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BACHELOR OF NURSING WITH HONOURS

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Course	:	**MDJ 4664 Final Year Project II**
Course Coordinator	:	**Miss Feryante Rintika Belansai**
Research title	:	**Prevalence of Dysmenorrhea and Its Impact on Academic Performance among Female Nursing Students in UNIMAS**
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DECLARATION

I hereby declare that this Final Year Project research entitled "Prevalence of Dysmenorrhea and Its Impact on Academic Performance among Female Nursing Students in UNIMAS" is an original work done by me and has been carried out in the Faculty of Medicine and Health Sciences (FMHS), Universiti Malaysia Sarawak (UNIMAS) under supervision from October 2024 until June 2025. I certify that all citations and references have been properly acknowledged in the text. I further declare that this research study has not previously been submitted for any assessed qualifications.

Signature,

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Thank you.

ABSTRACT

Dysmenorrhea, a prevalent gynecological condition among young women, has the potential to hinder academic performance, particularly among nursing students who face rigorous academic and clinical demands. This study aimed to determine the prevalence and severity of dysmenorrhea, its impact on academic performance, and the relationship between pain intensity and academic disruption among female nursing students at Universiti Malaysia Sarawak (UNIMAS). A descriptive cross-sectional study was conducted among 145 participants, who were selected using simple random sampling. Data were collected through a self-administered questionnaire and analyzed using the Spearman correlation test in SPSS Version 27 The findings revealed that 95.2% of participants experienced dysmenorrhea, with moderate pain being most commonly reported (46.4%). The total impact score had a median of 18.00 (IQR = 16.25), indicating a notable academic impact, including reduced concentration (52.4%), limited class participation (50.7%), disruption in studying or homework (50.9%), difficulty performing well in an exam and absenteeism (7.4%). Spearman's correlation showed a statistically significant positive relationship between dysmenorrhea severity and its academic impact, $r_s(138) = .568$, $p < .001$. The results highlight the need for greater awareness and institutional support for students experiencing menstrual pain to ensure optimal academic performance. Early interventions and academic flexibility may help alleviate the challenges faced by students with dysmenorrhea.

Keywords: dysmenorrhea, academic performance, nursing students, menstrual pain, prevalence

ABSTRAK

Dismenorea, satu keadaan sakit puan yang lazim dalam kalangan wanita muda, berpotensi menjejaskan prestasi akademik, terutamanya dalam kalangan pelajar kejururawatan yang menghadapi tuntutan akademik dan klinikal yang tinggi. Kajian ini bertujuan untuk menentukan kadar kejadian dan tahap keterukan dismenorea, kesannya terhadap prestasi akademik, serta hubungan antara tahap kesakitan dan gangguan akademik dalam kalangan pelajar kejururawatan perempuan di Universiti Malaysia Sarawak (UNIMAS). Satu kajian keratan rentas deskriptif telah dijalankan melibatkan 145 orang peserta yang dipilih melalui persampelan rawak mudah. Data dikumpul melalui soal selidik yang dijawab sendiri dan dianalisis menggunakan ujian korelasi Spearman dalam SPSS Versi 27. Dapatan menunjukkan bahawa 95.2% peserta mengalami dismenorea, dengan kesakitan sederhana paling kerap dilaporkan (46.4%). Skor kesan keseluruhan mempunyai nilai median sebanyak 18.00 (IQR = 16.25), menunjukkan kesan akademik yang ketara, termasuk kurang tumpuan (52.4%), penglibatan kelas yang terhad (50.7%), gangguan dalam belajar atau kerja rumah (50.9%), kesukaran untuk cemerlang dalam peperiksaan serta kehadiran kelas yang terganggu (7.4%). Korelasi Spearman menunjukkan hubungan positif yang signifikan secara statistik antara keterukan dismenorea dan kesan akademiknya, $r_s(138) = .568$, $p < .001$. *Keputusan ini menyerlahkan keperluan untuk meningkatkan kesedaran dan sokongan institusi bagi pelajar yang mengalami kesakitan haid agar dapat mengekalkan prestasi akademik yang optimum. Intervensi awal dan fleksibiliti akademik mungkin dapat membantu mengurangkan cabaran yang dihadapi oleh pelajar yang mengalami dismenorea.*

Kata kunci: dismenorea, prestasi akademik, pelajar kejururawatan, sakit haid, kadar kejadian

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LIST OF ABBREVIATIONS

FMHS	Faculty of Medicine and Health Sciences
MREC	Medical Research Ethics Committee
NRS	Numerical Rating Scale
UNIMAS	Universiti Malaysia Sarawak
SPSS	Statistical Package for the Social Sciences
AP	Academic Performance

CHAPTER 1

INTRODUCTION

1.0 Introduction

The purpose of this study was to determine the prevalence and impact of dysmenorrhea on academic performance among female nursing students in UNIMAS. This chapter consists of nine subsections: the background of the study, followed by the problem statement, research questions, aims of the study, and research objectives. In addition, hypotheses, the significance of the study, and the definitions of terms are also highlighted in this chapter. A summary of this chapter is also presented in the last section.

1.1 Background of the Study

Dysmenorrhea, or pain during the menstrual cycle, is a gynaecological condition that affects 50% to 90% of adolescent and reproductive-age women (McKenna & Fogleman, 2021). The prevalence of dysmenorrhea in Malaysia ranges from 60% to 70% (Mohammad Bakro et al., 2023; Azli et al., 2023). This suggests that menstrual pain is quite common, affecting a large portion. Furthermore, considering university students are the most commonly affected age group, dysmenorrhea may influence academic performance (Mohammad Bakro et al., 2023). Particularly, dysmenorrhea is prevalent among female nursing students, largely due to the demographic composition of the profession itself, which comprises predominantly young women (Wuni et al., 2023).

The menstrual pain is typically experienced in the lower abdomen and sometimes can radiate to the back and inner thighs (Gutman et al., 2022). Dysmenorrhea is frequently

accompanied by symptoms including headache, nausea, vomiting, and diarrhea (Nagy et al., 2023). However, the severity of pain varies among individuals, as menstrual pain can be unpredictable, occurring before or during menstruation and sometimes worsening when the cycle is delayed (Abreu-Sánchez et al., 2020). Therefore, some people may have severe pain during menstruation that interferes with their daily activities, while others may experience only mild or no discomfort at all (Cleveland Clinic, 2024).

Despite the prevalence, dysmenorrhea negatively impacts the quality of life, daily living, work productivity, and academic activities (Itani et al., 2022). For instance, in Malaysia, dysmenorrhea is associated with decreased concentration, increased absenteeism from work or school, inefficiency, limitations, or secondary emotional problems that result in disengagement (Mohammad Bakro et al., 2023). In the academic component, the physical discomfort and pain caused by dysmenorrhea were likely to cause reduced concentration, sleepiness during lectures, and reduced physical activities in college (Dahlawi et al., 2023).

Besides that, dysmenorrhea is found to affect the inability to study and complete assignments, causing a lack of motivation and difficulty in performing well in an exam (Dube et al., 2024). Meanwhile, severe dysmenorrhea is associated with absenteeism in class (Dube et al., 2024). As a result, these aspects may cause students to find it difficult to keep up with their studies, which could lead to reduced learning opportunities and a negative impact on overall academic performance. Therefore, it is essential to assess how dysmenorrhea affects academic performance, thus enabling the appropriate support approaches for the affected students.

1.2 Problem Statement

Generally, dysmenorrhea is underestimated as a normal part of the menstrual cycle, where it is often treated poorly or even disregarded despite its impact on daily activities (Bianchi et al., 2022). Although dysmenorrhea is not a life-threatening condition, dysmenorrhea negatively impacts the physical and psychological well-being of women and hinders their ability to participate in school, work, and social events (Cherenack et al., 2023). Furthermore, dysmenorrhea has been linked to decreased academic performance among students (Horvat et al., 2023).

Female nursing students may be particularly vulnerable to its impact due to the demanding nature of their academic schedules, which include a limited break period and long studying hours for coursework (Lavoie-Trembley et al., 2021). Beyond that, the nursing students must go for clinical placement as a component of the nursing program to allow them to implement the theory and practice (Cooper et al., 2020). Particularly, female nursing students who have dysmenorrhea may hinder their ability to perform well due to the demands of the academic and clinical components. The discomfort and pain, especially during high-intensity days, can indirectly interfere with the learning activities or sessions and lead to low academic performance. However, little attention has been given to how dysmenorrhea impacts students' academic performance (Dube et al., 2024).

Although dysmenorrhea and its impacts are widely recognized, there is limited study on the prevalence and its impact on academic performance among female nursing students in Malaysia. Therefore, it is important to examine the prevalence and study the relationship between dysmenorrhea and academic performance among nursing students to provide insight into approaches to help them minimize the disturbance resulting from dysmenorrhea during learning sessions in a class or clinical setting. Thus, this study is conducted to fill the

gap by assessing the prevalence of dysmenorrhea and its impact on academic performance among female nursing students in UNIMAS.

1.3 Research Questions

The research questions of this study are:

i. What is the prevalence and severity of dysmenorrhea among female nursing students in UNIMAS?
ii. How does dysmenorrhea impact academic performance among female nursing students in UNIMAS?
iii. Is there any relationship between the severity of dysmenorrhea and its impact on academic performance among female nursing students in UNIMAS?

1.4 Aim of the study

The aim of this study is to determine the prevalence, severity, and impact of dysmenorrhea on academic performance among female nursing students in UNIMAS. Furthermore, this study aims to examine the relationship between the severity of dysmenorrhea and its impact on academic performance among female nursing students in UNIMAS.

1.5 Specific Research Objectives

The research objectives of this study were:

i. To determine the prevalence and severity of dysmenorrhea among female nursing students in UNIMAS.
ii. To identify the impact of dysmenorrhea on the academic performance of female nursing students in UNIMAS.

iii. To examine the relationship between the severity of dysmenorrhea and its impact on academic performance among female nursing students in UNIMAS.

