Although conducted during a public health crisis, the study highlights the psychological vulnerability of university students when faced with academic uncertainty and various life stressors.

## 2.5 Quality of Life

According to the American Psychological Association (APA, 2018), Quality of life (QoL) refers to the overall satisfaction and fulfilment a person experiences in life. It is a subjective and multidimensional concept influenced not only by health but also by factors such as personal beliefs, social support, and the surrounding environment. Maintaining a good QoL is important for university students, as it contributes to academic achievement, positive mental health, and overall life satisfaction. Conversely, poor QoL can lead to issues such as burnout, absenteeism, and reduced academic performance.

The QoL among university students is shaped by a combination of psychological, socio-demographic, academic, lifestyle, and environmental factors that

collectively influence how students perceive their overall well-being during their academic journey. According to Eun et al. (2023), QoL is an individual's perception of their position in life within the context of their cultural values, personal goals, expectations, and concerns. As a multidimensional concept, QoL encompasses both subjective aspects, personal satisfaction and happiness, and objective dimensions, including physical, emotional, social, and material well-being, as well as personal growth and activity levels. In that study, involving 408 medical students, psychosocial factors were found to have a significant impact on QoL. The findings revealed that many medical students experienced psychological challenges such as depression, anxiety, burnout, internet addiction, and suicidal ideation. Additionally, socioeconomic pressures, including financial difficulties, were shown to further diminish students' QoL. These results highlight the importance of addressing both psychological and social factors to enhance students' overall well-being and academic success (Eun et al., 2023).

Correspondingly, Freitas et al. (2023) also highlighted that the QoL of health sciences students has become an important concern. These students often face major transitions, such as moving away from family and adapting to demanding academic and clinical environments. Heavy workloads and numerous assignments can negatively affect their physical and mental well-being. Therefore, understanding the factors influencing QoL among health students is crucial to support their mental health and academic success.

Furthermore, a study was conducted to assess the relationship between QoL and depressive as well as minor psychiatric symptoms among nursing students (Pinheiro et al., 2020). The findings revealed a high prevalence of mental health issues, with 25% of students experiencing severe depressive symptoms and 54% showing signs of minor psychiatric disorders, and most commonly among those in their early semesters

(Pinheiro et al., 2020). The study also found an inverse relationship between depressive symptoms and QoL scores (Pinheiro et al., 2020). Based on these results, the authors emphasised the need for universities to provide greater mental health support through counselling services and awareness programs to help students manage psychological distress and enhance their overall QoL.

Other than that, Moura et al. (2016) conducted a study to analyse the QoL among undergraduate nursing students, involving 439 participants from both genders enrolled in a Bachelor of Nursing program. The result regarding the WHOQOL-BREF instrument shows that question 1 enquired how the respondents evaluated their QoL in the last two weeks. The study found that 56.8% of students rated their QoL as good, 28.2% as neither good nor bad, 9.7% as very good, 4.8% as bad, and 0.5% as very bad. When assessing their health condition over the past two weeks, 51.5% reported being satisfied, 26.2% were neutral, 10.6% dissatisfied, 10.2% very satisfied, and 1.5% very dissatisfied. Although the study did not directly measure mental health factors, it provided valuable insight into students' overall perception of well-being through the WHOQOL-BREF assessment.

## 2.6 Association between Anxiety, Depression, and Stress and QoL.

Mental health issues such as anxiety, depression, and stress have become major concerns among students and are closely linked to their overall QoL. Several studies have consistently demonstrated a negative relationship between these mental health conditions and QoL, indicating that higher levels of emotional distress often lead to poorer QoL. As anxiety, depression, and stress increase, students tend to experience lower life satisfaction, which includes academic, emotional balance, social support, physical well-being, and environmental comfort.

A cross-sectional study by Feritas et al. (2023) investigated the relationship between QoL and symptoms of anxiety, depression, and stress among college students. The findings showed a negative association between QoL and depression across all domains, while anxiety and stress were negatively associated with the environmental and psychological domains, respectively (Feritas et al., 2023). Approximately 50% of health sciences students reported mild to very severe symptoms of depression, anxiety, and stress, with over 20% experiencing severe levels. Depression demonstrated the strongest negative impact on QoL, with more than 30% presenting moderate to severe symptoms of depression, particularly within the psychological domain. Moreover, 21.1% of students experienced mild to moderate anxiety, and 31.4% had severe to very severe symptoms, both linked to lower QoL scores. Similarly, 42.3% reported mild to moderate stress, and 23.3% experienced severe stress, further diminishing their quality of life (Feritas et al., 2023).

