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Factor of stress and coping strategies among Undergraduate Nursing Students at UNIMAS

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DECLARATION

I declare that the work in this thesis was carried out in accordance with the regulations of Universiti Malaysia Sarawak. Except where due acknowledgements have been made, the work is that of the author alone. The thesis has not been accepted for any degree and is not concurrently submitted in candidature of any other degree.

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ABSTRACT

Nursing is a profession that helps individuals, groups, families, and communities in health promotion, illness prevention, care of sick patients from physical, mental, and disabled perspectives, and rehabilitation (Santy-Tomlinson et al., 2018). People cannot deny that nursing is among the toughest and most worn professions, especially during pandemics. Therefore, as nursing students, they will experience a higher level of stress than other course students as they need to meet both clinical and academic requirements in their studies as a result they need to sacrifice their semester break. Stressful course subjects, long study sessions, and the requirement for critical thinking were some challenges nursing students faced. Moreover, clinical placement, interface worries and personal factors are stressors among undergraduate nursing students. Findings from a few studies indicate that academic load is the main source of stress due to classwork, examinations and fear of failing. Even though stress is a natural and usually difficult to handle, a good coping technique can facilitate students to enhance their academic performance. Therefore, this research was conducted to explore the stressors and coping strategies of undergraduate nursing students. A quantitative and cross-sectional study design had conducted among 143 undergraduate nursing students in UNIMAS through simple random sampling. The data was analysed through SPSS version 27 and data was collected through online Google Form. From this study, we found that undergraduate nursing students in UNIMAS often encounter stress issues due to academic factors (45.3%), followed by clinical factors (41.7%) and personal issues (26.6%). The most typical used coping strategies among undergraduate nursing students were the use of emotional support, acceptance and positive reframing. From this study, there was a significant relationship ($p < .05$) between year of study and clinical matters as well as year of study and personal issues. Furthermore, parents' monthly income, gender

and living in college has significant correlation with coping mechanisms. Findings from this study will help nursing institutions better understand students' source of stress and their coping strategies. The findings from the students coping strategies could be shared and recommended to other nursing students for future guidance. It will improve their academic and clinical performance and help develop professional identity among nursing students (Kassim, 2024; Sollerhed & Bringsén, 2023). Thus, mental health illness and burnout among students will gradually reduce (Zheng et al., 2023).

Keywords: Nursing, stress, coping mechanisms, undergraduate nursing students, UNIMAS, academic, clinical

Faktor tekanan dan strategi daya tindak dalam kalangan pelajar sarjana kejururawatan di UNIMAS

ABSTRAK

Kejururawatan adalah profesion yang membantu individu, kumpulan, keluarga, dan komuniti dalam promosi kesihatan, pencegahan penyakit, penjagaan pesakit sakit dari perspektif fizikal, mental, dan kecacatan, dan pemulihan. Masyarakat tidak boleh menafikan bahawa kejururawatan adalah antara profesion yang paling sukar dan paling usang, terutamanya semasa wabak penyakit. Oleh itu, sebagai pelajar kejururawatan, mereka akan mengalami tahap tekanan yang lebih tinggi daripada pelajar kursus lain kerana mereka perlu memenuhi keperluan klinikal dan akademik dalam pengajian mereka, akibatnya mereka perlu mengorbankan cuti semester mereka. Mata pelajaran kursus yang tertekan, sesi pengajian yang panjang, dan keperluan untuk berfikir kritikal adalah beberapa cabaran yang dihadapi oleh pelajar kejururawatan.Selain itu, penempatan klinikal dan faktor peribadi adalah tekanan dalam kalangan pelajar kejururawatan sarjana muda. Dapatan daripada beberapa kajian menunjukkan bahawa beban akademik adalah punca utama tekanan seperti kerja kelas, peperiksaan dan ketakutan untuk gagal. Walaupun tekanan tidak dapat dielakkan dan biasanya sukar diurus, mekanisme daya tindak yang baik boleh membantu pelajar meningkatkan prestasi akademik mereka. Oleh itu, penyelidikan ini telah dijalankan di sebuah universiti awam di Malaysia untuk menyiasat tekanan dan strategi daya tindak pelajar kejururawatan sarjana muda. Reka bentuk kajian kuantitatif dan keratan rentas telah dijalankan dalam kalangan 143 pelajar sarjana kejururawatan di UNIMAS melalui persampelan rawak mudah. Data dianalisis melalui SPSS versi 27 dan data dikumpul melalui Borang Google dalam talian. Daripada kajian ini, kami mendapati

pelajar kejururawatan sarjana muda di UNIMAS sering mengalami isu disebabkan faktor akademik (45.3%), diikuti oleh faktor klinikal (41.7%) dan isu peribadi (26.6%). Strategi daya tindak yang paling kerap digunakan dalam kalangan pelajar kejururawatan sarjana muda ialah penggunaan sokongan emosi, pembingkaian semula positif dan penerimaan. Dalam kajian ini, terdapat hubungan yang signifikan (p <.05) antara tahun pengajian dengan perkara klinikal serta tahun pengajian dan isu peribadi. Tambahan pula, pendapatan bulanan ibu bapa, jantina dan tinggal di kolej mempunyai korelasi yang signifikan dengan mekanisme daya tindak. Penemuan daripada kajian ini akan membantu institusi kejururawatan memahami dengan lebih baik punca tekanan pelajar dan strategi daya tindakan mereka. Dapatan daripada strategi daya tindak pelajar boleh dikongsi dan disyorkan kepada pelajar kejururawatan lain untuk bimbingan masa hadapan. Ini akan meningkatkan prestasi akademik dan klinikal mereka serta membantu membangunkan identiti profesional dalam kalangan pelajar kejururawatan (Kassim, 2024; Sollerhed & Bringsén, 2023). Oleh itu, penyakit kesihatan mental dan kelesuan dalam kalangan pelajar akan dikurangkan turut-menurut (Zheng et al., 2023).

Kata Kunci: *Kejururawatan, tekanan, mekanisme daya tindak, pelajar kejururawatan sarjana muda, UNIMAS, akademik, kilnikal*

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LIST OF ABBREVIATIONS

CGS	Centre for Graduate Studies
CLT	Central Limit Theorem
FMHS	Faculty of Medicine and Health Sciences
SNSI	Student Nurse Stress Index Scale SNSI
SPSS	Statistical Package for Social Science
UNIMAS	Universiti Malaysia Sarawak
WHO	World Health Organization

CHAPTER 1: INTRODUCTION

1.0 Introduction

This chapter explained the background of the study, problem statement, research question, research objectives, hypothesis, significance of the study, operational definitions, and conceptual definitions of terms.

1.1 Background of the study

Stress could be defined as worry due to pressure that affected the body and mind (WHO, 2020). It was a natural response of humans to overcome some difficulties and unexpected threats in life. Stress could be due to internal perceptions of one like low self-esteem and negative thinking or external environmental factors like workload, social relationships, and financial concerns. Positive stress could motivate one to better adapt to the environment. However, elevated stress levels caused people to suffer psychological, biological and social issues.

Nowadays, the percentage of students choosing nursing as their career had increased. However, 45.6% of nursing students in China intended to leave their profession after graduation, which caused the country to address the situation (Lin et al., 2021). Furthermore, it was an alarming situation for everyone. This was because the pandemic had already caused an estimated 5.9 million front liners to withdraw from this profession owing to increase workload, working hours, and inadequate PPE (Pniak et al., 2021; Alsulimani et al., 2021). WHO predicted that it would be a scarcity of 18 million medical staff by 2030, while nursing accounts for 50% of this statistic (WHO, 2020). Thus, the work environment would be a challenge to nurses as an increasingly aging population and patients with chronic diseases year by year. This might explain why many nursing students refused to stay in this course.

According to a report in a study conducted by a Malaysia government university, 81.6% of nursing students had symptoms of anxiety and 43.1% of them had stress. Additionally, a few of them with significant levels of stress (10.3%), depression (13.2%), and anxiety (44.3%) were the issues detected among nursing students (Al-Ani., 2020). In Western Rajasthan, 5% of nursing students reported severe stress levels, 82% had moderate stress, and only 13% had mild stress (Nebhinani et al., 2020). Furthermore, a systematic review involving 121 studies showed that most nursing students had moderate stress (Vo et al., 2023). Even though stress is a natural and usually difficult to handle, a good coping technique can facilitate students to enhance their academic performance. Coping mechanisms also differed based on the one's characteristics and surroundings in which the stressors occurred. One of the most effective coping mechanisms was the application of problem-solving techniques. However, emotion-based coping strategies seem to be the least effective (Von et al., 2023). It only offered temporary respite and did not cause long-term growth or resolution (Bondarchuk et al., 2023).

1.2 Problem Statement

Nurses experienced the highest rates of job dissatisfaction and burnout compared to other healthcare professionals such as physicians or paramedics, especially during the pandemic (Galanis et al., 2023). This was because nurses had more frequent and direct contact with patients during pandemics. As a result, they had a higher risk of exposure to infectious diseases and bear a heavy mental load from seeing death and suffering every day. Therefore, this might also suggest that this profession was highly stressful. Hence, the level of stress among nursing students would be higher than students in other bachelor courses. In addition to the theoretical classes, they would have to abide by their clinical responsibilities to achieve a certain level of skill competency as required by the nursing board in order for

them to take or pass their licensure examinations (Mamat et al., 2023). During clinical placement, Abdullah et al. (2022) reported that students who enrolled in the nursing program often feel unprepared for their first clinical practicum because they fear that their lack of experience may cause mistakes, especially medication errors. They felt inadequately prepared, especially when they needed to perform certain skill competencies without the supervision of a clinical instructor. For many, witnessing patients suffering or passing away could cause them to feel worthless, which would result in burnout and questioning their suitability for this field (Molefe, 2024; Szczupakowska et al., 2021).

Furthermore, students in nursing programs offered by higher education had to abide by the institutions' set of rules, such as the teaching and learning activities, which added to their learning workload. Stressful course subjects, long study sessions, and the requirement for critical thinking were some challenges nursing students face (Milton-Wildey et al., 2014). Resolving these challenges needed emotional and individual development (McCarthy et al., 2018; Turner & McCarthy, 2017). In addition, there were other pressures like many assignments, poor English proficiency, fear of failure, and looming deadlines. Similar academic stressors had also been found in studies involving university students in various fields, including time limits, performance pressure, low self-esteem, and interpersonal issues with teachers (Bedewy & Gabriel, 2015; Reddy et al., 2018).

According to Alghamdi et al. (2019), nursing students frequently struggled to manage their personal and academic lives, leading to a lack of leisure time and bonding time with family. Not only that, Nebhinani (2020) pointed out that exam phobia and other professions' attitudes toward nursing would increase their stress levels. Additionally, an increase in exam frequency might emotionally affect students' performance in academic

(Kukoyi et al., 2023). Other than that, a lack of recognition from others ultimately tested their perseverance and resilience toward the existing stresses of the learning workload.

Moreover, nursing students might also face some personal issues, such as financial issues, health problems, accommodation, and an uncertain future. Many university students would work part-time after class or during weekends to pay their school fees and sustain their lives (Kishwar et al., 2023). As a result, they needed to sacrifice their sleep to complete their assignments and prepare for the next class. Thus, lack of sleep caused depression and anxiety to happen (Dong et al., 2022). According to Mahfouz & Alsahli (2016), one who stayed distant from his colleagues reported higher stress levels than one who resides nearby. This could be due to the need for a longer time to reach the university and the need to face traffic jams every day if their class started before the peak hours. Therefore, the students would choose to smoke, engaged in drug abuse, and alcohol abuse to relieve their stress. In short, it was essential to understand nursing students' pressures from many perspectives and their coping methods in order to lessen the number of students quitting the nursing profession.