1.6 Hypotheses

i. Null hypothesis: There is no significant relationship between the severity of dysmenorrhea and its impact on academic performance among female nursing students in UNIMAS.
ii. Alternative hypothesis: There is a significant relationship between the severity of dysmenorrhea and its impact on academic performance among female nursing students in UNIMAS.

1.7 Significance of Study

This study holds significance as it provides insights into the prevalence of dysmenorrhea among female nursing students in UNIMAS with dysmenorrhea. Recognizing this common condition might help educators and institutions to have a better understanding of supportive measures for students who are dealing with dysmenorrhea. It is also crucial to raise awareness within institutions about the issues confronted by students that may be sufficiently addressed in the current educational setting.

Furthermore, identifying the impacts of dysmenorrhea on academic performance will highlight its effect on nursing education, and this may result in establishing measures to mitigate its impact, such as allowing flexibility on days when pain is known to be high. This is to ensure nursing students recover from extreme pain. Beyond that, institutions or educators can share the correct information on effective coping strategies and resources for students. This can help nursing students maintain their academic performance and take responsibility for their health.

1.8 Definitions of the Terms

Table 1.1

Definition of the terms

Variables	Conceptual Definition	Operational Definition
Demography data	Demographic data refers to socioeconomic information expressed statistically (Hayes, 2024).	In this study, demographic data are: i. Year of study: Year 1, Year 2, Year 3, and Year 4 female nursing students as the base of a measurement ii. Ethnic group: Malay, Iban, Bidayuh, Indian, Chinese, others iii. Religion: Islam, Christian, Hindu, Buddha, and others
Prevalence of dysmenorrhea	Prevalence is the percentage of people with a particular condition at a specific time (Tenny & Hoffman, 2023). Dysmenorrhea is pain before or during the menstruation, which is usually located in the lower abdomen, thighs, or back and generally lasts for 1-3 days (Gutman et al., 2022). Dysmenorrhea usually comes with associated symptoms such as headache, lethargy, fatigue, sleepiness/sleeplessness, nausea, and as well as mood disturbances (Itani et al., 2022). The prevalence of dysmenorrhea is the proportion of people experience menstrual pain in a population.	The prevalence of dysmenorrhea in this study refers to a proportion of self-reported female nursing students in UNIMAS experiencing menstrual cramps or discomfort that occurs during the menstrual cycle, as well as the severity of pain experienced (mild, moderate, or severe pain).

Impact on academic performance	Impact refers to the changes that are expected to occur as a result of the implementation or application (Jour Le, 2024). Academic performance refers to academic attitudes (enjoying school, school encouragement, school bonds), grades, and academic goals (Farb & Matjasko., 2012).	In this study, the impact of dysmenorrhea is the consequences of the dysmenorrhea on the nursing students' academic performance which is the ability to carry out academic activities namely: i. Less concentration ii. Limited participation in class iii. Disruption in studying and doing homework iv. Difficulty performing well in exams v. Absenteeism.

1.9 Chapter Summary

This chapter presents an overview of the study, including the problem statement, background, and how dysmenorrhea has interfered with daily living, including academic activities. This study focuses on the prevalence and impact of dysmenorrhea on academic performance among female nursing students in UNIMAS. Three research questions and objectives guide this study. In addition, the significance of the study and definitions of key terms of this study were also covered in this chapter. Next, the literature review of this study will be presented in the following chapter.

CHAPTER 2

LITERATURE REVIEW

2.0 Introduction

This chapter includes a literature review that establishes the general idea of the study, including its literature search. This chapter also gives an overview of dysmenorrhea and its prevalence worldwide. Furthermore, this chapter discusses the impact of dysmenorrhea on academic performance and the relationship between dysmenorrhea and its effects on academic performance. The conceptual framework is also included in this chapter.

This study thoroughly reviewed the literature for relevant studies on the prevalence of dysmenorrhea and its impact on academic performance among nursing students. Since there aren't many studies that are explicitly focused on nursing students, the literature review also includes studies on other populations, such as health-related students and other young women, to provide a broader understanding of the topic.

Electronic databases such as Google Scholar, ResearchGate, PubMed, and ScienceDirect were utilized in this study to ensure a variety of reliable sources. Additionally, the research articles used in this literature review are fully written in English and span the previous 5 years, from 2019 to 2024. The key terms used in the search to describe the concept were dysmenorrhea, prevalence, academic performance, and nursing students.

2.1 The Prevalence and Severity of Dysmenorrhea

The most common gynecological condition among reproductive-age women is dysmenorrhea, which affects between 50 to 90 percent of them (Yáñez-Sarmiento et al., 2024). A study conducted among 956 female healthcare students in Croatia revealed a high

prevalence of dysmenorrhea. Among the students with dysmenorrhea, most reported severe pain, followed by moderate pain, and a few reported mild pain (Horvat et al., 2023).

Similarly, a study conducted among 175 female healthcare students in Egypt found that almost all of the participants had dysmenorrhea, with most reporting severe pain, followed by moderate pain, and lastly mild pain (Agwa et al., 2023). Despite the different sample sizes of both studies, the findings from Horvat et al. (2023) showed the same trend as Agwa et al. (2023). This may be due to the same pain measurement used in both studies, the Numerical Rating Scale (NRS), with the same severity category, in which 1-3 indicates mild pain, 4-6 moderate pain, and 7-10 severe pain.

In contrast, even though a study conducted among healthcare and social sciences female students in Riyadh showed a high prevalence of dysmenorrhea, mild pain is the most reported among the students, followed by severe pain, and a few with moderate pain (Dahlawi et al., 2021). The severity trend showed a different pattern from Horvat et al. (2023) and Agwa et al. (2023), which may be explained by the different measurements of pain used by Dahlawi et al. (2021), which is the Visual Analogue Scale.

Another study assessing the prevalence of dysmenorrhea and the associated factors among female students from various colleges, including health science in Ethiopia, revealed a different trend of findings (Mesele et al., 2022). This study has shown that more than half of the students have dysmenorrhea, with most of them reporting moderate pain, followed by mild and severe pain (Mesele et al. 2022). The trend of findings may be influenced by various factors that were highlighted in the study, which are diet, history of anxiety, menarche, and premenstrual syndrome.

A study among female nursing students in Saudi Arabia showed that more than half of the study participants have dysmenorrhea (Al-Zahrani et al., 2018). Regarding the severity

of dysmenorrhea, the majority of the students experienced moderate pain, while one quarter with severe pain and a few students with mild pain (Al-Zafrani et al., 2018). The prevalence and severity patterns in this study were consistent with the study by Mesele et al. (2022).

Furthermore, a study conducted in Malaysia among nulliparous unmarried women in Kuala Lumpur also revealed a high prevalence among the respondents in the age group 18-22, which typically consists of college or university students (Mohamad Bakro et al., 2023). Most of the respondents had moderate dysmenorrhea, followed by severe and mild dysmenorrhea (Mohamad Bakro et al., 2023). Although dysmenorrhea prevalence is consistent with findings from other studies, the severity differs in other countries. This discrepancy may be due to cultural differences and the pain tolerance of the population.

2.2 Impact of dysmenorrhea on academic performance

A study conducted among female students in Riyadh found that dysmenorrhea has reduced physical activity, reduced concentration, and caused falling asleep during lectures (Dahlawi et al., 2021). These impacts could result from poor management or treatment of dysmenorrhea, which can exacerbate symptoms and cause disruption in academic activities.

Similarly, a study conducted in Ethiopia found that the most common impact of dysmenorrhea on academic performance was reported as having difficulties in studying and concentrating in class due to discomfort (Mesele et al., 2022). However, a greater proportion of participants had trouble studying, which might result from regional variations in student expectations or academic cultures.

A study by Abreu-Sánchez et al. (2020) revealed that half of the respondents, nursing students in Spanish, reported reduced concentration in class or work due to menstrual pain. The findings from Abreu-Sánchez et al. (2020) were consistent with findings from Dahlawi

et al. (2021) and Mesele et al. (2022), stating that menstrual pain widely causes concentration problems in students.

In contrast, a study conducted among female healthcare students in Abu Dhabi revealed that over half of the participants reported having missed lectures or academic sessions due to menstrual pain, especially on the first or second day of menstruation (Dube et al., 2024). Additionally, more than half of the participants also reported having trouble concentrating in academic sessions, inability to be active in class, lack of motivation, and inability to study (Dube et al., 2024). These findings show that the first few days of menstruation are a crucial period during which female students are more likely to experience academic disengagement and absenteeism.

2.3 Relationship between the Severity of Dysmenorrhea and Its Impact on Academic Performance

A study among healthcare students in Abu Dhabi revealed that moderate to severe dysmenorrhea has a negative impact on academic performance (Dube et al., 2024). The study has reported absenteeism from assessments and lectures found to be correlated with severe dysmenorrhea compared to those with no pain, highlighting a clear negative impact on academic engagement (Dube et al., 2024).

Similar to a study among undergraduate students in Eastern Ethiopia found that moderate to severe pain has impacted academic performance more than mild dysmenorrhea, highlighting the difficulties in studying and loss of concentration in class as the most common impacts (Mesele et al., 2022). This relationship can be explained by the compounding impact of severe symptoms of dysmenorrhea, which frequently include physical as well as emotional issues.

A study conducted among nursing students in Egypt also found that dysmenorrhea has an impact on academic performance, highlighting poor academic performance and a high prevalence of sickness absenteeism due to dysmenorrhea (Shaheta & Abdallah, 2020). This result is comparable to the research by Dube et al. (2021), indicating a pattern of absenteeism and low academic engagement caused by dysmenorrhea, particularly in students who report more severe pain.