In addition, Fernandes et al. (2023) assessed the prevalence of depression and its relationship with QoL among high school and university students, reporting rates of 25% and 27%, respectively. Similarly, a study conducted in Malaysia among pharmacy students found that only 24.5% reported good QoL, while 42.1% experienced mild depression, 17.4% moderate, and 1.9% severe depression (Blebil et al., 2021). The study also revealed a significant negative correlation between stress, depression, and quality of life, indicating that higher psychological distress was linked to poorer well-being (Blebil et al., 2021).

Despite numerous international and local studies, limited research has been conducted among Malaysian Health Sciences students, specifically in USM, who face challenging academic and clinical pressures. Hence, this study aims to fill the gap by assessing how anxiety, depression, and stress associate with QoL in this population.

## 2.7 Theoretical and Conceptual Framework

One theoretical approach to understanding health-promoting behaviours is the Health Belief Model (HBM). This model has been selected as the theoretical framework for this study, as it explains how individuals' perceptions influence their health-related behaviours and overall well-being. HBM suggests that a person's readiness to take health-related action depends on 6 primary cognitive constructs that influence behaviour. It consists of perceived threat, which includes perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action, and self-efficacy (Alyafei & Easton, 2024).

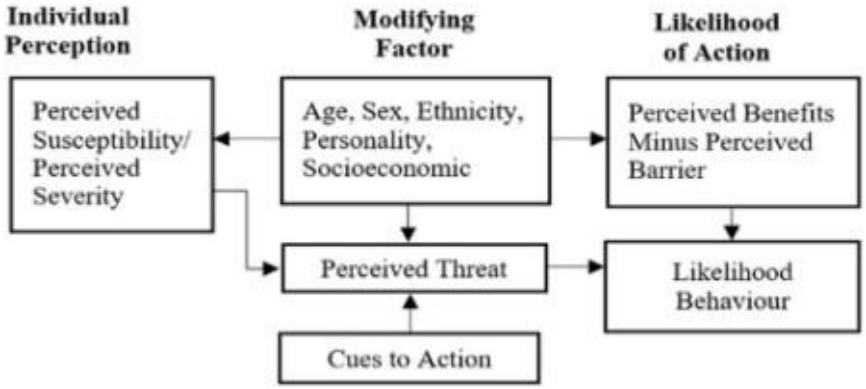


Figure 2:1 Theoretical Framework of the Health Belief Model (Rosenstock, 1974)

According to the HBM, modifying variables are background factors that influence how individuals interpret health information. These may include demographic factors, personality, or past experiences. In this study, the modifying variables are adapted to include anxiety, depression, and stress, as these psychological symptoms influence how students interpret their mental health and contribute to how threatened they feel by emotional challenges. These modifying factors can shape students' perceptions of the four main constructs, which include perceived susceptibility, perceived severity, perceived benefits, and perceived barriers, while perceived threat is further influenced by cues to action.

Perceived threat consists of perceived susceptibility and perceived severity. Perceived susceptibility refers to an individual's sense of vulnerability to a particular condition. In this study, perceived susceptibility is reflected by the presence of mental health symptoms such as anxiety, depression, and stress, which indicate the degree of vulnerability experienced by students. Perceived severity relates to a person's view of how serious the consequences of a condition may be if it is not addressed. Here, perceived severity is represented by the potential impact of anxiety, depression, and stress on students' daily functioning, including their academic performance, emotional well-being, and overall quality of life. Students are more likely to take action if they understand that untreated mental health issues can have significant negative effects.

Perceived benefits refer to the potential positive outcomes of taking steps to improve one's mental well-being. In this study, perceived benefits may include seeking social support, using healthy coping strategies, or adopting better lifestyle habits, all of which can improve overall quality of life. In contrast, perceived barriers are the obstacles that may prevent individuals from taking such steps. These may include heavy academic workload, limited access to mental health services, or stigma associated with seeking help, which can reduce their quality of life.

Cues to action, which serve as exogenous variables in the HBM, represent internal or external triggers that prompt individuals to take health-related action. In this context, cues to action may include university mental health campaigns, peer encouragement, or educational workshops that motivate students to address their psychological well-being.

By applying the Health Belief Model, this study uses the framework to explain how modifying factors such as anxiety, depression, and stress shape students' perceptions and influence their overall well-being and quality of life. Within this framework, anxiety, depression, and stress were examined as the psychological factors associated with student's quality of life.