1.3 Research Questions

a. What are the stressors among undergraduate nursing students at UNIMAS?
b. What are the coping strategies of undergraduate nursing students at UNIMAS?
c. Is there any relationship between demographic profile, stress and coping strategies among undergraduate nursing students at UNIMAS?

1.4 Research objectives

General research objective:

The purpose of this study is to identify the factors of stress, coping strategies, and the relationship of demographic profile, stress, and coping strategies among undergraduate nursing students at UNIMAS.

Specific research objectives:

a. To identify the factors of stress among undergraduate nursing students in UNIMAS
b. To investigate the coping strategies among undergraduate nursing students in UNIMAS
c. To examine the relationship between demographic profile, stress and coping strategies among undergraduate nursing students at UNIMAS.

1.5 Hypothesis

Alternative hypothesis: There is a significant relationship between demographic profile, stress and coping strategies among undergraduate nursing students in UNIMAS.

Null hypothesis: There is no significant relationship between demographic profile, stress and coping strategies among undergraduate nursing students in UNIMAS.

1.6 Significance of the study

Findings from this study will give information for nursing research as future studies can develop better interventions to reduce stress since numerous studies indicated that stress leads to undergraduate nursing students quitting nursing programs. Findings from this study will also help nursing institutions better understand students' source of stress and their coping strategies. The findings from the students coping strategies could be shared and recommended to other nursing students for future guidance. It will improve their academic and clinical performance and help develop professional identity among nursing students

(Kassim, 2024; Sollerhed & Bringsén, 2023). Thus, mental health illness and burnout among students will gradually reduce (Zheng et al., 20223).

1.7 Operational Definition and Conceptual definition of key terms

1.7.1 Stress

Conceptual definition

Stress is a sensation of anxiety or tension induced by a difficult circumstance (Valencia-Florez et al., 2023).

Operational definition

In this study, Student Nurse Stress Index Scale (SNSI) would be utilized to test the stress level (Jones and Johnston., 1999). It consisted of 23 items grouped into three categories: personal issues, academic stress and clinical stress. A five-point Likert scale with 1 represented never, 2 represented rarely, 3 represented sometimes, 4 represented often and 5 represented always. The overall score fell between 23 and 115, and the higher levels of scores indicated greater perceived demand or sources of stress.

1.7.2 Coping Strategies

Conceptual definition

Coping strategies refer to using actions or thoughts to handle the internal and external demands of a stressful condition (Stephenson & DeLongis, 2020).

Operational definition

In this study, the coping strategies would be measured using Brief Cope, which consisted of 24 questions, adapted from Antczak-Komoterska et al. (2023). It consisted of 12 strategies: denial, active coping, self-distraction, use of emotional support, venting, behavioural disengagement, self-blame, acceptance, humour, use of instrumental support, planning, and positive reframing. The question used a 5-point Likert scale, with 1 represented never, 2 represented rarely, 3 represented sometimes, 4 represented often and 5 represented always. The overall score falls between 24 and 120 and the higher levels of scores indicate the most frequent use coping strategies.

1.7.3 Nursing Students

Conceptual definition

Nursing student refers to one engaged in a vocational nursing education program or a professional nursing program (Nusing student definition, 2023).

Operational definition

This study refered to students trained to be nurses and currently studying in the Bachelor of Nursing program at UNIMAS.

1.8 Summary

Most research found that nursing students were believed to undergo higher stress levels than other students. Many studies were conducted outside of Malaysia, but only a few focus on nursing students at UNIMAS. Thus, this study aimed to investigate the stressors and coping techniques among undergraduate nursing students at UNIMAS.

CHAPTER 2: LITERATURE REVIEW

2.0 Introduction

The literature review aimed to create an overview of stress factors and coping strategies among nursing students. Hence, it helped to better understand whether there was a relationship between demographic profile, stress factors, and students' coping mechanisms. Several online databases had been used, including Google Scholar, PubMed, ResearchGate and other sources.

2.1 Stress factors

Stress is a complicated, multidimensional phenomenon that will affect one's mental and physical well-being. It is an unavoidable aspect of life, and people experience its impacts in various settings, such as their social, family, and professional connections. Over the past few decades, numerous components that caused the escalation of stress among undergraduate nursing students had been identified by research. Research done by Afzal et al. (2016), consisting of 122 nursing students from private universities in Lahore, aimed to identify stressors among undergraduate nursing students. This study revealed that nursing students in Lahore had moderate to high stress levels. Many students were stressed out due to academic load (M = 4.28, SD = 0.56), clinical factors (M = 2.96, SD = 0.65), personal problems (M = 3.94, SD = 0.79), and environmental sources (M = 3.87, SD = 0.70). Moreover, a study carried out by Shdaifat et al. (2018) revealed that nursing students at the University of Dammam in Saudi Arabia ranked stress from the task and assignments (M = 1.82, SD = 0.90) as the most stressful factor, followed by stress from lectures or staff nurses (M = 1.80, SD = 0.83), then stress from caring for the ill (M = 1.47, SD = 0.86). Stress related to friendships (M = 1.42, SD = 0.88) ranked number four, stress resulting from poor abilities and knowledge (M = 1.30, SD = 1.03) ranked number five and clinical stress ranked number

six (M = 1.28, SD = 0.90). Similar studies also showed that year 1 nursing students in three public universities in Spanish experienced a statistically significant higher level of academic stress (t = 3.57, p < .001) (Alfonso et al., 2024).

However, these findings contradicted another study by Nebhinani et al. (2020), in which the researcher found that interface worry (M = 17.88, SD = 4.9) was the main stressor. This was probably due to students in Western Rajasthan's poor time management, as they reported always lacking leisure time but being able to handle their examinations well. According to Masilamani et al. (2019), nursing students in the Northern Eastern State of Malaysia scored the highest mean 6.40 on clinical factors, followed by confidence stressor (M = 5.98, SD = 3.93), educational and financial (M = 3.06, SD = 2.07).

Additionally, a descriptive study conducted in Italy discovered that one of the stressors among undergraduate nursing students was due to bad clinical experiences and self-realization about not being suitable for this program, resulting in them wanting to quit this course (Canzan et al., 2022). This could be because the students realized this profession required a lot of socialization as they needed to care for sick people and deal with family members which was tiring to them. On the other hand, some students realized that they were not suitable for this career and that they were uncomfortable helping others with their hygiene.

Furthermore, a research done by Lavoie-Tremblay et al. (2021) revealed that stressors vary depending on the study year. The year 1 students were found to be more stressed because they must live by themselves and handled their money for the first time. Along with starting their classes and learning new content, they also learnt how to navigate a new campus. As a result, they underwent higher levels of academic stress than students

from other years, particularly if they had many classes and struggled to manage their academic responsibilities and social life. To lower their stress levels, people must strengthen their time management skills (Helmi & Aun, 2023). Second-year students were mostly stressed about clinical courses because they felt their skills and knowledge are inadequate during posting. Students in their last year experienced stress since they had to learn more complicated skills, which required them to be competent. Additionally, it was found that they were experiencing stress as they transitioned from student nurses to professional nurses. They felt anxious about practicing medicine in the real world.

2.2 Coping strategies

Coping mechanisms are essential for reducing certain stressors that nursing students encounter during their time as students. Research indicated that nursing students frequently used several coping mechanisms, such as active coping and planning, to deal with difficulties in the classroom or clinical setting. According to research carried out by Nebhinani et al. (2020), many nursing students in Western Rajasthan employed adaptive coping mechanisms more frequently than maladaptation. In order to manage their daily stress, students mostly concentrated on constructive coping mechanisms such as active coping, positive reframing and planning.

However, this difference contradicted the findings of a prior study by Latif & Nor (2019), which found that among 346 diploma nursing students at Kubang Kerian Nursing College, religion (M = 3.30, SD = 0.71) was the most helpful coping mechanism. Furthermore, research by Yehia et al. (2016) investigated the coping techniques among 271 nursing students from different educational levels at AL-Zaytoonah University of Jordan. Using a Brief COPE Scale, the researcher discovered that religion was the most popular choice among participants (M = 3.41, SD = 0.90). As they encountered challenges in their

university lives, most students also opted for active coping (*M* = 3.09, *SD* = 0.96) and planning (*M* = 3.05, *SD* = 0.89). Substance abuse (*M* = 1.17, *SD* = 0.60), behavioural disengagement (*M* = 1.89, *SD* = 0.92), and humour (*M* = 1.99, *SD* = 0.96) were the least common coping strategies. In addition, planning, acceptance, and religion (prayer) were the top three coping techniques used by Malaysian student nurses (Masilamani et al., 2019). This could be because Malaysia was an Islamic nation. Tahfiz education was the most popular kind of religious education there, with most of them focused on Islam. To prepare their children to become better Muslims, many Muslim parents sent the kids to the school as they hope the kids would receive a more rigorous religious education. Thus, Malaysia's education system had emphasized religious education since primary school, like having *sekolah pondok* or practicing Islamic practices like memorizing Al Quran (Misbahrudin et al., 2021). Therefore, many students reported that they felt at ease after praying. Despite that, self-blaming was the only coping mechanism linked to stress (*AOR* = 8.18, 95% *CI* 1.86-35.91). College students might not be the only ones who use self-blame excessively. However, it was still troubling because the latest research indicated the major mediator of the link between self-harm ideation and trauma was self-blame (Whiteman et al., 2019).

A study carried out by Ayaz-Alkaya & Simones (2022) to find out what coping strategies Turkish and American nursing students used most frequently. This study, which included 986 students, demonstrated that the most popular coping strategy was avoidance actions. When people sought to distance themselves from something or someone, they often turned to avoidance coping strategies including substance abuse, humour, or behavioural disengagement (Shuster et al., 2023). As a result of avoiding obligations from family and academics, they most likely had a greater chance of having antisocial behaviour or having major mental health problems (Camilleri et al., 2022). Conversely, Shdaifat et al. (2018)

found that problem-solving techniques were the most often used coping mechanisms for stress whereas avoidance was the least. This study was carried out at a university in Saudi Arabia and was conducted among undergraduate nursing students. When encountering a problem, most participants used their previous experience to tackle it which could help to overcome the difficulties in a more calm and structured way (Kapur, 2023). Previous experience enabled one to make wise choices, maintain fortitude and eventually deal with the challenges more skilful (Desai, 2023).

2.3 Demographic profile, stress factors and coping strategies

Demographic profiles are frequently employed in studies to better understand the traits and behaviours of individuals or populations. Variables such as sex, year of study, living arrangement and monthly income might affect how people perceive and react to various situations. When it came to stress, knowing a population's demographics could help one better grasp the typical stressors and coping mechanisms that undergraduate nursing students faced. This review of the literature investigated the connection between coping mechanisms, stressors, and demographic characteristics. According to Masilamani et al. (2019), there was no significant relationship between stress and one’s demographic profile. This was supported by two studies, which also found no significant difference between stress levels and gender (Anbumalar et al., 2017; Ganesan et al., 2018). This indicated that stress levels were equivalent for both sexes. However, another three studies argued that female had higher levels of stress than males and there was a significant relationship between gender and coping mechanisms (Gefen & Fish, 2019; Graves et al., 2021; Shdaifat et al., 2018). Women were more prone to use venting, emotional support and problem-solving than men. In contrast, Anbumalar's study demonstrated male students were more inclined to utilize effective stress-coping mechanisms than female students, such as problem-solving. Because

they were more emotional than men, female students preferred to place the blame on themselves and sought out social support from others (Fischer & Lafrance, 2015).