Another study conducted by Horvat et al. (2023) among Croatian female students showed that menstrual pain intensity affects academic performance, highlighting the affected ability to focus in class, do assignments, and study. Compared to female students with mild or moderate dysmenorrhea, this impact is notably greater in those who experience severe discomfort (Horvat et al., 2023). The findings of this study are similar to Mesele et al. (2022), suggesting that the probability of academic interruption increases with the intensity of menstruation pain.

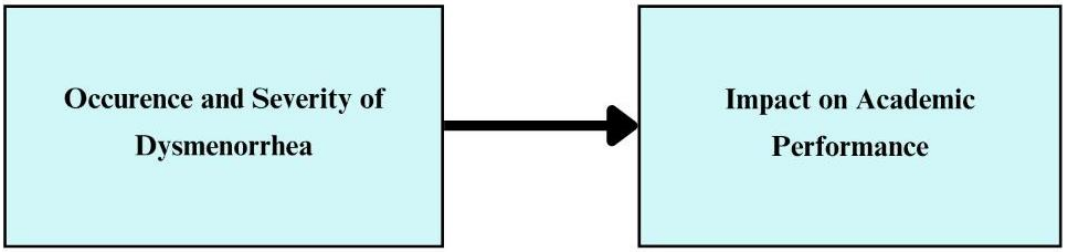
On the other hand, another study conducted among undergraduate students in Ethiopia showed that dysmenorrhea has no impact on academic performance (Tadese et al., 2021). This finding is likely due to the population of the study, which includes all female students from diverse academic backgrounds at the university. Unlike students in health-related programs, those in non-clinical fields may not experience the same level of physical and academic demands, thereby diminishing the observable impact of menstrual pain. Moreover, the study measures academic performance using the grade point average (GPA), which may not sufficiently reflect overall academic engagement. Other important aspects of academic performance, such as overall well-being, which are not often represented in grades alone, may be overlooked if GPA is used as the only measure.

2.4 Conceptual Framework

This study examines the prevalence of dysmenorrhea and its impact on the academic performance of female nursing students at UNIMAS. The conceptual framework guides the understanding of the relationship between dysmenorrhea and its impact on academic performance. The first variable of this study is the occurrence of dysmenorrhea in students, with the severity of the pain, which is categorized into mild, moderate, and severe. The dependent variable is academic performance, measured in terms of class participation, concentration during lessons, examination performance, disruption in studying and doing homework, and rates of absenteeism. The framework assumes that the severity of dysmenorrhea significantly influences a student's ability to perform academically.

Figure 2.1

Conceptual Framework Map



2.5 Summary

This chapter presents an overview of the literature on dysmenorrhea, its prevalence worldwide, and its impact on academic performance. The literature used for the literature review is mostly quantitative research. Several studies have found that students undergo a negative impact on academic performance due to dysmenorrhea. There is a limited understanding of studies on the prevalence and impact of dysmenorrhea on academic

performance, as there are very limited studies focused on this topic undertaken in Malaysia. This limitation suggests that further research should be conducted to examine the prevalence of dysmenorrhea and the impact of dysmenorrhea on academic performance among female nursing students in UNIMAS. The next chapter will give an overview of the methodologies and how this research was conducted.

CHAPTER 3

METHODOLOGY

3.0 Introduction

This chapter has eleven subsections. It presents the research design, research setting, and study population. In addition, the sampling method, sample size, and inclusion and exclusion criteria are covered under the sampling section. Furthermore, the research instrument, reliability and validity, pilot study, ethical considerations, data collection procedure, and data analysis are also presented in this chapter. Lastly, a summary of the chapter was presented at the end of this chapter.

3.1 Research Design

This study utilized a quantitative approach and a descriptive cross-sectional study to determine the prevalence and impact of dysmenorrhea on academic performance among female nursing students in UNIMAS. A quantitative study is an approach involving collecting and analyzing numerical data (Bhandari, 2023). This approach was chosen for this study because it involves collecting numerical data that allows for the analysis of the prevalence and the impact of dysmenorrhea on academic performance among female nursing students in UNIMAS.

In addition, a cross-sectional study is a type of research design that collects data from a large number of people at one time (Thomas, 2023). This study design was chosen for this study as it involved collecting data from many female nursing students in UNIMAS, specifically from year 1 until year 4, in a brief period, using a questionnaire. Therefore, a

quantitative, descriptive cross-sectional study is suitable and efficient for conducting this study.

3.2 Research Setting

This study was conducted at the Faculty of Medicine and Health Sciences (FMSH), University Malaysia Sarawak (UNIMAS) at Samarahan, Sarawak.

3.3 Population

This study targeted female students of the Bachelor of Nursing with Honours at UNIMAS, selected due to accessibility and relevance. However, this study involved only female nursing students from Year 1 to Year 4, as dysmenorrhea only affects females. The total number of female nursing students in the faculty is 197, including the researcher, consisting of 45 students in Year 1, 50 in Year 2, 52 in Year 3, and 50 in Year 4. Additionally, the different years of study will allow for assessing the prevalence and the severity of dysmenorrhea among them. It also provides insight into the different impacts on academic performance that they experienced while dealing with dysmenorrhea.

The inclusion criteria for this study were:

i. Female nursing students in UNIMAS from year 1 until year 4.

The exclusion criteria for this study were:

ii. Postgraduate nursing students. Postgraduate students have different schedules and attend classes less frequently than undergraduate nursing students. These variations may impact the academic performance of undergraduate students differently.

iii. Participants from a pilot study. This is to reduce bias and double response.

3.4 Sampling Method and Sample Size

3.4.1 Sampling Method

Simple random sampling was selected as the sampling method for this study. Simple random sampling is a type of probability sampling that enables the random selection of a subset of a population (Thomas, 2023). This method was selected to minimize the risk of bias and give equal chances of being selected from the population. Since it uses randomization, the sample was more likely to represent a large population (Mahmutovic, 2022). The randomization was performed using the Statistical Package for the Social Sciences (SPSS) version 27, IBM. To perform simple random sampling, a complete list of eligible participants from year 1 to year 4 was compiled. The list was then entered into SPSS, and the "random sample cases" function was used to select the participants randomly from the list. The selected participants were then used for the pilot and actual study. This process ensured that every individual in the population had an equal chance of being selected, thereby enhancing the representativeness and reducing the potential for selection bias.

3.4.2 Sample Size

The calculation of the sample size for this study was based on the total number of female nursing students in UNIMAS from year 1 until year 4. There were 196 of them, excluding the researcher. The Taro Yamane (1967) formula is applied for the sample size estimation of this study as the population is finite and heterogynous (Ovie, 2024).

Taro Yamane (1967) formula:

$$n = \frac{N}{1+Ne^2} \qquad \text{Equation 3.1}$$

Whereby, n = required sample size

N = population size

1 = constant value

e = the level of precision (0.05)

The calculation for the sample size in this study is as follows:

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

$$n = \frac{196}{1+(196)(0.05)^2}$$

n =132 participants

Based on this formula, the estimated sample size for this study was 132 participants. However, the compensation for the participants that the researcher is unable to contact or approach potential dropouts, and missing data, most researchers commonly add 10% to the sample size (Duntoye, 2015). Therefore, to compensate for missing data in the sample, an additional 10% non-response rate was added.

The calculation of sample size with a non-response rate is as follows:

132×10%=13,

Therefore, 132+13=145

After adding 10%, the calculated sample size for this study is 145 participants.

3.5 Research Instrument

The questionnaires used in this study were adapted from a previous study by Dube et al. (2024). Permission and consent were obtained via email from the original authors of the questionnaire. The questionnaires were then modified to suit this study with guidance from the supervisor of this study. The printed questionnaires were distributed to participants to collect the data. The questionnaire has three parts, which are Section A, Section B, and Section C. Section A was about demographic data that consists of 5 items, including 1

closed-ended question for age, and the other four items are year of study, ethnic group, religion, and family history of dysmenorrhea in multiple-choice answers.

Next, the menstrual and dysmenorrhea history among female nursing students was obtained in Section B. This section consists of 14 items. The questions included the age of menarche, which is a closed-ended question, and the other questions were multiple-choice and dichotomous. The other questions that were asked are about the regularity of the menstrual cycle, the duration of menstruation, pad changes during the first 3 days of menses, a short description of the menstrual period, the duration of dysmenorrhea with the number of days, the location of menstrual pain, and the history of being hospitalized or consulting a physician regarding the pain.

Furthermore, section B also included a question on the experience of dysmenorrhea during, or after menstruation, which was categorized into 2: Yes and No. Next, the question on the severity of dysmenorrhea is using the Numerical Rating Scale (NRS), which is a common tool used in assessing the severity of pain from a 0–10 scale, with number zero meaning “no pain” and the number 10 meaning “the worst possible pain”. The respondents were required to state a scale from 0 to 10 based on the severity of the pain they experienced. The scale of NRS was then classified into 3 categories: 1-3 = mild, 4-6 = moderate, and 7-10 = severe in data analysis later (Agwa et al., 2023). Lastly, two more questions in this section examined the coping strategies for dysmenorrhea and symptoms experienced along with the pain. These questions consist of multiple-choice answers, and the respondents are allowed to choose more than one option.

In Section C, the impact of dysmenorrhea on academic performance among female nursing students in UNIMAS was examined. The total number of items in this section was 13. The students were required to answer all the questions and rate their experiences using

the 5-point Likert scale (0=Never, 1=Rarely, 2=Sometimes, 3=Often, & 4=Always). The total impact score was calculated by summing responses across 13 items, with higher scores indicating greater impact.