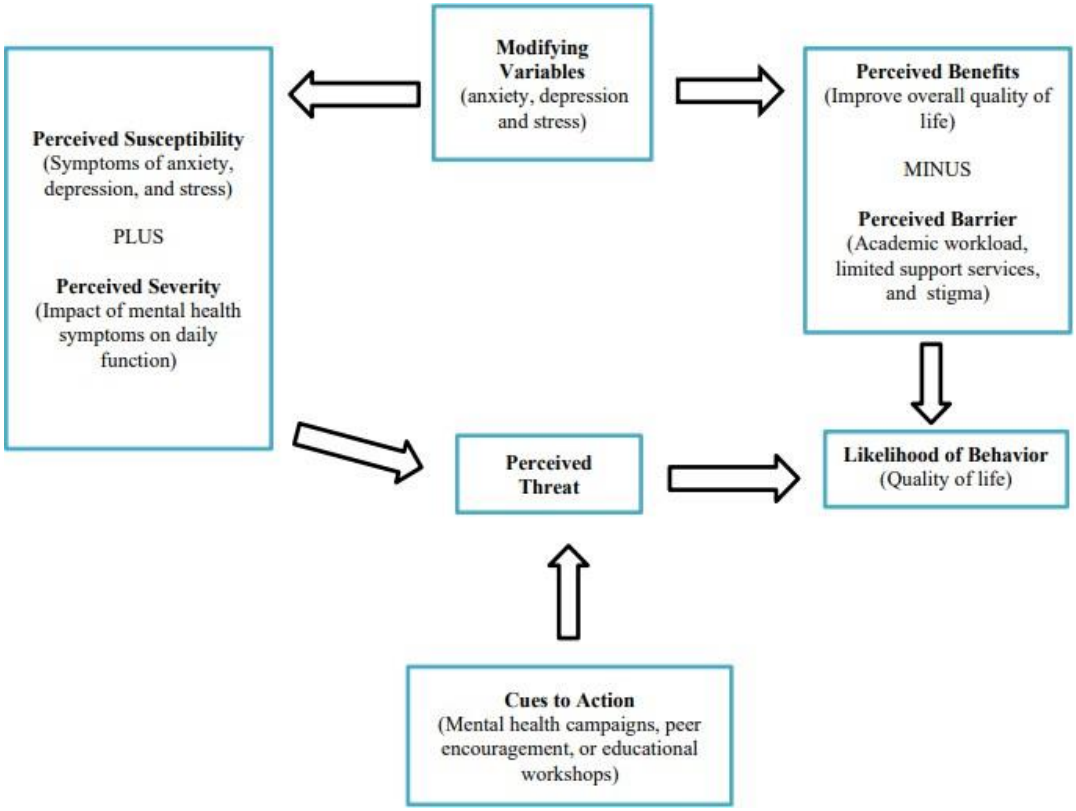


Figure 2:2 Conceptual Framework adapted from Health Belied Model

# CHAPTER 3

# METHODOLOGY

## 3.1 Introduction

This chapter will explain the approach and rationale used to support the chosen research methodology. Determining and understanding an appropriate research design is crucial for obtaining reliable and valid results and achieving the aims of the study. This chapter outlines the research design, study setting, population, sampling methods, data collection instruments, and analysis techniques employed to determine the association between anxiety, depression, and stress and the quality of life among undergraduate students at the School of Health Sciences, Universiti Sains Malaysia (USM).

## 3.2 Research Design

A cross-sectional study design was used in this study. The cross-sectional study design measures the outcome and the exposures in the study participants at the same time. Additionally, this study design was also selected as it is suitable for investigating the association between anxiety, depression, and stress among health sciences students and determining their relationship with quality of life. It is appropriate for the current study, as it is inexpensive, time-efficient, and commonly used in mental health and quality of life research among university students.

## 3.3 Study Setting and Population

The study was conducted at the Health Campus of Universiti Sains Malaysia, located in Kubang Kerian, Kelantan. The campus houses several schools, including the School of Health Sciences, and is integrated with Hospital Pakar Universiti Sains Malaysia has a tertiary-level teaching and specialist hospital. This study was conducted among undergraduate students at the School of Health Sciences, Universiti Sains Malaysia, who fulfilled the inclusion and exclusion criteria. The selection of this population was based on previous studies conducted in Malaysia involving university students as the study population (Shamsuddin et al., 2013; Gan & Yuen-Ling, 2019; Omar et al., 2024).

### 3.3.1 Sample criteria

Several criteria were specified and set to ensure that the subject's data were suitable for research purposes and can attain the targeted goals at the end of the study to meet the research's objective.

#### 3.3.1(a) Inclusion criteria

The specific eligibility requirements for inclusion in this study required that each participant must be:

- A registered undergraduate student, Health Campus, USM.
- Age 19 years and above.

#### 3.3.1(b) Exclusion criteria

Subjects are excluded from this study if they:

- Have a history of diagnosed psychiatric disorder or are currently under psychiatric treatment