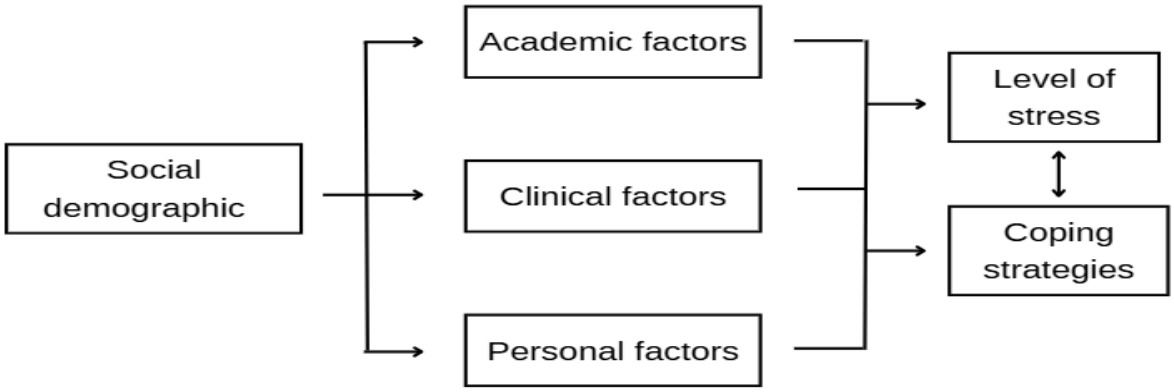
Moreover, Shdaifat's research showed that smoking (p = 0.019) and gender (p = 0.027) were statistically significant with stress (Shdaifat et al., 2018). The type of residence also had a statistically significant difference with the student's coping mechanism (transference) $t(180) = -3.11$, p = 0.002. A weak positive correlation was established by Spearman correlation between sleeping hours and the coping behaviour of "Transference" (r = 0.18, p = 0.017). This was because students' stress levels would increase if their journey to campus took a lengthy time because of traffic As a result, they would use transference coping strategies such as sleeping sooner or scheduling sleep time instead of engaging in activities till midnight to reduce their stress.

Furthermore, there was a weak negative correlation between income and stress level (r = -0.22, p = 0.024) (Shdaifat et al., 2018b). Stress levels decreased as money rose. This finding agreed with the finding of Krishanan et al. (2022) as they found out there was an association between monthly household income and stress level ($p < 0.001$, r = -.278).

2.4 Framework

Figure 2.1

Conceptual framework model



The conceptual framework was proposed and demonstrated as shown in Figure 1 based on the literature review, regarding the relationship between demographic profile, stress and coping strategies among undergraduate nursing students in UNIMAS. In this framework, demographic profile was the predictor profile, whereas stress and coping strategies were the outcome variables. One demographic profile could influence students' stress and coping strategies. A person with a high level of stress would require coping mechanisms to get through the scenario. But, if the coping mechanism was not appropriate for them, their stress level would rise until they figured out a good approach to deal with their issue. Therefore, this study would explore the relationship between demographic profile, stress and coping strategies.

2.5 Summary

This literature review had examined the interactions among stress, coping mechanisms and demographic characteristic among nursing students. It emphasised how stress was a frequent occurrence that was influenced by a number of demographic characteristics, including age, gender, socioeconomic level, and cultural background. People's coping mechanisms frequently differed within different groups, illustrating the intricate connection between individual situations and stress-reduction techniques. In order

to further improve intervention models, future studies should concentrate on addressing knowledge gaps regarding the causal linkages among stress levels, coping mechanisms, and demographic characteristics.

CHAPTER 3: METHODOLOGY

3.0 Introduction

The author would describe the research design, research setting, population, sampling method and sample size, inclusion and exclusion criteria, research instrument, ethical consideration, pilot study, data collection procedure and data analysis methods in this chapter.

3.1 Research design

A logical and methodical plan created for leading a research project was known as a research design (Khanday & Khanam, 2023). In this research, a cross-sectional and quantitative design was conducted because it was less time-consuming during data collection and analysis (Zyuod et al., 2024). For example, surveys were the primary tool for collecting data, while statistical software SPSS (Statistical Package for Social Science) could be used to analyse data. It was a very effective and efficient computational tool as it could lower the possibility of human mistakes in statistics calculations done by hand (Xiong, 2022). Thus, a quantitative study was chosen as it could reduce the burden and expenses of analysing the results. Moreover, a cross-sectional study was an observational study that allowed researcher to analyse data from a population at one certain period (Wang & Cheng, 2020). In contrast to other forms of observational research, cross-sectional studies would not track individuals over time. It was easy to carry out and inexpensive. It contributed to the collection of preliminary data in preparation for a more in-depth investigation in the future. Therefore, a quantitative and cross-sectional design was selected.

3.2 Research setting

The research was carried out at the Faculty of Medicine and Health Science (FMHS) in UNIMAS, which was located at Jalan Datuk Mohammad Musa, Kota Samarahan, Sarawak, Malaysia.

3.3 Population

The target respondents were Year 2 to Year 4 undergraduate nursing students in this faculty. There were a total of 237 students from different backgrounds in the faculty.

3.4 Sampling

3.4.1 Sampling method

Sampling meant selecting the subset of the population of interest in a research study (Makwana et al., 2023). The process of sampling would affect the accuracy of the research. To choose the participants, a simple random sampling was utilized in this study. A simple random sampling was categorized under probability sampling. It was selected in this study because bias would be overcome, and every individual would have an equal opportunity to be selected. A UNIMAS Nursing Students 2024/2025 list was obtained from the FMHS academic office. The list would involve nursing students from year 2 to year 4, totalling 183 students. All the names would be listed from 1 to 183 in Excel, and a random number would be selected using the Random Number Generator. The first step of using a Random Number Generator was to enter the minimum range of 1 and the maximum range of 183. Then, entered the sample size in this study, chose unique numbers and random numbers would be picked. The purpose of simple random sampling was to enable researchers to make valid inferences about the broader population while studying a smaller group. Additionally, this method would be used because the target population was reachable (Andrade, 2020).

3.4.2 Sample size

The population from year 2 to year 4 undergraduate nursing students was 183 and Yamane (1973) simplified formula was applied to count the sample size.

Figure 3.1

Taro Yamane Formula

$$n = \frac{N}{1 + N(e)^2}$$

Where:
N= Number in population
e = Confidence interval
n= Sample size

The calculation of the sample size was stated as below:

$$n = \frac{183}{1 + 183(0.05)^2}$$

= 126

In conclusion, the estimated sample size was 126. However, to prevent the dropout of participants in data collection due to the inability to approach the participants, most researchers would add 10% of the sample size, which was called the attrition rate (Williams, 2021).

The attrition rate calculation was stated as below:

Attrition rate = Population size x 10%

= 126 x 10%

= 12.6

= 13

In short, after adding 10% of the population size, which was an extra 13 participants, the sample size was 139 participants.

The final sample size was calculated as follows:

Final sample size = Sample size + Attrition rate

= 126 + 13

= 139

3.4.3 Inclusion and exclusion criteria

Year 2 to year 4 undergraduate nursing students who had already undergone the clinical and theoretical components of the study program were included in this study. Conversely, year 1 undergraduate nursing students were excluded as they had no clinical experience. Post-registration and postgraduate nursing students were excluded because this study only targeted undergraduate nursing students. Their stressors and coping mechanisms might differ from those of other undergraduate nursing students, as they already had years of working experience in the hospital. Hence, they were more adaptable in coping (Engelbrecht & Wilke, 2021). The participants who had already joined the pilot study or those unwilling to join this study would be excluded.

3.5 Research instrument

The researcher utilised the study instrument to collect the necessary data for the research assignment. In order to guarantee accessibility and convenience during the distribution process, an online version of the questionnaire was implemented. The decision to employ a digital format was made to facilitate rapid dissemination and data collection, enabling investigators to compile responses within a short duration.

The questionnaire included items that were adapted from two well-established instruments: the Student Nurse Stress Index Scale (SNSI) developed by Alghamdi et al. (2019) and the Coping Orientation to Problems Experienced Inventory (Brief-COPE) developed by Antczak-Komoterska et al. (2023). The adaptation process entailed a thorough assessment of the original questionnaires to determine the sections and items that were most applicable to the main topic of this study. In order to ensure that the language and content were appropriate for the academic and cultural environment of students at Universiti Malaysia Sarawak (UNIMAS), modifications were implemented. The original authors' written consent was obtained before the use and modification of the questionnaires to ensure the ethical use of their instruments.

The questionnaire was organised into three main sections to enable systematic and coherent data collection. Section A (Appendix E) from question 1 to question 4 concentrated on participants' demographic data, including sex, year of study, living arrangement and monthly income. This part provided a demographic summary of the sample and facilitated the determination of potential correlations or trends between variables.

Section B focused on the participant's stressor. There were two parts in this section, which were perceived stress scale based on the factors from question 5 to question 7 and

specifically participants' stressors from question 8 to question 30, adapted from the Student Nurse Stress Index Scale (SNSI) referring to Appendix E (Alghamdi et al., 2019). It consisted of 23 items grouped into personal issues, academic stress and clinical stress. A five-point Likert scale with 1 denoting never, 2 denoting rarely, 3 denoting sometimes, 4 denoting often and 5 denoting always. The overall score fell between 23 and 115, and the higher scores indicated greater perceived demand or sources of stress. The reliability of the SNSI in this study was 0.80, which means it was a good and reliable tool.

A modified version of the Brief-COPE was employed to evaluate the coping techniques uesd among undergraduate nursing students in UNIMAS. The version used in our study was composed of 24 items from question 31 to question 55, which were substantially reduced from the original 28 items in order to eliminate redundancy while maintaining the instrument's reliability and validity. The Cronbach's alpha for the Brief Cope was 0.90, proving it was a valid and reliable tool. It consisted of 12 strategies: venting (items 10 and 20), self-blame (items 16 and 25), self-distraction (items 1 and 2), denial (items 4 and 7), planning (items 13 and 26), behavioural disengagement (items 8 and 18), use of emotional support (items 5 and 6), humour (items 14 and 23), active coping (items 3 and 17), acceptance (items 15 and 24), use of instrumental support (items 11 and 21) and positive reframing (items 12 and 22). The question used a 5-point Likert scale, with 1 representing never, 2 representing rarely, 3 representing sometimes, 4 representing often and 5 representing always. The modifications implemented in this section were thoroughly evaluated to ensure that the original tool's integrity was preserved while simultaneously aligning it with the unique requirements of the study's participants. Higher scores suggest a greater tendency among individuals to adopt the method as a preferred coping strategy.

3.6 Ethical Consideration

Ethical approval has been obtained from the Research and Ethics Committee of the FMHS at UNIMAS (refer to Appendix A). The research complied with ethical standards to safeguard participants' rights, privacy, and secrecy. Participants who agreed to join the study would receive a formal informed consent document detailing the objective of the study, their rights, and confidentiality protections. They were notified that their participation was completely optional and that they had the ability to step down from the study at any moment without incurring any penalties or consequences. A written letter of approval was sent to the original author to obtain authorisation for adapting and modifying the research instruments utilised in this investigation (refer to Appendix D). Before the questionnaire was implemented, authorisation was approved. Furthermore, participants' identities were kept confidential through detailed confidentiality protocols. Participants were allocated numerical codes rather than their names, and no personally identifiable information was collected or shared. In order to maintain privacy, the researcher and the academic supervisor were given access to the collected data. The data collected during the study were maintained in strict confidence. It would be securely stored in a password-protected file on a laptop and retained for five years in accordance with research guidelines before being permanently deleted as per the guidelines. This study would protected the rights and privacy of participants by adhering to these ethical principles.