3.6 Reliability and Validity

Reliability refers to the consistency of the measurement method, and measurement is considered reliable if the same outcome is consistently obtained using the same method (Middleton, 2024). The Statistical Package for Social Sciences (SPSS) was used to assess the instrument's reliability for this study. Values of 0.7 or above for Cronbach's alpha indicate acceptable internal consistency (Taber, 2017). In addition to that, the reliability of the impact score in this study was found to be excellent, with a Cronbach's alpha of 0.93.

Validity, on the other hand, refers to the accuracy of a method in measuring what it intends to measure (Middleton, 2024). Since the research instrument is adapted from a previous study and is being modified to suit this study, content validity was used to prove the validity of the questionnaire. Content validity is chosen because it is easy to apply and ensures the questionnaire addresses all key aspects of the study based on an expert review of each item and evaluation of the degree to which each item represents the concept being measured (Allen et al., 2023).

3.7 Ethical Consideration

To conduct this study, ethical approval and consideration were obtained from the Research Ethics Committee, Faculty of Medicine and Health Science at UNIMAS (Ref: UNIMAS/NC-21.05/03-03 Jld.8(128)). Before the commencement of the survey, clear explanations regarding the study were given before inviting the participants. Formal informed consent was obtained from the inclusion students before they participated in the study. In addition, a brief description, the purpose of the study, an explanation of the

confidentiality of data collection, and the participant's informed consent were included alongside the questionnaire paper to facilitate more understanding and ensure ethical compliance.

Next, the participants were informed about their right to withdraw from the study at any time without any penalty or repercussions. The confidentiality and anonymity of respondents were ensured, as the questionnaire papers were labelled with numbers instead of using the real names of the participants. The collected data were then kept in a private file to maintain confidentiality, accessible only by the researcher.

3.8 Pilot Study

A pilot study was conducted to assess the feasibility of a full study and test the adequacy of research instruments used in the actual study (Conelly, 2008). Thus, validity and reliability are essential in assessing the appropriateness and quality of an instrument (Sundram & Romli, 2023). The sample size for the pilot study is recommended to be 10% of the sample expected for the main study (Connelly, 2008). Therefore, a total of 15 participants from the target population of interest who meet the inclusion criteria will be recruited for the pilot study. To ensure equality, 15 participants were chosen using randomization in SPSS. As a result, 2 participants were recruited from year 1, 5 participants from both year 2 and year 4, and 3 participants from year 3 of female nursing students in UNIMAS.

Before conducting the pilot study, formal permission was obtained from the participants. The participants were assured that the data obtained from the pilot study would remain confidential and would only be used for research purposes. Since the participants for the pilot study were a small number, the questionnaire papers were distributed to each year of study, from year 1 to year 4, on the same day. The questionnaire was designed to be

completed in approximately 15 minutes, but participants were allowed to answer it at their convenience before it was collected at the end of the day. After the data collection of the pilot study, the data were transformed into SPSS to test the Cronbach's alpha of the questionnaire, and the Cronbach's alpha was 0.93, which is found to be excellent. Lastly, proceed with the actual study.

3.9 Data Collection Procedure

A list of nursing students from Year 1 to Year 4 will be obtained from the Academic Office of FMHS, UNIMAS, to determine the target population and identify eligible participants for this study. Next, before conducting the study, ethical approval was obtained from the Medical Research Ethics Committee (MREC), UNIMAS, to ensure compliance with all ethical guidelines.

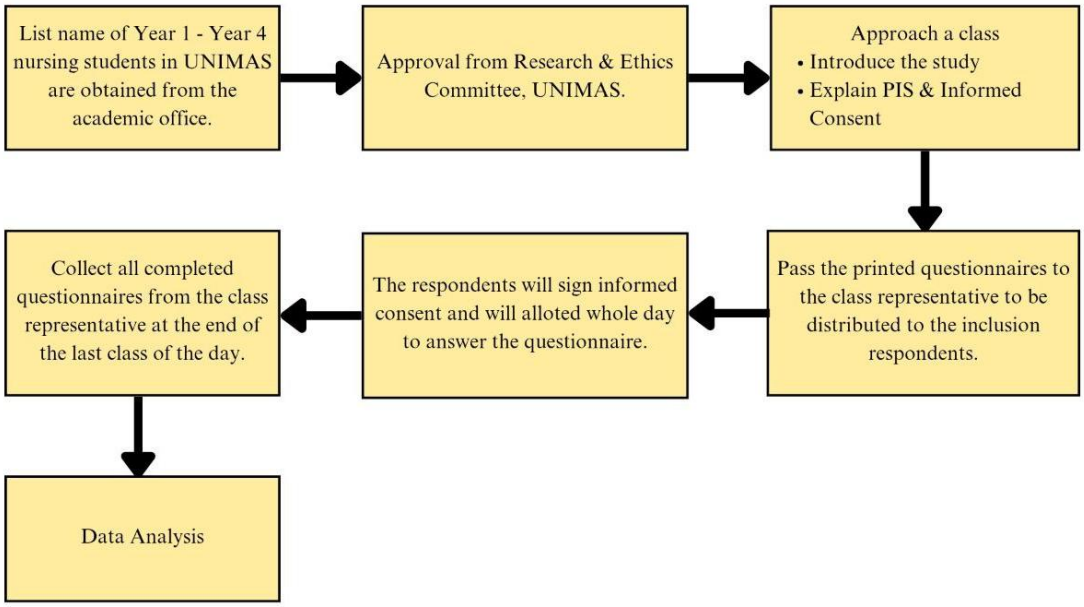
Once approval was obtained, since there are four classes, which are year 1, year 2, year 3, and year 4, the researcher approached each class on a different day. In addition to that, the researcher went to the class at a mutually convenient time, such as before or after lectures or lecture breaks, to introduce the study and invite the participants. The researcher had briefly explained the study, including the participant eligibility and questionnaire details, and ensured the students understood the participant informed consent (PIS) process.

Next, the printed questionnaires were distributed to the eligible participants through the class representative. The PIS and consent form were attached alongside the questionnaire for the participant to sign, as they were willing to participate and understand their rights in this study. Further instructions for completing the questionnaire were provided in the questionnaire booklet. If they have any questions regarding the study or the questionnaire, the participants could contact the researcher directly, as the number was provided in the questionnaire.

Completing the questionnaire took approximately 15 minutes, and participants were allowed to answer it at their convenience during the day to ensure flexibility. Subsequently, the researcher had collected all the completed questionnaires from the class representative by the end of the last class of the day. The researcher would securely store all completed questionnaires to maintain confidentiality and protect participant anonymity. The data were then transformed into a softcopy format for analysis purposes using SPSS software.

Figure 3.1

Data Collection Procedure



3.10 Data Analysis

This study used a software program, Statistical Package for the Social Sciences (SPSS) version 27 IBM, for data analysis. It employed two statistical methods: descriptive and inferential statistics. Since the sample size exceeded 50 participants, the Kolmogorov-Smirnov test was used to assess the normality of the data distribution.

Next, the data collected in this study were presented according to their distribution. Continuous data that is normally distributed was reported using mean and standard deviation,

but data that is not normally distributed will be reported using median and interquartile range. Categorical data, on the other hand, will be reported in frequencies or percentages and visualized in bar charts.

For this study, the first objective focuses on the prevalence of dysmenorrhea. Since it is categorical data, it was analyzed using descriptive statistics and presented in percentages and a bar chart to report the findings. Meanwhile, the second objective, which examines the impact of dysmenorrhea on academic performance, is continuous data that was also analyzed using descriptive statistics. The continuous data are presented using the median and interquartile ranges or the mean and standard deviation, depending on the distribution's normality.

The third objective, which examines the relationship between the severity of dysmenorrhea and its impact on academic performance, were analyzed using the inferential statistics method. The statistical test that will be used is the Spearman Correlation Coefficient, as the severity was on an ordinal scale (mild, moderate, and severe), and the other variable, which is the impact of dysmenorrhea on academic performance, is continuous data.

3.11 Summary

In summary, the study was conducted quantitatively at the Faculty of Medicine and Health Sciences in UNIMAS. This study will employ a cross-sectional design involving female nursing students from the first to fourth years. The sample size was determined using the Yamane formula (1967) and simple random sampling. Therefore, there were 145 participants in the study's sample, including a 10% non-response rate. Three sections compose this study instrument, and participants will be given a self-administered printed questionnaire. Before any data was collected, ethical approval was obtained. Descriptive and

inferential statistics in IBM SPSS Statistics version 27 were then used to analyze the gathered data.

CHAPTER 4

RESULTS

4.0 Introduction

This chapter presented the study's findings. Descriptive and inferential statistics were used to analyze and summarize data to answer the research questions, as stated in the previous chapter. SPSS version 27 was used to analyze data, and the findings were described in text, tables, or figures.

4.1 Demographic data of female nursing students in UNIMAS

The demographic data was tabulated, which consists of year of study, age, ethnic group, religion, and family history of dysmenorrhea. Data was collected from 100% of respondents, a total of 145 of the sample size.

4.1.1 Year of Study

Data was collected among the year 1 until year 4 female nursing students. Based on Table 4.1, the highest frequency of year of study is year 3 with a total number of 40 (27.6%) female nursing students. Followed by year 4 female nursing students, which was the second highest in frequency, with 36 (24.8%) number of respondents. Meanwhile, female nursing students in year 1 and year 2 were 35 (24.1%) and 34 (23.4%) respondents, respectively.

4.1.2 Age

Five types of ethnic groups were categorized in this study: Malay, Chinese, India, Bumiputera Sarawak, and Bumiputera Sabah. In this study, most of the respondent was

Bumiputera Sarawak with a total number of 60 (41.4%), followed by Malay, 59 (40.7%), Bumiputera Sabah, 21 (14.5%), Chinese, 4 (2.8%), and India, 1 (0.7%) respectively.