3.7 Pilot study

A pilot study was a small-scale preliminary study designed to assess a larger project’s duration and adverse events. In other words, a pilot study was essential for increasing a research’s efficacy and viability (K et al., 2023). From the pilot study, the researcher would receive feedback from volunteers regarding the questionnaire before conducting the entire

survey. In this study, 10% of the sample size, 14 students, would be selected as volunteers in the pilot study once approval from the Research and Ethics Committee was obtained (Whitehead et al., 2016). However, they would not be involved in the main study. Participants who met the pilot study's inclusion criteria would be selected using a Random Number Generator. Then, the data would be recorded and interpreted using SPSS version 27. The reliability of the SNSI in Section B adapted from a study by Alghamdi et al. (2019) was 0.84. From this pilot study collected from 14 undergraduate nursing students, the Cronbach's alpha value achieved α=0.80. The Cronbach's alpha for the Brief Cope in Section C was 0.90, proving that it was a valid and reliable tool (Antczak-Komoterska et al., 2023). The Cronbach's alpha value of this pilot study was 0.80. Taber (2018) mentioned that Cronbach's alpha was considered acceptable reliability when greater than 0.70. The feedback from the pilot study would be used to improve the reliability of the questionnaire items.

3.8 Data Collection Procedure

The data collection started once the faculty's research and ethics committee approved it. Therefore, it was started in early March 2025 and continued until the end of March 2025. An online questionnaire with a consent form was distributed to the selected 139 students through WhatsApp. All the participants were given 15 minutes to complete the questionnaire.

3.9 Data Analysis

SPSS version 27 was used for data analysis. The data was recorded and cleaned based on the sections in the online questionnaire. Missing data was being identified too. Data normality was performed using the Kolmogorov-Smirnov Test as the sample size was more than 50 which was considered large (Mishra, Pandey, et al., 2019). Sometimes, it was hard

to achieve $p > 0.05$. Therefore, the researcher would visually observe the shape of the histogram. If the reading of skewness was between -2 and +2 or kurtosis was between -7 and +7, the researcher could presume the data was normally distributed (Hair et al., 2022).

Most of the variables in section A

were categorical data. Categorical data would be reported in frequency or percentage and shown in the bar chart. Sections B and C would present the data in mean, standard deviation and range using descriptive statistics, as both variables were continuous. A normality test would be used to observe the data distribution and determine the inferential statistics. If the data in this study was not normally distributed, non-parametric data would be used. Kolmogorov-Smirnov test would be used to determine the normality of large sample size continuous data. If $p < .05$, it would be classified as statistically significant and not normally distributed. If $p > .05$, it would be considered normally distributed and not statistically significant. This indicated strong evidence for the null hypothesis, retaining the null hypothesis and rejecting the alternative hypothesis.

In this study, academic factors in section B showed $p = 0.23$, so failed to reject null hypothesis indicated it was normally distributed. On the other hand, clinical issues, personal matters in Section B and coping strategy in Section C showed $p < .05$, so rejected null hypothesis indicated that it was not normally distributed.

The relationship between demographic profile, stress, and coping strategies among undergraduate nursing students in UNIMAS would be examined by using the Mann-Whitney U test, Independent t-test, Kruskal-Wallis test and One Way ANOVA test. Mann-Whitney U test was applied to determine the impact of gender and living in college on clinical factors,

personal factors and coping strategies (Sundjaja et al., 2023). Then, the Independent t-test was applied to determine the academic factors for males and females, as well as those students who live in college and live outside college (Kim, 2019). Next, the Kruskal-Wallis test was utilized to determine the impact of year of study and parents' monthly income on clinical factors, personal factors and coping techniques, as measured by the Life Orientation Test (LOT) (Ostertagová et al., 2014). Lastly, the One-way ANOVA was utilized to compare the means of year of study, parents' monthly income and academic factors (Mishra et al., 2019).

3.10 Summary

A cross-sectional and quantitative study design was used. The study was carried out at UNIMAS, and the participants were undergraduate nursing students in FMHS. The researcher utilized simple random sampling to choose participants. Sample size of this research was 139 students, calculated using the Yamane formula (1973). An online questionnaire, accompanied by a consent form and divided into three sections, was distributed to participants through WhatsApp. Ethical approval was secured before data collection began. The data were analysed by using descriptive statistics, Mann-Whitney U test, Independent t-test, One-Way ANOVA test and Kruskal-Wallis test, depending on whether the data followed a normal distribution.

CHAPTER 4: RESULTS

4.0 Introduction

This chapter reported the findings about stressors and coping techniques among undergraduate nursing students at UNIMAS. The result for sociodemographic characteristics and level of stress perceived by the participation were shown in this chapter. This section also covered the relationship between demographic profile, stress, and coping strategies. There were no outliers or extreme values from screening the data. CLT discussed that a sample size of at least 30 was usually considered appropriate to ensure that the sample mean closely resemble a normal distribution. Hence, a parametric test had been deployed in this study.

4.1 Data Distribution

For academic factors, preliminary analyses were performed to ensure no violation of the assumptions of normality, D (138) = .059, p = .20. Furthermore, preliminary analyses were performed on clinical factors and it was found that there is a violation of the assumptions of normality, D (138) = .01, p = .002. Next, preliminary analyses were performed on personal factors and it was found that there is a violation of the assumptions of normality, D (138) = .083, p = .019. Last but not least, preliminary analyses were performed on coping strategies and it was found that there is a violation of the assumptions of normality, D (138) = .252, $p < .001$. No outliers or extreme values were detected from the box plot.

4.2 Socio-demographic variables of UNIMAS undergraduate nursing students (n=139)

A total of 139 undergraduate nursing students in UNIMAS were analysed. It consisted of 21 (15.1%) male and 118 (84.9%) female undergraduate nursing students (n = 173). The participants were grouped into different years of study: year 2 (38.8%, n = 54),

year 3 (32.4%, *n* = 45) and year 4 (28.8%, *n* = 40). The majority of the students were living in college (95%, *n* = 132), while the rest lived outside the college. The respondents were also categorized in terms of their parents' income: 28.8% for RM1500 or below, 54% for RM1501-5000 and 17.3% for RM5001 or above. (Refer to Table 4.1)

Table 4.1
Socio-demographic variable (n=139)

Characteristics		Frequency	Percentage (%)
Gender	Male	21	15.1
	Female	118	84.9
Year of Study	Year 2	54	38.8
	Year 3	45	32.4
	Year 4	40	28.8
Living in college	Yes	132	95.0
	No	7	5.0
Parents Income	RM1500 or below	40	28.8
	RM1501-5000	75	54.0
	RM5001 or above	24	17.3

4.3 Level of stress perceived by UNIMAS undergraduate nursing students

Table 4.2 showed the degree of stress that UNIMAS undergraduate nursing students felt. 45.3% of students (*n* = 63) often felt stress due to academic concerns, 41.7% (*n* = 58) often experienced stress from clinical issues. Meanwhile, only 48.9% (*n* = 68) said that other factors like health concerns, relationships with others, and financial difficulties sometimes made them feeling stressed.

Table 4.2
Level of stress perceived by UNIMAS undergraduate nursing students

Item	Never	Rarely	Sometimes	Often	Always
	***n* (%)**	***n* (%)**	***n* (%)**	***n* (%)**	**n (%)**
Academic factors	0 (0.0)	4 (2.9)	43 (30.9)	63 (45.3)	29 (20.9)
Clinical factors	0 (0.0)	6 (4.3)	48 (34.5)	58 (41.7)	27 (19.4)

Personal factors (e.g., financial problems, health problems, relationship with people around)	0 (0.0)	18 (12.9)	68 (48.9)	37 (26.6)	16 (11.5)

Note. *n*: Sample size.

4.4 Student Nurse Stress Index among UNIMAS undergraduate nursing students

Statistical results of student nurse stress index (academic, clinical and personal factors) among UNIMAS undergraduate nursing students were showed in Table 4.3 and Table 4.4. The most prominent source of stress that perceived by students was the stress of failing an examination (M = 4.27, SD = 0.71), follow by the fear of making mistakes when providing patient care (Mdn = 4, IQR = 1) and students were afraid of the examination (M = 4.03, SD = 0.964). The least stressful sources of stress were due to too many responsibilities in others such as position in UNIMED (Mdn = 1, IQR = 1).

Table 4.3

Student Nurse Stress Index among UNIMAS undergraduate nursing students (academic factors)

SNSI Item		Mean	SD
Academic Factors	1. Afraid of examination	4.03	.964
	2. Afraid of failing the examination	4.27	.710
	3. Too many assignments	3.65	.788
	4. Too many classes	3.65	.890
	5. Lack of clear feedback and guidance on assignments	3.34	.794
	6. Poor guidance from the lecturers	2.81	.748
	7. Difficulty assessing office hour	2.68	.926
	8. Lack of proper space for students to do revisions or discussions	3.09	1.032
	9. Poor time management to balance between study and leisure time	3.49	.935

Table 4.4

Student Nurse Stress Index among UNIMAS undergraduate nursing students (Clinical factors and personal factors)

SNSI Item		Median	IQR
Clinical Factors	1. Inability to maintain the balance between studying and clinical posting	3	1
	2. A gap between practices learnt and actual practices	3	1
	3. Fear of making mistakes when providing patient care	4	1
	4. Lack of confidence to perform procedures	3	1
	5. The staffs are unfriendly or unhelpful	3	2
	6. Clinical instructors are unfriendly or unhelpful	2	1
	7. Poor relationship with clinical instructors in clinical posting	2	1
	8. Poor relationship with peers in clinical posting	2	1
Personal factors	1. Financial problems	3	2
	2. Health problems	3	1
	3. Have less holiday compared to others' courses	3	2
	4. Challenges in transportation to faculty	3	2
	5. Toxicity environment in the classroom (e.g., discrimination, bullying, lack of respect)	2	1
	6. Too much responsibility in others (e.g., position in UNIMED)	1	1

Note. SNSI Index: Student Nurse Stress Index; *SD*: Standard Deviation; IQR: Interquartile Range.

4.5 Coping strategies among UNIMAS undergraduate nursing students

Coping strategies among UNIMAS undergraduate nursing students were presented in Table 4.5. Data of coping strategies was not normally distributed. The most frequent coping strategy was the use of emotional support (*Mdn* = 4, *IQR*=1), positive reframing (*Mdn* = 4, *IQR*=1) and active coping (*Mdn* = 4, *IQR*=1). Whereas, the least coping used was venting (*Mdn* = 2, *IQR*=1).

Table 4.5

Items	Median	IQR
Self-Distraction	**3.5**	**1**
1. To distract myself, I've been turning to homework or assignments	3	1
2. I think less and distract myself by doing other activities (e.g., exercise, listening to music, shopping)	4	1
Active-coping	**4**	**1**
3. I take action to reduce the worseness of the situation by interacting with peers	4	1
4. I've been focussing on taking action to improve my current circumstances	4	1
Denial	**3.5**	**1.5**
5. I refuse to believe something that has already happened (e.g., Failing an exam)	3	2
6. I keep on saying "It is not real" when something happens	4	1
Use of emotional support	**4**	**1**
7. I always can get emotional support from my family members	4	1
8. I always can get emotional support from friends	4	1
Behavioural disengagement	**3**	**1.5**
9. I will give up easily when something I cannot handle happens	4	1
10. I give up the effort to handle	2	2
Venting	**2**	**1**
11. I will express my negative emotions	2	1
12. I always express bad emotions through words	2	1
Use of instrumental support	**3.5**	**1**
13. I always try to help myself by seeking advice from others	3	1
14. When I have no idea how to solve a problem, I will seek for advice from others	4	1
Positive reframing	**4**	**1**
15. I believe that good things will happen after this	4	1
16. I've been making an effort to view it differently and more optimistically	4	1

Planning	**3**	**1**
17. I always have a backup plan if my previous plan fails	3	1
18. I've been thinking hard about my next steps	3	1
Acceptance	**3**	**1**
19. I will accept the reality that things already happen and are unchangeable	3	1
20. I have been adjusting to it	3	1
Self-blame	**3**	**1**
21. I will blame myself when something happens	3	1
22. I have been self-critiquing	3	1
Humour	**3**	**2**
23. Although I am in a bad situation, I will make fun of it	3	2
24. Although I am in a bad situation, I will make jokes of it	3	2

Note. IQR: Interquartile Range.

4.6 Relationship between demographic variables and factors of stress

4.6.1 Relationship between demographic variables (year of study and parents' monthly income) and factor of stress (academic factors)

Firstly, for the year of study, participants were divided into three groups: Year 2, Year 3 and Year 4. There was no statistical difference at the $p > .05$ level in the 3 groups of years of study, F (25,113) = 1.128, p = .325.

For parents' monthly income, participants were divided into three groups: RM1500 or below, RM1501-RM5000 and RM5001 or above. There was no statistical difference at the $p > .05$ level in the three groups of parents' monthly income, F (25,113) = 1.3, p = .177. (Refer to Table 4.6)

Table 4.6

The One-way Anova test of the factor of stress (academic factors) by demographic variables (year of study and parents' monthly income) among UNIMAS undergraduate nursing students

Demographic variables	**Academic factors**					
	SS	***df***	***MS***	***F*(25,113)**	***p***	η^2
Year of study	18.49	2	.740	1.128	.325	.200
Parents' monthly income	13.89	2	.555	1.300	.177	.223

Note. *SS*: Sum of squares; *df*: Degrees of freedom; *MS*: Mean Square; *F*: F ratio; *p*: p-value; η^2: Eta Squared.

4.6.2 Relationship between demographic variables (year of study and parents' monthly income) and factor of stress (clinical factors)

A Kruskal-Wallis test revealed a statistically significant difference in clinical factors across three different years of study, H (2) = 2.457, p = .014. Year 2 students recorded a significantly higher median score (*Mdn* = 25) than the year 3 nursing students (*Mdn* = 24) and year 4 nursing students (*Mdn* = 24.5). However, there was no statistical significant difference in clinical factors across three different groups of parents' monthly income, H (2) = 2.848, p = .241. Parents who have a monthly income of RM1500 or below recorded a significantly higher median score (*Mdn* = 25.5) than the parents who have a monthly income of RM1501-RM5000 (*Mdn* = 24) and RM5000 or above (*Mdn* = 24). (Refer to Table 4.7)

Table 4.7

The Kruskal-Wallis test of factors of stress (clinical factors) by demographic variables (year of study and parents' monthly income) among UNIMAS undergraduate nursing students

Demographic variables	**Clinical factors**			
	Median (*IQR*)	***H***	***df***	***p***
Year of study		2.457	2	.014

Year 2	25 (7)			
Year 3	24 (6)			
Year 4	24.5 (6)			
Parents' monthly income		2.848	2	.241
RM1500 or below	25.5 (7)			
RM1501-RM5000	24 (7)			
RM5000 or above	24 (8)			

Note. *IQR*: Interquartile range; *H*: Kruskal–Wallis H statistic; *df*: Degrees of freedom; *p*: p-value.

4.5.3 Relationship between demographic variables (year of study and parents' monthly income) and factor of stress (personal factors)

A Kruskal-Wallis test revealed a statistically significant difference in personal factors across three different years of study, $H(2) = 7.215$, $p = .027$. Both year 2 and year 3 nursing students recorded a significantly higher median score (*Mdn* = 17), which is higher than year 4 nursing students (*Mdn* = 16). However, there was no statistical significant difference in personal factors across three different groups of parents' monthly income, $H(2) = 3.808$, $p = .149$. Parents who have a monthly income of RM1500 or below recorded a significantly higher median score (*Mdn* = 18) than the parents who have a monthly income of RM1501-RM5000 (*Mdn* = 16) and RM5000 or above (*Mdn* = 15.5). (Refer to Table 4.8)

Table 4.8

The Kruskal-Wallis test of the factor of stress (personal factors) by demographic variables (year of study and parents' monthly income) among UNIMAS undergraduate nursing students

Demographic variables	**Personal factors**			
	Median (*IQR*)	***H***	***df***	***p***
Year of study		7.215	2	.027
Year 2	17 (5)			

Year 3	17 (5)			
Year 4	16 (7)			
Parents' monthly income		3.808	2	.149
RM1500 or below	18 (6)			
RM1501-RM5000	16 (6)			
RM5000 or above	15.5 (5)			

Note. *IQR*: Interquartile range; *H*: Kruskal–Wallis H statistic; *df*: Degrees of freedom; *p*: p-value

4.6.4 Relationship between demographic variables (gender and living in college) and factors of stress (academic factors) among UNIMAS undergraduate nursing students

There was no significant difference in scores for males (M = 34.05, SD = 6.64) and females (M = 34.15, SD = 5.60), t (137) = -.077, p = .939. Moreover, there was no significant difference in scores of students living in college (M = 34.05, SD = 6.64) and students living outside college (M = 34.15, SD = 5.60), t (137) = -.077, p = .939. (Refer to Table 4.9)

Table 4.9

The Independent T test of factors of stress (academic factors) by demographic variables (gender and living in college) among UNIMAS undergraduate nursing students

Demographic variables	**Academic factors**						
	n	**Mean**	**SD**	***t***	***df***	***p***	**Cohen's *d***
Gender				-.077	137	.939	-.018
Male	21	34.05	6.64				
Female	118	34.15	5.60				
Living in college				-1.09	137	.280	-.421
Yes	132	34.02	5.80				
No	7	36.43	4.24				

Note. *n*: Sample size of each group; *SD*: Standard Deviation; *t*: t-value; *df*: Degrees of freedom; *p*: p-value; Cohen's *d*: Effect size.

4.6.5 Relationship between demographic variables (gender and living in college) and factors of stress (clinical factors)

A Mann-Whitney U Test revealed no significant difference in the gender (*Mdn* = 2), *U* (138) = 1202, *p* = .827 and clinical factors. Moreover, there was no significant difference in living in college (*Mdn* = 1), *U* (138) = 361, *p* = .329 and clinical factors. (Refer to Table 4.10)

Table 4.10

The Mann-Whitney U test of factors of stress (clinical factors) by demographic variables (gender and living in college) among UNIMAS undergraduate nursing students

Demographic variables	Clinical factors				
	Median	**IQR**	***U***	***p***	***Z***
Gender	2	0	1202	.827	.827
Living in college	1	0	361	.329	-.975

Note. *IQR*: Interquartile range; *U*: Mann-Whitney U statistic; *p*: p-value; *z*: Z-score.

4.6.6 Relationship between demographic variables (gender and living in college) and factors of stress (personal factors)

A Mann-Whitney U Test revealed no significant difference in the gender (*Mdn* = 2), *U* (138) = 1193, *p* = .786 and personal factors. Next, there was no significant difference between living in college (*Mdn* = 1), *U* (138) = 381, *p* = .434 and personal factors. (Refer to Table 4.11)

Table 4.11

The Mann-Whitney U test of factors of stress (personal factors) by demographic variables (gender and living in college) among UNIMAS undergraduate nursing students

	Personal factors

Demographic variables	Median	IQR	*U*	*p*	*Z*
Gender	2	0	1193	.786	-.271
Living in college	1	0	381	.434	-.783

Note. *IQR*: Interquartile range; *U*: Mann-Whitney U statistic; *p*: p-value; *z*: Z-score

4.6.7 Relationship between demographic variables (year of study) and coping strategies

A Kruskal-Wallis Test revealed no significant difference between self-distraction and three different years of study, H (2) = 1.798, p = .407; active coping, H (2) = 1.521, p = .467; behavioural disengagement, H (2) = .961, p = .618; denial, H (2) = .961, p = .164; use of emotional support, H (2) = 4.001, p = .135; positive reframing, H (2) = 3.17, p = .205; acceptance, H (2) = 2.502, p = .286; self-blame, H (2) = .431, p = .806; venting, H (2) = 1.824, p = .402; use of instrumental support, H (2) = .396, p = .820; planning, H (2) = 1.770, p = .413; humour, H (2) = 3.138, p = .208. (Refer to Table 4.12)

Table 4.12

The Kruskal-Wallis test of coping strategies by demographic variables (year of study) among UNIMAS undergraduate nursing students

Coping strategy	Year Of Study					
	Median (IQR)			*H*	*df*	*p*
	Year 2	Year 3	Year 4			
Self-Distraction	7 (1)	7 (2)	7 (2)	1.798	2	.407
Active coping	7 (2)	8 (1)	7 (2)	1.521	2	.467
Behavioural Disengagement	6 (2)	6 (2)	6 (1)	.961	2	.618
Denial	7 (2)	7 (2)	7.5 (3)	.961	2	.164
Use of emotional support	8 (2)	8 (2)	7 (2)	4.001	2	.135
Positive reframing	7 (2)	8 (2)	7 (2)	3.170	2	.205

Acceptance	7 (2)	8 (2)	7 (2)	2.502	2	.286
Self-Blame	6 (2)	6 (1)	6 (3)	.431	2	.806
Venting	5 (2)	5 (2)	4 (2)	1.824	2	.402
Use of instrumental support	7 (2)	7 (2)	7 (2)	.396	2	.820
Planning	7 (2)	7 (2)	7 (2)	1.770	2	.413
Humour	6 (3)	6 (2)	6 (4)	3.138	2	.208

Note. *IQR*: Interquartile range; *H*: Kruskal–Wallis H statistic; *df*: degree of freedom; *p*: p-value.

4.6.8 Relationship between demographic variables (parents' monthly income) and coping strategies

A Kruskal-Wallis Test revealed a significant difference between self-distraction, venting and three different groups of monthly income: self-distraction, H (2) = 7.253, p = .027; venting, H (2) = 6.123, p = .047. However, there is no significant difference between active coping, behavioural disengagement, denial, use of emotional support, positive reframing, acceptance, self-blame, use of instrumental support, planning, humour and parents' monthly income: active coping, H (2) = .669, p = .716; behavioural disengagement, H (2) = 2.106, p = .349; denial, H (2) = .031, p = .985; use of emotional support, H (2) = 3.046, p = .218; positive reframing, H (2) = 2.021, p = .364; acceptance, H (2) = 2.374, p = .305; self-blame, H (2) = .318, p = .853; use of instrumental support, H (2) = 1.997, p = .368; planning, H (2) = 3.373, p = .185; humour, H (2) = 1.23, p = .541. (Refer to Table 4.13)

Table 4.13

The Kruskal Wallis test of coping strategies by demographic variables (parents' monthly income) among UNIMAS undergraduate nursing students

Coping strategy	**Parents' monthly income**

	Median (IQR)			*H*	*df*	*p*
	RM1500 or below	**RM1501-RM5000**	**RM5000 or above**			
Self-Distraction	7 (1)	7 (1)	7 (1)	7.253	2	.027
Active coping	7.5 (1)	7 (1)	7 (2)	.669	2	.716
Behavioural Disengagement	6 (2)	6 (2)	6 (1)	2.106	2	.349
Denial	7 (3)	7 (3)	6.5 (3)	.031	2	.985
Use of emotional support	8 (3)	8 (2)	7 (2)	3.046	2	.218
Positive reframing	7 (2)	7 (1)	7 (2)	2.021	2	.364
Acceptance	8 (1)	7 (2)	7 (2)	2.374	2	.305
Self-Blame	6 (1)	6 (1)	6 (3)	.318	2	.853
Venting	5.5 (2)	4 (2)	5 (3)	6.123	2	.047
Use of instrumental support	7 (2)	7 (2)	6 (2)	1.997	2	.368
Planning	7 (2)	7 (2)	7 (3)	3.373	2	.185
Humour	6 (2)	6 (4)	6 (4)	1.230	2	.541

Note. *IQR*: Interquartile range; *H*: Kruskal–Wallis H statistic; *df*: degree of freedom; *p*: p-value.