4.1.3 Ethnic Group

Five types of ethnic groups were categorized in this study: Malay, Chinese, India, Bumiputera Sarawak, and Bumiputera Sabah. In this study, most of the respondent was Bumiputera Sarawak with a total number of 60 (41.4%), followed by Malay, 59 (40.7%), Bumiputera Sabah, 21 (14.5%), Chinese, 4 (2.8%), and India, 1 (0.7%) respectively.

4.1.4 Religion

Four types of religion were categorized in this study: Islam, Buddha, Hindu, and Christian. In this study, most of the respondents were Islam with a total number of 79 (54.5%), followed by Christian, 62 (42.8%), Buddha, 3 (2.1%), and Hindu, 1 (0.7%) respondents respectively.

4.1.5 Family History of Dysmenorrhea

In this study, most respondents have a family history of dysmenorrhea, with a total of 91 (62.8%) respondents, while 54 (37.2%) of the respondents have no family history of dysmenorrhea.

Table 4.1

Demographic Data of Female Nursing Students in UNIMAS (n=145)

Demographic Data	Variable	Frequency (n)	Percentage (%)
Year of Study	1	35	24.1%
	2	34	23.4%
	3	40	27.6%
	4	36	24.8%
Age	20	29	20.0%
	21	34	23.4%
	22	37	25.5%

	23	32	22.1%
	24	12	8.3%
	26	1	0.7%
Ethnic Group	Malay	59	40.7%
	Chinese	4	2.8%
	India	1	0.7%
	Bumiputera Sarawak	60	41.4%
	Bumiputera Sabah	21	14.5%
Religion	Islam	79	54.5%
	Buddha	3	2.1%
	Hindu	1	0.7%
	Christian	62	42.8%
Family History of Dysmenorrhea	No	54	37.2%
	Yes	91	62.8%