4.6.9 Relationship between demographic variables (gender) and coping strategies

Mann-Whitney U Test revealed significant difference only in the self-distraction, male (*Mdn* = 7) and female (*Mdn* = 7), *U* (138) = 800, *p* = .007. Whilst, others showed no significant difference in active coping, male (*Mdn* = 7) and female (*Mdn* = 6), *U* (138) = 1197, *p* = .800; behavioural disengagement, male (*Mdn* = 6) and female (*Mdn* = 6), *U* (138) = 1000, *p* = .141; denial, male (*Mdn* = 8) and female (*Mdn* = 7), *U* (138) = 1023, *p* = .197; the use of emotional support, male (*Mdn* = 7) and female (*Mdn* = 8), *U* (138) = 926, *p* = .057; positive reframing, male (*Mdn* = 7) and female (*Mdn* = 7), *U* (138) = 1139, *p* = .544; acceptance, male (*Mdn* = 8) and female (*Mdn* = 7), *U* (138) = 1101, *p* = .403; self-blame, male (*Mdn* = 5) and female (*Mdn* = 6), *U* (138) = 1142, *p* = .557; venting, male (*Mdn* = 5)

and female (*Mdn* = 5), *U* (138) = 1072, *p* = .317; use of instrumental support, male (*Mdn* = 8) and female (*Mdn* = 7), *U* (138) = 959, *p* = .091; planning, male (*Mdn* = 7) and female (*Mdn* = 7), *U* (138) = 1159, *p* = .628 and humour, male (*Mdn* = 6) and female (*Mdn* = 6), *U* (138) = 1165, *p* = .657. (Refer Table 4.14)

Table 4.14
The Mann-Whitney U test of coping strategies by demographic variables (gender) among UNIMAS undergraduate nursing students

Coping Strategy	Gender				
	Median (*IQR*)		*U*	*Z*	*p*
	Male	Female			
Self-Distraction	7 (1)	7 (1)	800	-2.718	.007
Active coping	7 (2)	6 (1)	1197	-.253	.800
Behavioural Disengagement	6 (2)	6 (1)	1000	-1.473	.141
Denial	8 (3)	7 (3)	1023	-1.290	.197
Use of emotional support	7 (2)	8 (2)	926	-1.900	.057
Positive reframing	7 (2)	7 (2)	1139	-.607	.544
Acceptance	8 (1)	7 (2)	1101	-.836	.403
Self-Blame	5 (3)	6 (1)	1142	-.588	.557
Venting	5 (2)	5 (2)	1072	-1.001	.317
Use of instrumental support	8 (2)	7 (2)	959	-1.688	.091
Planning	7 (2)	7 (2)	1159	-.485	.628
Humour	6 (4)	6 (3)	1165	-.443	.657

Note. *IQR*: Interquartile range; *U*: Mann-Whitney U statistic; *p*: p-value; *z*: Z-score

4.6.10 Relationship between demographic variables (living in college) and coping strategies

Mann-Whitney U Test revealed a significant difference only in the self-blame, living in college (*Mdn* = 6) and non-living in college (*Mdn* = 4), *U* (138) = 222, *p* = .017. Whilst,

others showed no significant difference in self-distraction, living in college (*Mdn* = 7) and non-living in college (*Mdn* = 7), *U* (138) = 449, *p* = .891; active coping, living in college (*Mdn* = 7) and non-living in college (*Mdn* = 8), *U* (138) = 417, *p* = .653; behavioural disengagement, living in college (*Mdn* = 6) and non-living in college (*Mdn* = 6), *U* (138) = 449, *p* = .896; denial, living in college (*Mdn* = 7) and non-living in college (*Mdn* = 6), *U* (138) = 392, *p* = .490; the use of emotional support, living in college (*Mdn* = 8) and non-living in college (*Mdn* = 7), *U* (138) = 313, *p* = .139; positive reframing, living in college (*Mdn* = 7) and non-living in college (*Mdn* = 7), *U* (138) = 407, *p* = .587; acceptance, living in college (*Mdn* = 7) and non-living in college (*Mdn* = 7), *U* (138) = 341, *p* = .230; venting, living in college (*Mdn* = 5) and non-living in college (*Mdn* = 5), *U* (138) = 397, *p* = .520; use of instrumental support, living in college (*Mdn* = 7) and non-living in college (*Mdn* = 7), *U* (138) = 353, *p* = .282; planning, living in college (*Mdn* = 7) and non-living in college (*Mdn* = 6), *U* (138) = 361, *p* = .988 and humour, living in college (*Mdn* = 6) and non-living in college (*Mdn* = 7), *U* (138) = 427, *p* = .728. (Refer to Table 4.15)

Table 4.15
The Mann-Whitney U test of coping strategies by demographic variables (living in college) among UNIMAS undergraduate nursing students

Coping Strategy	**Living in college**				
	Median (*IQR*)		***U***	***Z***	***p***
	Yes	**No**			
Self-Distraction	7 (1)	7 (2)	449	-.137	.891
Active coping	7 (2)	8 (2)	417	-.450	.653
Behavioural Disengagement	6 (2)	6 (2)	449	-.131	.896
Denial	7 (3)	6 (3)	392	-.690	.490
Use of emotional support	8 (2)	7 (2)	313	-1.481	.139
Positive reframing	7 (2)	7 (2)	407	-.544	.587
Acceptance	7 (2)	7 (2)	341	-1.200	.230

Self-blame	6 (1)	4 (3)	222	-2.382	.017
Venting	5 (2)	5 (2)	397	-.643	.520
Use of instrumental support	7 (2)	7 (3)	353	-1.076	.282
Planning	7 (2)	6 (3)	361	-.015	.988
Humour	6 (3)	7 (3)	427	-.348	.728

Note. *IQR*: Interquartile range; *U*: Mann-Whitney U statistic; *p*: p-value; *z*: Z-score

Chapter 5: DISCUSSION

5.0 Introduction

This chapter discussed the findings on the factors of stress, coping strategies and the relationships between demographic profile, factors of stress and coping strategies among UNIMAS Undergraduate nursing students. Summary of findings, implications, limitations of this study and conclusion would be presented too

5.1 Factors among undergraduate nursing students in UNIMAS

This study discovered that students in UNIMAS often experience stress due to academic factors (45.3%), followed by clinical factors (41.7%) and personal issues (26.6%). Nursing students commonly endured numerous forms of pressures, which could have detrimental impacts on their academic achievement, mental and bodily health. This finding was similar as a study done among nursing students in King Abdulaziz University (Alghamdi et al., 2019). A study carried out among private universities nursing students of Pakistan revealed academic matters contributed highest stress level, personal issues and clinical factors are in moderate level, followed by environmental factors (Afzal et al., 2016).

In addition, the most common stressor perceived by students was the stress of failing an examination (M = 4.27, SD = 0.71), as students were worried about getting bad grades and the pressure of clinical practice. These results aligned with previous research conducted by Alghamdi et al. (2019) which reported that grades or examination is the main stressors among undergraduate nursing students in King Abdulaziz University (M = 3.77, SD = 1.12). However, the result was in contrast with study done by Nebhinani et al. (2020) which found out the main stressors was the expectation of others professional toward nursing (M = 3.1, SD = 1.3). This could be due to nurses are expected to do important decisions, handle emergencies and gave compassionate care. Any undesired error could have severe

consequences. As a results, society in Western Rajasthan put a high expectation on nursing students to demonstrate a high level of accountability, emotional maturity and competence in order to prepare the students to face the real world.

Besides, the fear of making mistakes when providing care (*M* = 4.19, *SD* = 0.711) was the second highest cause of stress. The result was consistent with research done by Dogham et al. (2024) where 16.7% of nursing students at Alexandria Nursing College also experienced high stress when taking care of patients. A study conducted by Mohamed et al. (2024) found that 72.6% nursing students also fear of doing wrong during practicum such as making medication error. This was because most students were fear of being judged by staff nurse, peers or clinical instructors if they make mistakes. This fear would affect their willingness to ask questions or admit uncertainty.

Moreover, the least stressful sources of stress were due to too many responsibilities in others such as position in UNIMED (*M* = 2.21, *SD* = 1.151) as students could still see the benefits of participating such as strengthening one's sense of self, boosting confidence and fostering personal development. In congruence with the above findings, Alghamdi et al. (2019) found that students' personal health problem was the least stressful factors (*M* = 2.23, *SD* = 1.34). Another research had reported stressor due to relationship with their parents were found to be relatively mild compare to other factors among nursing students in Western Rajasthan (Nebhinani et al., 2020).

5.2 Coping strategies among undergraduate nursing students in UNIMAS

In this study, the most frequent used coping strategy was the use of emotional support, positive reframing and acceptance. These results align with previous research conducted by Liu et al. (2022) which reported nursing students in a hospital in Zhejiang Province commonly would use positive reframing and use of emotional support when they were

stressed out. By viewing situations from a different perspective and thinking more optimistically, it encouraged finding something meaningful and valuable in the experience, instead of focusing on what went wrong. Getting emotional support from family and friends was also an effective way to release stress. According to Kuncharin (2016)'s study, students (86%) reported using social support strategies to cope with academic performance issues, such as seeking emotional support from peers, expressing emotions and receiving guidance from professors. A study completed in Western Rajasthan done by Nebhinani proved that most students in Western Rajasthan were using positive coping mechanisms like positive reframing, active coping and planning more than negative coping mechanisms (Nebhinani et al., 2020).

However, these findings were in contradiction with Yehia et al. (2016)'s findings at AL- AL-Zaytoonah University of Jordan. Venting, self-distraction, and denial were the most commonly employed coping skills. This could be understand as these strategies could temporarily reduce emotional discomfort or avoid confronting difficult situations. Ickes et al. (2015) concluded that eat, exercise and sleep were the commonly used coping skills among all students in the University of Kentucky.

5.3 Relationship between demographic profile and factors of stress

There was no significant relationship between demographic profile (residency, parents' monthly income and gender) and factors of stress (academic factors, clinical matters and personal issues) in this study. Regarding residency, Phu et al. (2024)'s findings proved that the stress rate between students at Tra Vinh University who lived in their home was 2.34 times higher than those who live in college, but there was no statistically significant difference. A similar result was found among nursing students at Prince Sattam bin Abdulaziz University (Mohamed et al., 2024).

Moreover, in terms of gender, our findings was contradicted with Phu's findings as they found that gender had significant relationship with stress level. The findings of the research was male students had a higher stress level compared to female students (Phu et al., 2024). Another study conducted at University of Health and Allied Health Sciences, Lo found that male students were commonly having lower stress rate than female (Lo, 2017). This could be due to biological factors among female such as hormonal fluctuations which may significantly cause emotional exhaustion among them (Costa et al., 2021).

In this study, there was a significant relationship ($p < .05$) between year of study and clinical matters as well as year of study and personal issues. This findings were consistent with a qualitative study done by Lavoie-Tremblay which they compared different stressor among undergraduate nursing students across all years (Lavoie-Tremblay et al., 2021). Year 2 students revealed that they had less time for their own lives as they progressed from year 1 to year 2. In addition, since they became year 2 students, their stress due to clinical had increase as the expectations from clinical instructors was increased. They were not allowed to make minor mistakes such as medication error. However, year 3 students reported feeling less stress on clinical matters because the tension was more tied to their personal issues such as deciding whether to continue studying after graduation and looking for job opportunity.

Furthermore, the results of this study differed from those reported by Nebhinani as they found that interest in nursing have significant association with level of stress (Nebhinani et al., 2020). Similar to Liu's study which found that those who choose nursing voluntary had less stress compared to those who join involuntary (Liu et al., 2022). According to some research, nursing students who willingly selected their profession were likely to possess a stronger sense of professional identity (Leng et al., 2019). They tend to be more driven to

acquire knowledge and integrate into the clinical environment more efficiently, resulting in lower stress levels during their clinical posting.

5.4 Relationship between demographic profile and coping strategies

In terms of relationship between demographic profile and coping strategies, the current study found that there was no significant difference between year of study and coping strategies. In line with the previous findings, other studies had also revealed that there was no significant association between year of study and coping mechanisms ($p > 0.05$) (Aung & Ail, 2025).

Moreover, the current research findings revealed no significant difference in parent's monthly income and all coping techniques except self-distraction and venting among undergraduate nursing students in UNIMAS. We found a positive correlation among parent's monthly income and coping mechanism such as self-distraction as well as venting. Higher-income households might have easier access to coping tools and more emotional flexibility, which could explain the positive relationship between parental income and coping mechanisms like self-distraction and venting. These people frequently had greater access to leisure-based distractions such as shopping and travelling, and they might be raised in settings that encourage emotional expression, which motivated them to employ such techniques.

In terms of gender, self-distraction showed a significant difference although other coping methods did not. There was a negative correlation between gender and self-distraction, with males reporting greater use of self-distraction as a coping mechanism. This findings aligns with previous research indicating that male often adapt avoidant coping mechanism due to social norms discouraging emotional expression (Zeng, 2025). Unlike the findings of our research, another study conducted at a nursing school in Manila found a weak

negative association between gender and problem-focused strategies (Espulgar et al., 2024). This research showed that female students, might be less likely to use problem-focused coping techniques. They might view problem-solving skills as less effective for their specific situations, or they might feel less empowered to take direct action against stressors. These findings align with another research, which indicated that female nursing students were more likely to engage in emotion-focused coping, influenced by cultural expectations and gender norms that promote emotional expression rather than problem solving (Johnston & Fox, 2020).

Same goes to living in college, there was significant negative correlation with self-blame, but no significant difference in other coping techniques. This indicated that students who live in college are less likely to use self-blame compared with students who live at home. This could be attributed to enhance social support, shared stress experiences, and better access to coping resources in the college, which helps protect from internalising stress through self-critical coping strategies (Graham et al., 2018).

Interestingly, our study was contradicted with Nebhinani's findings as they found out there was a significant relationship between interests in nursing with coping strategies. Those who had interest in nursing prompt to use positive coping mechanism than students who did not have interest in nursing (Nebhinani et al., 2020). Another study conducted by Shiferaw et al. at 2015 found a significant correlation between responsibility, number of family members with student's coping mechanisms (Shiferaw et al., 2015).

5.5 Limitation

First of all, It did not represent other healthcare educational institutes or universities in Malaysia since this study would only involve UNIMAS Nursing undergraduate students. Thus, it had limited generalizability. In addition, there was a time constraint in conducting

the study as the course runs for a short period and was busy with theory classes and practicum. Other than that, there were financial constraints. Lastly, participants might not be accurate in reporting their distress, which depending upon the understanding and honesty of the participants, would also be subjected to recall bias.

5.6 Conclusion

The aim of this study was to identify the factors of stress, coping strategies, and the relationship of demographic profile, stress, and coping strategies among undergraduate nursing students at UNIMAS. This study discovered that undergraduate nursing students in UNIMAS often experience issues due to academic factors (45.3%), followed by clinical factors (41.7%) and personal issues (26.6%). The common used coping strategies were the use of emotional support, positive reframing and acceptance. In this study, there was no significant relationship between demographic profile (residency, parents' monthly income and gender) and factors of stress (academic factors, clinical matters and personal issues). However, there was a significant relationship ($p < .05$) between year of study and clinical matters as well as year of study and personal issues. Furthermore, the current study found that there was no significant difference between year of study and coping strategies while parents' monthly income, gender and living in college has significant correlation with coping mechanisms. The study's findings will assist lecturers, researchers and students in better understanding the stressors and develop further stress-reduction measures.

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APPENDICES

APPENDIX A: ETHICAL COVER LETTER

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

The Chairman,
Medical Research Ethics Committee,
Faculty of Medicine and Health
Sciences,Universiti Malaysia Sarawak,
94300 Kota Samarahan,
Sarawak. 15th December 2024

Professor/Associate Professor/Dr/Sir/Madam,

REQUEST FOR APPROVAL TO CONDUCT RESEARCH PROJECT

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

Full name: Emelyn Yek Yii Nyn

Matrix number: 79311

IC No.: 020410-13-1328

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

Research title: Factors of stress and coping strategies among undergraduate nursing students in UNIMAS.

Supervisor's name: Dr Ong Mei Fong

Email address: mfong@unimas.my

Supervisor's HP number: 016-937 7562

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

Thank you.

Yours sincerely,

(EMELYN YEK YII NYNN)

APPENDIX B: PARTICIPANT INFORMATION SHEET

UNIVERSITI MALAYSIA SARAWAK

PARTICIPANT INFORMATION SHEET/ *MAKLUMAT KAJIAN PESERTA*

1. Title of the study/ *Tajuk kajian*	:	**Factors of stress and coping strategies among undergraduate nursing students in UNIMAS.**
2. Main Researcher/ *Penyelidik utama*	:	**Emelyn Yek Yii Nynn**
3. Supervisor/ *Penyelia*	:	**a) Course coordinator: Shalin Lee Wan Fei** **b) Main research supervisor: Dr Ong Mei Fong**
4. Institution/ *Institut*	:	**Department of Nursing** **Faculty of Medicine & Health Sciences** **Universiti Malaysia Sarawak**
5. Name of sponsor/ *Nama Penaja*	:	**No external funding/ *Tiada penaja luar***

6. Introduction:

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

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

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

7. What is the purpose of the study?

The primary aim of this study is to identify the stress level among undergraduate nursing students in UNIMAS. Moreover, this study wishes to identify the stress factors among undergraduate nursing students in UNIMAS. Additionally, this study aims to investigate the coping strategies among undergraduate nursing students at UNIMAS. Lastly, this study examines the relationship between demographic profile, stress and coping strategies among undergraduate nursing students at UNIMAS. This research is necessary to improve the understanding of nursing students. This research will be conducted for 6 months (25/01/2025 till 30/6/2025). The expected number of participants is 143 individuals.

8. Who can participate in this study?

The inclusion criteria are undergraduate nursing students from year 2 to year 4 who have already undergone the clinical and theoretical components of the study program. Conversely, year 1 undergraduate nursing students are excluded as they have no clinical experience. The post-registration and postgraduate nursing students are excluded because this study aims to discover the stressors and coping strategies among undergraduate nursing students. Their stressors and coping strategies may be different compared to other undergraduate nursing students as they already have years of working experience in the hospital so they are more adaptable in coping. The participants who already joined the pilot study or those who are not willing to join this study will be excluded.

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

It is important that you answer all of the questions asked by the study staff honestly and completely which will take about 15 minutes of your time. You will be given a printed questionnaire form before class starts in the faculty. The questionnaire consists of 3 sections in Section A includes participants' demographic profiles. Section B focused on knowing the participant's stressors regarding academic factors, clinical factors, interface worries and personal factors. Section C focused on coping strategies among participants.

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

Participation to this study will not affect your treatment, and the risk is minimal. You are free to decline to answer any questions you feel uncomfortable with.

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

There may or may not be any benefits to you. However, the information obtained from this study will help nursing students increase their self-awareness by reflecting on their stress levels and coping mechanisms. Mental health and general well-being can be enhanced by being aware of how stress impacts one and knowing which coping mechanisms are most effective. Furthermore, this study can help nursing institutions to understand and reduce the main sources of stress for nursing students. Additionally, the information gained can help nursing research develop better-coping strategies and interventions to reduce stress among students.

12. Who is funding the research?

This study does not receive any external funding. You will not be paid for participating in this study.

13. Will my medical information be kept private?

All your information obtained in this study will be kept and handled in a confidential manner, in accordance with applicable laws and/or regulations. When publishing or presenting the study results, your identity will not be revealed without your expressed consent. Individuals involved in this study, qualified monitors and auditors, and governmental or regulatory authorities may inspect the study data, where appropriate and necessary.

14. Who should I call if I have questions?

If you have any questions about the study or if you think you have a study related injury and you want information about this study, please contact the study doctor, Emelyn Yek Yii Nynn at telephone number 019-778 2246 or through the email address: 79311@siswa.unimas.my.

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

APPENDIX C: INFORMED CONSENT FORM

Title of Study: Factors of stress and coping strategies among undergraduate nursing students in UNIMAS

By signing below I confirm the following:

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

Subject:

Signature:		I/C number:	
Name:		Date:	

Investigator conducting informed consent:

Signature:		I/C number:	
Name:		Date:	

Impartial witness:

Signature:		I/C number:	
Name:		Date:	

APPENDIX D: QUESTIONNAIRE

Title: Sources of Stress and coping strategies among Undergraduate Nursing Students at UNIMAS

Section A: Socio-demographic data

The research title for this study is sources of stress and coping strategies among undergraduate nursing students at UNIMAS. All the data will be kept confidential.

General instruction:

Kindly complete the information and respond appropriately to the question below. Please answer the relevant information in the blanks or tick (/) the correct answer.

1) Sex:

☐ Male ☐ Female

2) Year of Study:

☐ Year 1 ☐ Year 2 ☐ Year 3 ☐ Year 4

3) Living in college under UNIMAS (include Kolej Rafflesia):

☐ Yes ☐ No

4) Monthly income:

☐ RM300 or below ☐ RM500-1000 ☐ RM1000-1500

☐ RM1500 or above ☐ Do not know

Section B: Source of stress among undergraduate nursing students in UNIMAS

General instruction: Please complete the information and respond appropriately to the question below. Please tick (/) the relevant answer. The sources of stress are divided into three types: academic stress, clinical stress, and others.

1) How do you perceived your stress due to factors below?

No	Stressors	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	Academic factors					
2.	Clinical matters					
3.	Personal issues					

2) Stressor related to academic

No	Stressors	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	Afraid of examination					
2.	Afraid of failing the exam					
3.	Too many assignments					
4.	Too many classes					
5.	Lack of clear feedback and guidance on assignments					
6.	Poor guidance from the lecturers					
7.	Difficulty assessing office hour					
8.	Lack of proper space for students to do revisions or discussions					

9.	Poor time management to balance between study and leisure time					

3) Stressors related to clinical

No	Stressors	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	Inability to maintain the balance between studying and clinical posting					
2.	A gap between practices learnt and actual practices					
3.	Fear of making mistakes during caring for patients					
4.	Lack of confidence to perform procedures					
5.	The staffs are unfriendly or unhelpful					
6.	Clinical instructors are unfriendly or unhelpful					
7.	Poor relationship with clinical instructors in clinical posting					

8.	Poor relationship with peers in clinical posting					

4) Stressors related to other issues

No	Stressors	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	Financial problems					
2.	Health problems					
3.	Have less holiday compared to others' course					
4.	Challenges in transportation to faculty					
5.	Toxicity environment in the class					
6.	Too much responsibility in others					

Section C: Coping strategy toward stress among undergraduate nursing students in UNIMAS

General instruction: Please complete the information and respond appropriately to the question below. Please tick (/) the relevant answer.