Figure 4.1

Year of Study

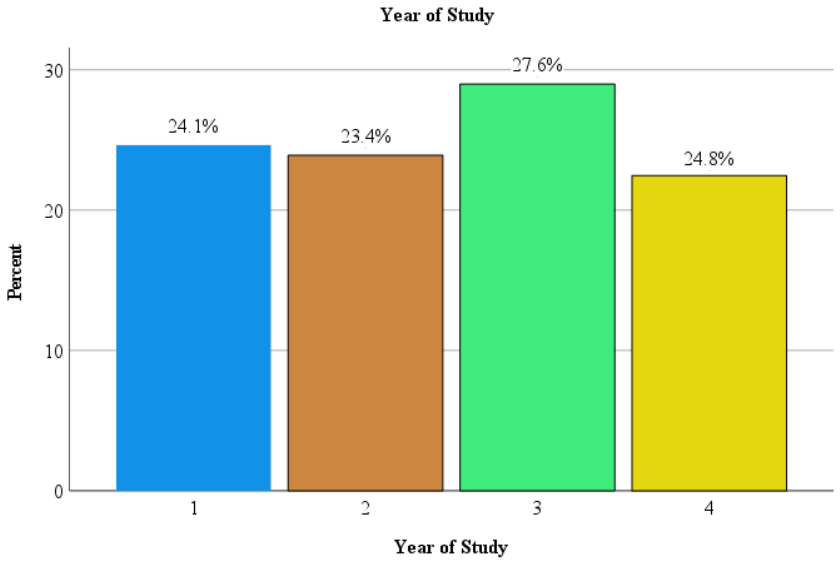


Figure 4.2

Age

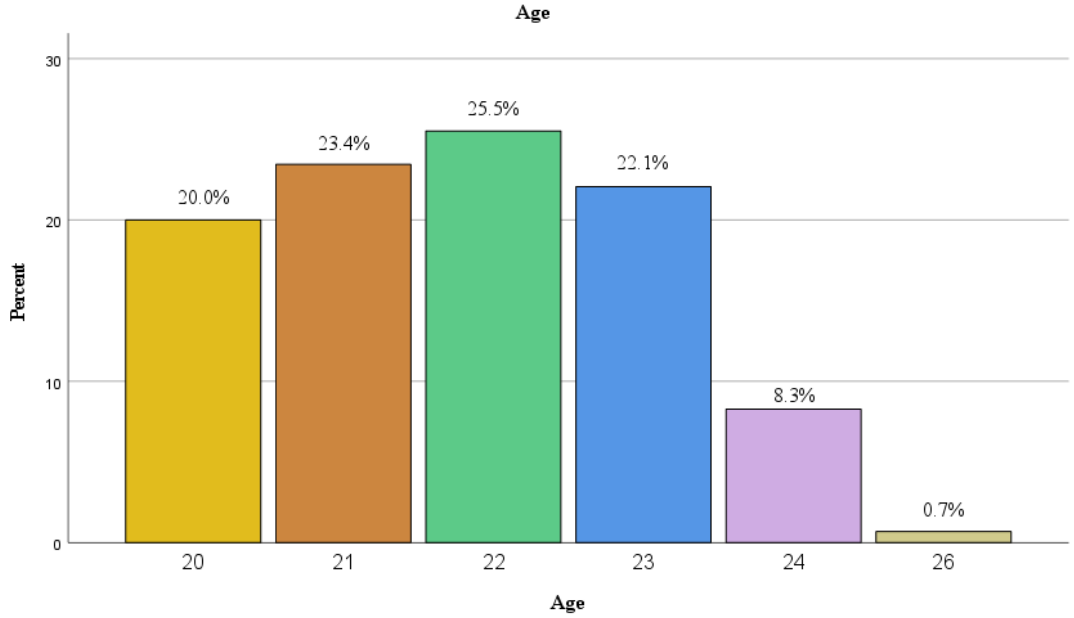


Figure 4.1

Ethnic Group

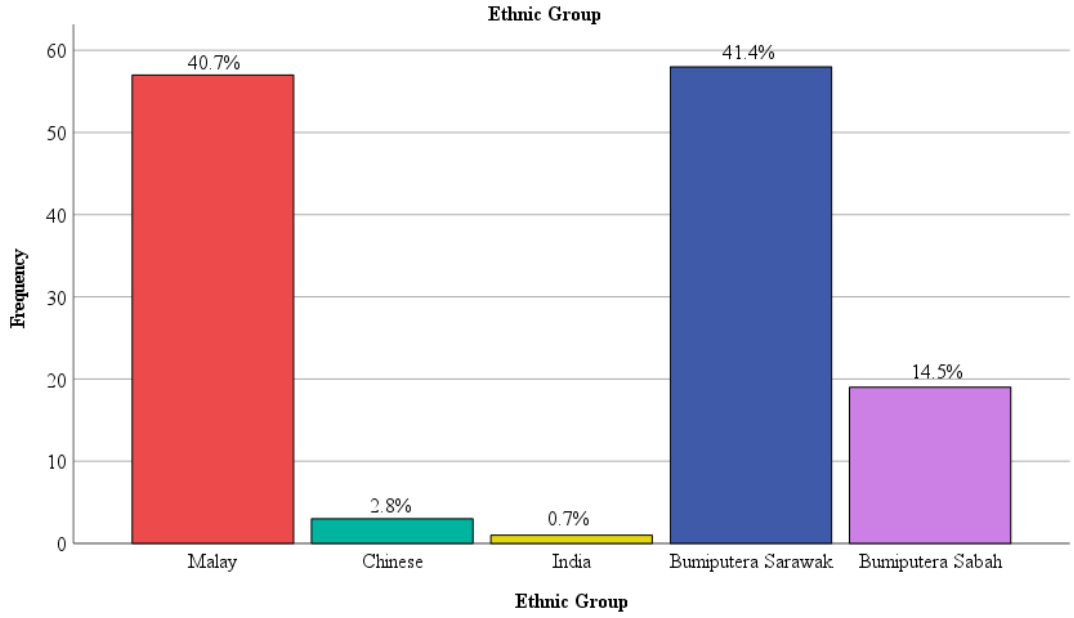


Figure 4.2

Religion

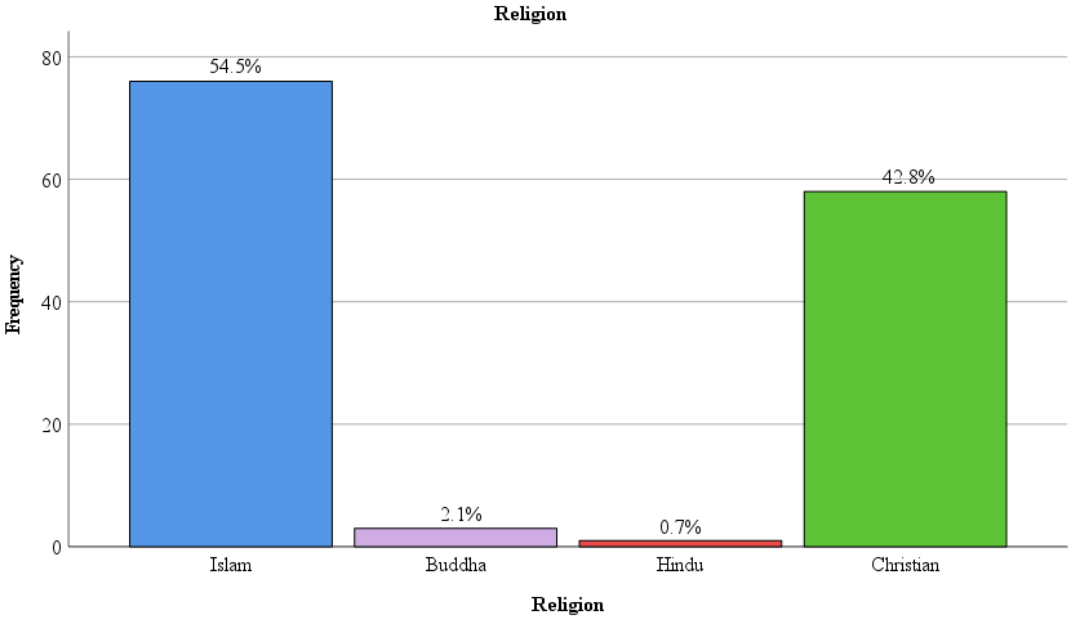
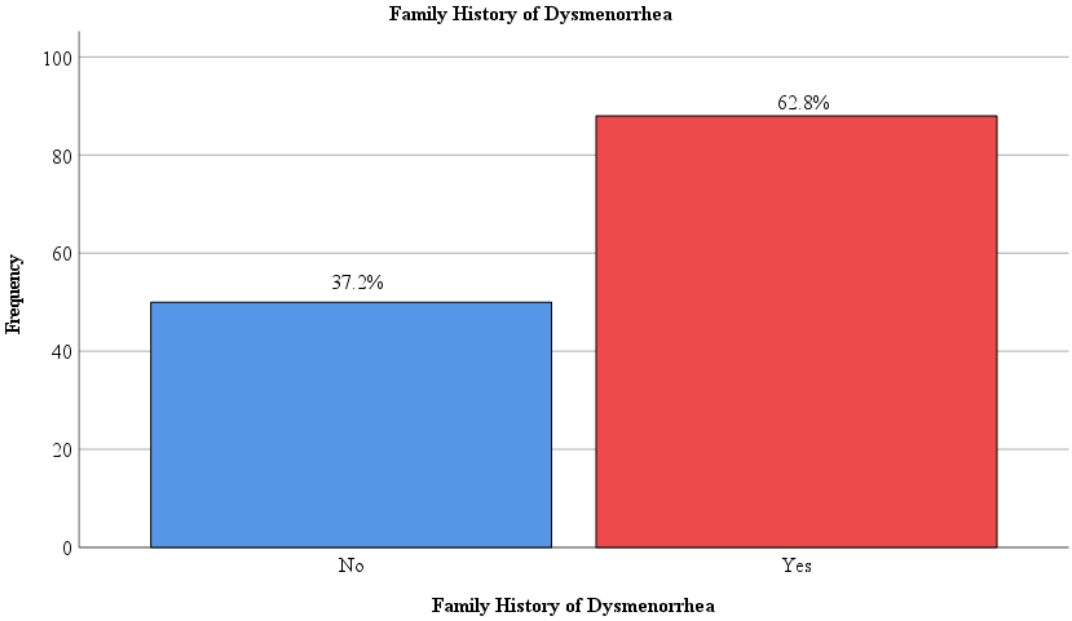


Figure 4.3

Family History of Dysmenorrhea



4.2 Menstrual and Dysmenorrhea History

The menstrual and dysmenorrhea history was tabulated, which includes age of menarche, menstrual cycle regularity, number of pads changed per day, menstrual flow during the first three days, duration of dysmenorrhea, site of pain, consultation with physician, history of hospitalization, and pain management of dysmenorrhea.

4.2.1 Age of Menarche

The range of age of menarche is between 9 to 16 years old. The majority of respondents experienced menarche at age 12 (40.7%), followed by age 11 (18.6%) and age 13 (17.9%). A smaller proportion reported menarche at age 10 (11.0%), age 14 (7.6%), age 15 (2.8%), and only 0.7% each at age 9 and age 16.

4.2.2 Regularity of Menstrual Cycle

Out of 145 respondents, 108 (74.5%) reported having regular menstrual cycles, while 37 (25.5%) experienced irregular cycles.

4.2.3 Pads Change per Day

A total of 72 (49.7%) respondents changed their pads less than three times per day during menstruation. Meanwhile, 66 (45.5%) changed pads 4–5 times daily, and only 7 (4.8%) respondents reported changing 6–7 times daily.

4.2.4 Menstrual Flow During the First Three Days

Regarding the menstrual flow for the first three days, 94 (64.8%) of respondents experienced heavy flow, 34 (23.4%) had moderate flow, and 17 (11.7%) had light flow.

4.2.5 Duration of Dysmenorrhea

A total of 91 respondents (62.8%) experienced dysmenorrhea for 1 to 2 days. 28 respondents (19.3%) reported experiencing it for less than 1 day. Meanwhile, 8 respondents (5.5%) experienced dysmenorrhea for 3 to 4 days, and 2 respondents (1.4%) reported pain lasting 4 to 5 days. Additionally, 16 respondents (11.0%) did not experience dysmenorrhea at all.

4.2.6 Site of Pain

There are 130 (89.7%) respondents who reported experiencing pain in the lower abdomen. Back pain was reported by 40 respondents (27.5%), leg pain by 22 respondents (15.2%), and thigh pain by 20 respondents (13.8%). A small number, which is 7 (4.8%) respondents, did not report any site of pain.

4.2.7 Consultation with Physician

Only 6 respondents (4.1%) had consulted a physician regarding menstrual pain, while 139 respondents (95.9%) had never sought medical consultation for their dysmenorrhea.

4.2.8 History of Hospitalization

A total number of 143 (98.6%) respondents reported no history of hospitalization due to menstrual pain. Only 2 respondents (1.4%) had been hospitalized related to dysmenorrhea.

4.2.9 Pain Management

A total of 128 (88.3%) respondents reported using bed rest as a method of managing menstrual pain, making it the most common pain management. This was followed by 66 (45.5%) respondents who used heating pads. A total of 37 (25.5%) respondents reported using tea or herbs, and another 37 (25.5%) respondents managed their pain with self or over-the-counter medication. 10 (6.9%) respondents used prescribed medication. Additionally, 5

(3.5%) respondents reported using other methods such as ointment oil, exercise, or eating chocolate. Meanwhile, 7 (4.8%) respondents did not use any form of pain management.

Table 2.2

Menstrual and Dysmenorrhea History

	Items/Value	Frequency (n)	Percentage (%)
Age of menarche	9	1	0.7%
	10	16	11.0%
	11	27	18.6%
	12	59	40.7%
	13	26	17.9%
	14	11	7.6%
	15	4	2.8%
	16	1	0.7%
Was your period regular or irregular?	Regular	108	74.5%
	Irregular	37	25.5%
Pads change per day	Less than 3	72	49.7%
	4-5	66	45.5%
	6-7	7	4.8%
Describe the menstrual period for the first three days	Light	17	11.7%
	Moderate	34	23.4%
	Heavy	94	64.8%
How long has the dysmenorrhea lasted?	N/A	16	11.0%
	less than a day	28	19.3%
	1-2 days	91	62.8%
	3-4 days	8	5.5%
	4-5 days	2	1.4%
Site of pain	N/A	7	4.8%
	Lower Abdomen	130	89.7%
	Back	40	27.5%
	Thighs	20	13.8%
	Legs	22	15.2%
Have you consulted a physician about the pain?	No	139	95.9%
	Yes	6	4.1%
Have you been hospitalized for menstrual pain?	No	143	98.6%
	Yes	2	1.4%
Pain management	N/A	7	4.8%
	Bed rest	128	88.3%
	Heating pad	66	45.5%

	Tea or Herbs	37	25.5%
	Prescribed medication	10	6.9%
	Self/over-the-counter medication	37	25.5%
	Others (Ointment oil, Exercise, Eating chocolate)	5	3.5%

4.3 Prevalence of Dysmenorrhea among Female Nursing Students in UNIMAS

Out of 145 respondents, 138 (95.2%) have experienced dysmenorrhea, while 7 (4.8%) have not experienced dysmenorrhea (Refer to **Table 4.3**). Among the 138 respondents who reported experiencing dysmenorrhea, 64 (46.4%) reported moderate dysmenorrhea, 40 (29.0%) reported mild dysmenorrhea, and 44 (24.6%) reported severe dysmenorrhea.

Table 4.3

Prevalence of Dysmenorrhea among Female Nursing Students in UNIMAS (n=145)

Experience of dysmenorrhea	Frequency (n)	Percentage (%)
No	7	4.8
Yes	138	95.2
Total	145	100

Table 4.4

Severity of Dysmenorrhea among Female Nursing Students in UNIMAS (n=138)

Severity of dysmenorrhea	Frequency (n)	Percentage (%)
Mild	40	29.0
Moderate	64	46.4
Severe	34	24.6
Total	138	100

Figure 4.6

Prevalence of Dysmenorrhea

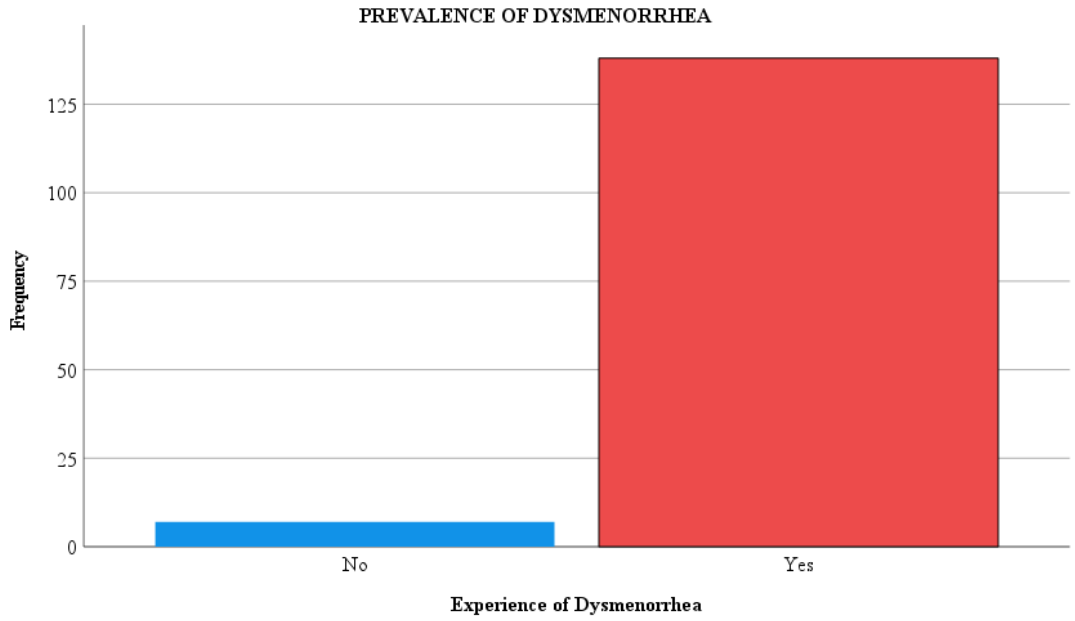
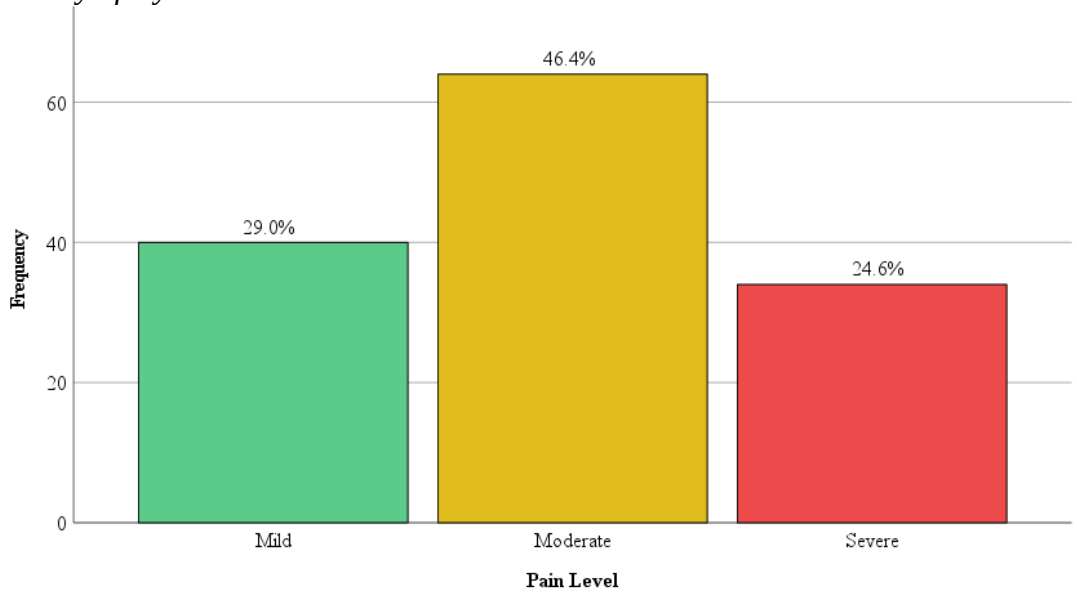


Figure 4.7

Severity of Dysmenorrhea



4.4 The impact of dysmenorrhea on academic performance among female nursing students in UNIMAS

The impact of dysmenorrhea on academic performance was assessed through 13 structured questions. Among the respondents who reported experiencing dysmenorrhea (n = 138), 55 (37.9%) respondents indicated that dysmenorrhea has negatively affected students' academic performance.

In terms of concentration, 87 (63%) respondents reported difficulty concentrating during lectures, and 85 (58.6%) respondents during exams. In addition, 49 (35.5%) respondents reported difficulty recalling information during examinations. The average response rate was 52.4%, suggesting that dysmenorrhea interferes with students' ability to concentrate during academic activities.

In terms of class participation, 70 (48.3%) respondents reported feeling sleepy during lectures, and 77 (53.1%) reported being unable to participate actively in class activities due to dysmenorrhea. The average response rate of experiencing limited class participation due to dysmenorrhea was 50.7%.

For disruptions in study or doing homework, 76 (52.4%) and 79 (54.5%) respondents reported a lack of motivation to study and difficulty following study plans, respectively. In addition, 67 (46.2%) respondents were unable to study for exams, and 73 (50.3%) respondents had difficulty completing assignments due to dysmenorrhea. The average response rate for experiencing disruption in studying or completing homework due to dysmenorrhea was 50.9%.

Regarding exam performance, 26 (17.9%) respondents reported giving up easily on difficult questions, and 55 (37.9%) respondents stated they could not answer well in examinations due to menstrual pain. The average response rate of experiencing difficulties performing well in an exam was 27.9%.

Absenteeism was also reported, with 13 respondents (7.4%) having missed lectures, assessments, or examinations due to dysmenorrhea.

Table 4.5

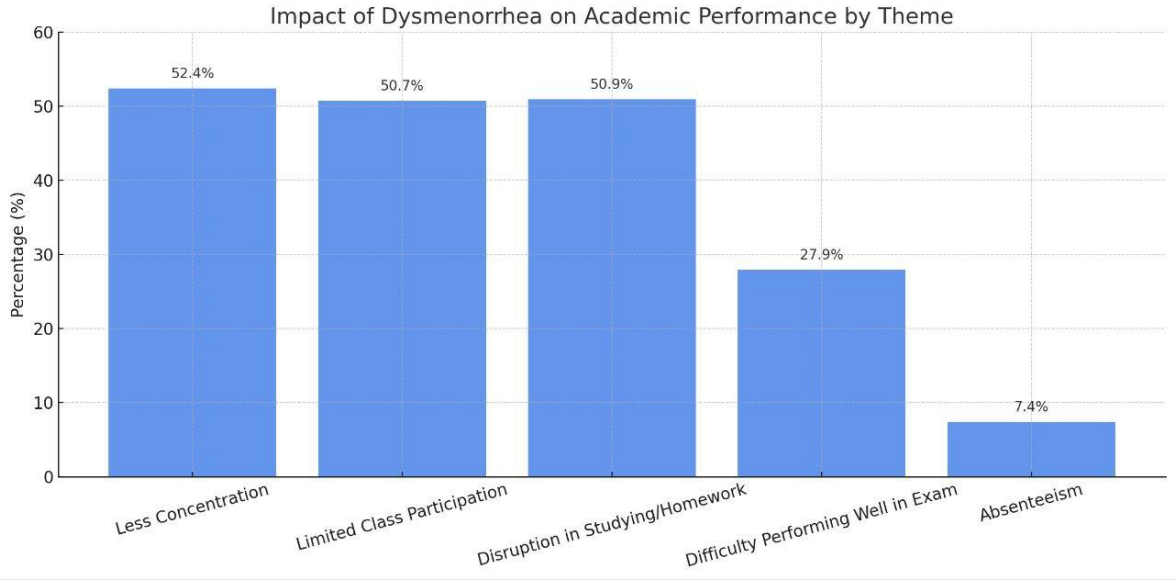
Impact of Dysmenorrhea on Academic Performance

Items	Never n (%)	Rarely n (%)	Sometimes n (%)	Often n (%)	Always n (%)	Remarks
Do you think your menstrual pain has a negative effect on your academic performance?	36 (26.1%)	47 (34.1%)	39 (28.3%)	9(6.5%)	7 (5.1%)	37.9% reported an overall negative academic impact
Do you have trouble concentrating in lectures due to menstrual pain?	10 (7.2%)	41 (29.7%)	42 (30.4%)	28 (20.3%)	17 (12.3%)	Average response rate: 52.4% reported reduced concentration
Have you ever found it difficult to focus on an exam due to menstrual pain?	14 (10.1%)	39 (28.3%)	48 (34.8%)	26 (18.8%)	11 (8.0%)	
Do you find it difficult to recall information in an exam due to menstrual pain?	43 (31.2%)	46 (33.3%)	28 (20.3%)	14 (10.1%)	7 (5.1%)	
Have you ever felt sleepy during a lecture because of menstrual pain?	29 (21.0%)	39 (28.3%)	39 (28.3%)	20 (14.5%)	11 (8.0%)	Average response rate: 50.7% reported

Do you find yourself unable to participate actively in class due to menstrual pain?	13 (9.4%)	48 (34.8%)	44 (31.9%)	22 (15.9%)	11 (8.0%)	limited participation in class
Do you have a lack of motivation to study due to menstrual pain?	29 (21.0%)	33 (23.9%)	30 (21.7%)	35 (25.4%)	11 (8.0%)	
Have you ever been unable to study for an exam due to menstrual pain?	27 (19.6%)	44 (31.9%)	34 (24.6%)	25 (18.1%)	8 (5.8%)	Average response rate: 50.9% reported disruption in studying or doing homework
Do you find it difficult to follow your study plan due to menstrual pain?	21 (15.2%)	38 (27.5%)	40 (29.0%)	29 (21.0%)	10 (7.2%)	
Have you ever had difficulty working on an assignment due to menstrual pain?	22 (15.9%)	43 (31.2%)	39 (28.3%)	23 (16.7%)	11 (8.0%)	
Do you give up easily on tough questions in an exam due to menstrual pain?	75 (54.3%)	37 (26.8%)	13 (9.4%)	9 (6.5%)	4 (2.9%)	Average response rate: 27.9% reported difficulty in performing well in exam
Have you ever been unable to answer well in an exam due to menstrual pain?	43 (31.2%)	40 (29.0%)	31 (22.5%)	17 (12.3%)	7 (5.1%)	
Have you ever missed a lecture/assessment/examination due to menstrual pain?	100 (72.5%)	25 (18.1%)	10 (7.2%)	3 (2.2%)	0 (0%)	7.4% reported absenteeism

Figure 4.8

Impact of Dysmenorrhea on AP



4.4.1 Total impact score on academic performance among female nursing students in UNIMAS

The median total impact score among participants was 18.00 (IQR = 16.25, N = 138), with scores ranging from 0 to 51.

The normality test indicated that the total impact score was not normally distributed (refer to Table 4.6). Additionally, the variable for levels of dysmenorrhea is ordinal data. Therefore, a non-parametric test was employed for the analysis. Preliminary analyses were performed, and there was a violation of the assumptions of normality for the impact score, D(138) = .079 , p = .035. No outliers or extreme values were detected from the box plot.