No	Coping strategy	Not at all	Little Bit	Medium Amount	Doing a lot

1.	To distract myself, I've been turning to work or other pursuits				
2.	To reduce my stress, I think less and distract myself by doing other activities (Eg. exercise, listening to music, shopping)				
3.	I take action to reduce the worseness of the situation				
4.	I refuse to believe something that has already happened (Eg. Failing an exam)				
5.	I always can get emotional support from my family members				
6.	I always can get emotional support from friends				
7.	I keep on saying "It is not real" when something happens				
8.	In an attempt to cope with it, I've been giving up.				
9.	I will express my negative emotions				
10.	I always try to help myself by seeking advice from others				

11.	I will think positively when something happen.				
12.	I've been trying to think of a plan of action.				
13.	Although I am in a bad situation, I will make fun of it				
14.	I will accept the reality that things already happen and are unchangeable				
15.	I will blame myself when something happens				
16.	I've been focussing on taking action to improve my current circumstances.				
17.	I have been giving up the effort to cope.				
18.	I've been expressing my negative emotions through words.				
19.	When I do not know how to solve a problem, I will seek for advice from others.				
20.	I've been making an effort to view it differently and more optimistically.				

21.	Although I am in a bad situation, I will make jokes of it.				
22.	I have been adjusting to it.				
23.	I have been self-critiquing.				
24.	I've been thinking hard about my next steps.				

APPENDIX E: PERMISSION TO USE QUESTIONNAIRE

Permission of questionnaires for Section B

emelyn nynn <emelynyyn@gmail.com> Thu, 14 Nov 2024, 12:12

to masambukob

Good morning Mr Masumbuko Baluwa. My name is Emelyn Yek Yii Nynn, a final year Bachelor of Nursing Student at Universiti Malaysia Sarawak in Malaysia and will be conducting research entitled "Sources of stress and coping strategy among undergraduate nursing students in UNIMAS" as my final year project. I am writing to ask for written permission to modify the questionnaire in " Stress and Coping Strategies Among Malawian Undergraduate Nursing Students". I would like to ask for permission to modify the questionnaire about "means for subcategories of stress" and "stressors related to lecturers" in this journal.

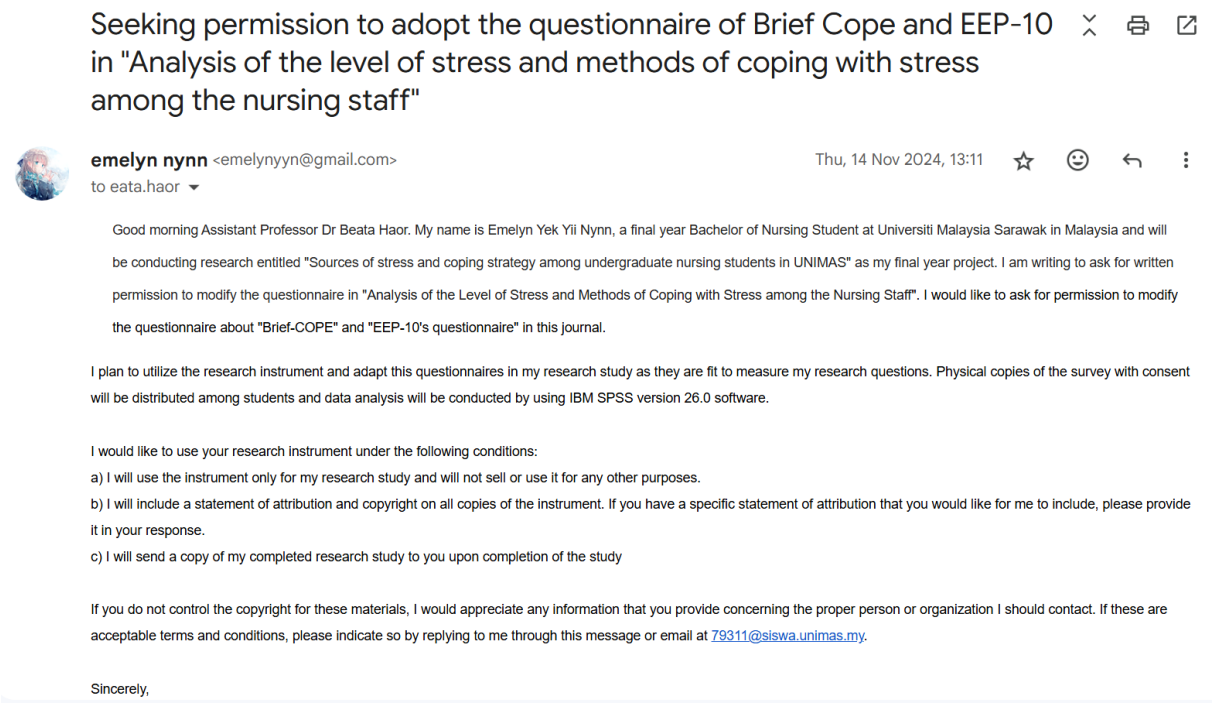
I plan to utilize the research instrument and adapt this questionnaires in my research study as they are fit to measure my research questions. Physical copies of the survey with consent will be distributed among students and data analysis will be conducted by using IBM SPSS version 26.0 software.

I would like to use your research instrument under the following conditions:
a) I will use the instrument only for my research study and will not sell or use it for any other purposes.
b) I will include a statement of attribution and copyright on all copies of the instrument. If you have a specific statement of attribution that you would like for me to include, please provide it in your response.
c) I will send a copy of my completed research study to you upon completiion of the study

If you do not control the copyright for these materials, I would appreciate any information that you provide concerning the proper person or organization I should contact. If these are acceptable terms and condition, please indicate so by replying to me through this message or email at 79311@siswa.unimas.my.

Sincerely,
Emelyn Yek Yii Nynn

Permission of questionnaires for Section C



Seeking permission to adopt the questionnaire of Brief Cope and EEP-10 in "Analysis of the level of stress and methods of coping with stress among the nursing staff"

emelyn nynn <emelynyyn@gmail.com> Thu, 14 Nov 2024, 13:11

to eata.haor

Good morning Assistant Professor Dr Beata Haor. My name is Emelyn Yek Yii Nynn, a final year Bachelor of Nursing Student at Universiti Malaysia Sarawak in Malaysia and will be conducting research entitled "Sources of stress and coping strategy among undergraduate nursing students in UNIMAS" as my final year project. I am writing to ask for written permission to modify the questionnaire in "Analysis of the Level of Stress and Methods of Coping with Stress among the Nursing Staff". I would like to ask for permission to modify the questionnaire about "Brief-COPE" and "EEP-10's questionnaire" in this journal.

I plan to utilize the research instrument and adapt this questionnaires in my research study as they are fit to measure my research questions. Physical copies of the survey with consent will be distributed among students and data analysis will be conducted by using IBM SPSS version 26.0 software.

I would like to use your research instrument under the following conditions:
a) I will use the instrument only for my research study and will not sell or use it for any other purposes.
b) I will include a statement of attribution and copyright on all copies of the instrument. If you have a specific statement of attribution that you would like for me to include, please provide it in your response.
c) I will send a copy of my completed research study to you upon completion of the study

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Sincerely,

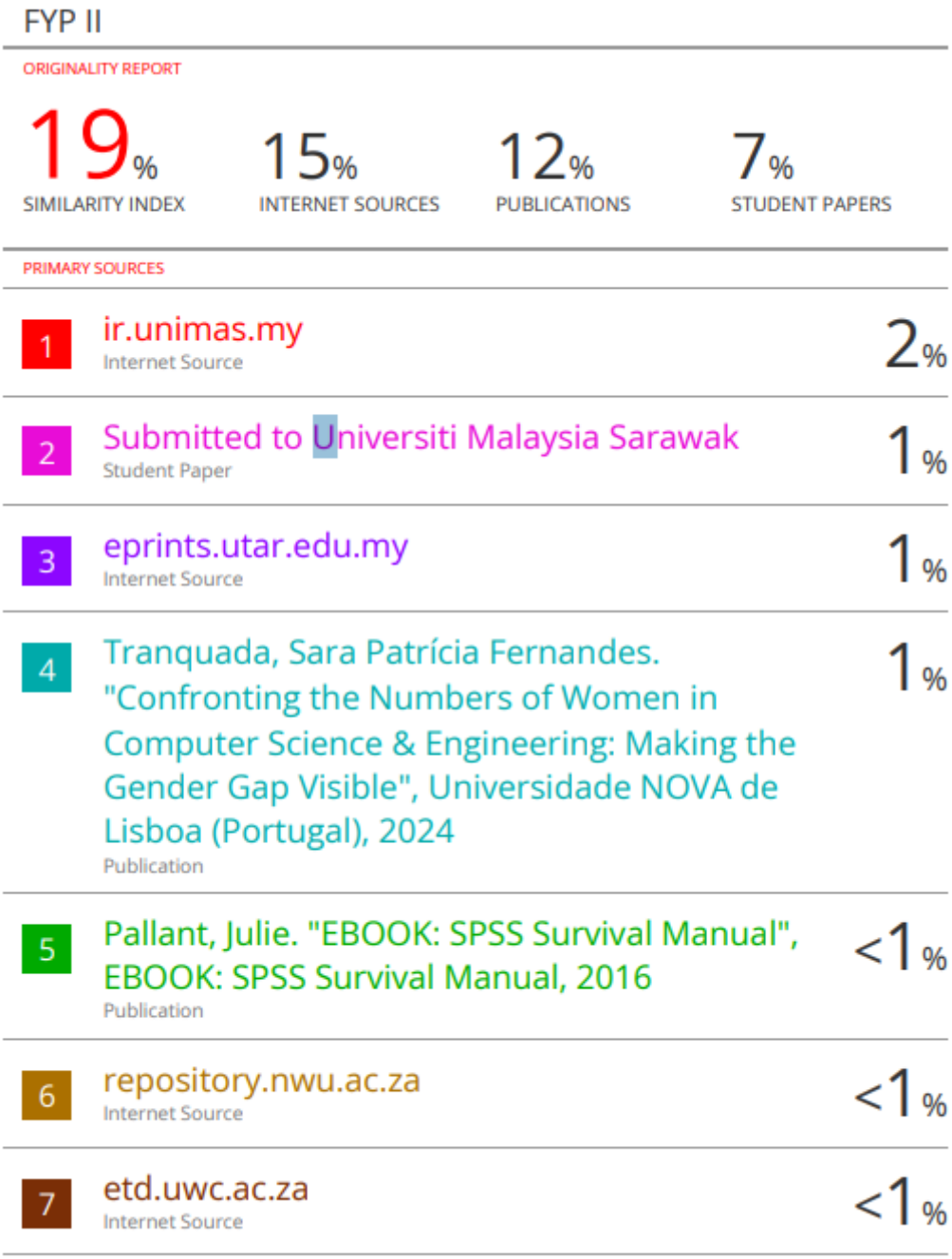
APPENDIX F: GANTT CHART

Activity	Month									
	2024			2025						
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY
Determination of research title										
Determination of supervisor										
Literature Review										
Meeting with supervisor										
Submit oral defence slides first draft										
Presentation Research Proposal Defence										
Submission: Letter for ethical approval										
Submission: Written proposal FYP 1										
Data collection										
Data Analysis										
Writing up report										
Submit poster presentation draft checking										
Poster presentation										
Corrections										
FYP II: Final Submission										
Marking by Examiners										

APPENDIX G: PROPOSED BUDJET

ITEMS	AMOUNT
Internet data plan (Monthly) x 9	RM135
SPSS Software	RM 5
Printing and binding FYP report	RM 50
TOTAL	**RM 190**

APPENDIX H: TURNITIN REPORT



FYP II

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