Table 4.6

Descriptive Total Impact Score

		Statistic
Total Impact Score	Median	18.00
	Minimum	0

	Maximum	51
	Range	51
	Percentile 25	10.75
	Percentile 50	18.00
	Percentile 75	27.00
	Interquartile range	16.25

Figure 4.9

Histogram Total Impact Score

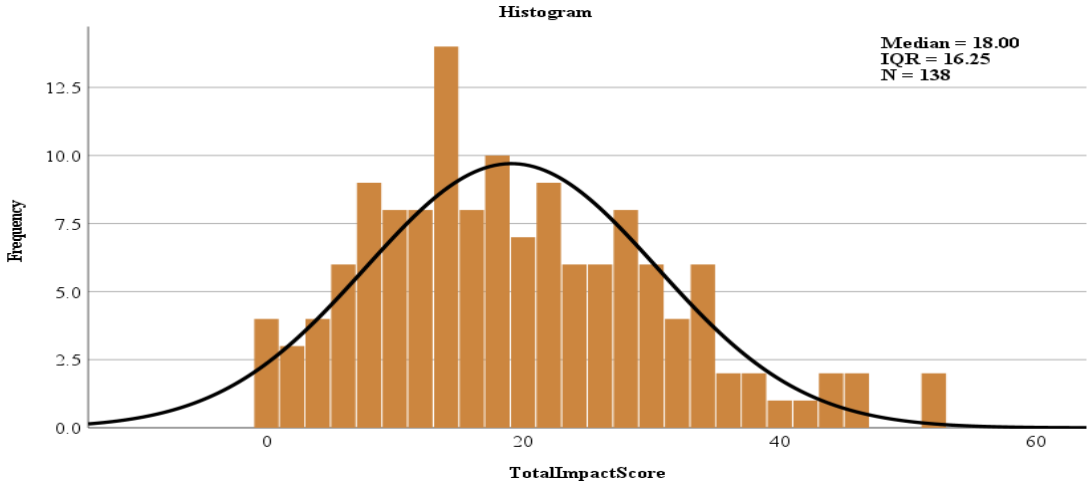


Table 4.7

Normality Test of Total Impact Score

	Kolmogorov-Smirnov[a]		
	Statistic	df	Sig.
TotalImpactScore	.079	138	.035

a. Lilliefors Significance Correction

4.5 The relationship between dysmenorrhea and its impact on academic performance among female nursing students

The relationship between dysmenorrhea and its impact on academic performance was investigated using Spearman's correlation coefficient (refer to Table 4.7). There was a strong positive correlation between the two variables, $r_s(138) = .568$, $p < .001$, with higher levels of dysmenorrhea associated with higher impact scores (Mdn = 18, IQR = 16.25).

Table 4.8

The Association between Severity of Dysmenorrhea and Impact on Academic Performance Among Female Nursing Students in UNIMAS (n=138)

Correlations

			Total Impact Score	Levels of dysmenorrhea
Spearman's rho	TotalImpactScore	Correlation Coefficient	1.000	.568
		Sig. (2-tailed)	.	<.001
		N	138	138
	Severity of dysmenorrhea	Correlation Coefficient	.568	1.000
		Sig. (2-tailed)	<.001	.
		N	138	138

**. Correlation is significant at the 0.01 level (2-tailed).

4.6 Summary

In summary, there is a high prevalence of dysmenorrhea among female nursing students in UNIMAS, and most of them have experienced moderate pain, followed by severe and mild pain. The mean total impact score for academic impact was 19.09 (SD=11.35), indicating that dysmenorrhea has an impact on academic performance in terms of class participation, concentration during lessons, examination performance, disruption in studying and doing homework, and rates of absenteeism. A statistical analysis also showed a significant relationship between dysmenorrhea and the impacts of academic performance, suggesting that students with severe pain were likely to experience academic difficulties.

CHAPTER 5

DISCUSSION

5.0 Introduction

This chapter discusses the findings on the prevalence of dysmenorrhea and its impact on academic performance, as well as the relationship between dysmenorrhea and its impact on academic performance among female nursing students in UNIMAS. This chapter also summarizes the findings, implications, recommendations, future research, limitations of this study, and conclusion.

5.1 Discussion of the findings/results

5.1.1 Prevalence and severity of dysmenorrhea among female nursing students in UNIMAS

This study revealed a high prevalence of dysmenorrhea (95.2%) among female nursing students in UNIMAS, with the majority experiencing moderate pain, followed by severe and mild pain. This finding is consistent with the study by Mohamad Bakro et al. (2023). The similarity in findings could be attributed to both studies being conducted within the same country, where similar cultural or environmental factors may influence menstrual health.

In contrast, a slightly lower prevalence was reported by Al-Zahrani et al. (2018) in Saudi Arabia. Both studies observed a common severity trend, with moderate dysmenorrhea being most frequently reported. The slight difference in prevalence rates is likely due to the variation in sample size and differences in demographic characteristics. Despite these

differences, shared academic stress and lifestyle habits among nursing students may also contribute to a similar experience of pain intensity.

In addition, the high prevalence reported in the current study is also similar to Horvat et al. (2023), Agwa et al. (2023), and Dahlawi et al. (2021). However, the severity patterns of these studies differ from the current study, as severe pain is reported the most, followed by moderate and mild pain. The discrepancy in the severity patterns is attributed to differences in the criteria used for rating pain intensity, individual pain tolerance, and subjective interpretation of the pain intensity. Therefore, even though dysmenorrhea is consistently prevalent among university students, the distribution of pain severity differs across countries.

5.1.2 Impact of dysmenorrhea on academic performance among female nursing students in UNIMAS

The findings of this study demonstrate that dysmenorrhea significantly impacts various aspects of academic performance among female nursing students. Participants reported that menstrual pain affects their ability to participate in class, concentrate during lessons, perform in examinations, complete homework, and maintain regular attendance. These results indicate that dysmenorrhea not only causes physical discomfort but also interferes with cognitive and behavioral aspects of academic engagement.

These findings are strongly supported by previous research. For instance, Dube et al. (2024) reported that more than half of the female healthcare students in Abu Dhabi experienced absenteeism and reduced academic participation, particularly during the first two days of menstruation. The study also noted a decline in motivation, concentration, and the ability to study during this period, which aligns with the present study's findings on the disruption of studying and homework completion.

Similarly, Mesele et al. (2022) identified difficulties in concentration and studying as common outcomes of dysmenorrhea among Ethiopian students. This is reflected in the current study, where concentration during lessons emerged as one of the most affected areas. Consistent with this, Abreu-Sánchez et al. (2020) also observed reduced concentration in class among Spanish nursing students due to menstrual pain, reinforcing the recurring pattern of cognitive disruption across diverse populations.

Dahlawi et al. (2021) found that dysmenorrhea led to reduced physical activity and falling asleep during lectures, suggesting a link between pain and lowered alertness in class. This supports the present finding that dysmenorrhea impairs active class participation and lesson engagement.

Furthermore, the reported impact on examination performance in this study may be related to the inability to focus, prepare adequately, and retain information during menstruation, which has also been implied in previous literature. Although not all studies directly assessed examination performance, the cumulative effects of poor concentration, absenteeism, and study disruption logically contribute to poorer academic outcomes during assessments.

5.1.3 Relationship between dysmenorrhea and its impact on academic performance among female nursing students in UNIMAS

This study found a significant positive relationship between the severity of dysmenorrhea and its impact on academic performance among female nursing students in UNIMAS. As the pain severity increases, so does the level of academic disruption. This study was supported by Dube et al. (2024), who reported that students with moderate to severe dysmenorrhea were more likely to be absent from lectures and assessments, demonstrating a direct negative impact on academic engagement. Similarly, Mesele et al.

(2022) found that undergraduate students in Eastern Ethiopia with moderate to severe dysmenorrhea also revealed an association between menstrual pain intensity and reduced academic performance, highlighting significant difficulties concentrating in class and studying.

These findings are also consistent with a study conducted among nursing students in Egypt, which highlights the absenteeism and poor academic performance linked to dysmenorrhea (Shaheta and Abdallah, 2020). Furthermore, Horvat et al. (2023) highlighted similar findings where severe menstrual pain was associated with negative academic performance, including reduced concentration, difficulty completing academic tasks, and challenges in studying.

The impact of dysmenorrhea on academics can be explained by both biological and psychological pathways. Biologically, the overproduction of prostaglandins during menstruation causes intense uterine contractions, leading to abdominal pain, fatigue, and nausea that hinder students' academic engagement (Matsumura et al., 2023). Psychologically, ongoing menstrual pain is associated with elevated levels of anxiety, depression, and emotional distress, further undermining concentration, motivation, and academic functioning (Adib-Rad et al., 2022).

However, Tadese et al. (2021) reported no significant relationship between dysmenorrhea and academic performance among Ethiopian undergraduates. This discrepancy may be attributed to differences in the measurement of academic performance. The reliance on GPA as the sole indicator may not represent the broader academic performance impacts.

5.2 Summary of the findings of the study

This study aimed to examine the prevalence of dysmenorrhea and its impact on academic performance among female nursing students at UNIMAS. The findings revealed a high prevalence of dysmenorrhea among female nursing students, with the majority of students reporting moderate pain, followed by severe and mild levels of pain. This study identified that dysmenorrhea has a noticeable impact on academic performance. Students experiencing dysmenorrhea reported difficulties such as reduced concentration, limited participation during classes, disruptions in studying or completing assignments, affected exam performance, and absenteeism rates. These findings suggest that dysmenorrhea interferes with both academic engagement and outcomes. A significant positive correlation was found between the severity of dysmenorrhea and its impact on academic performance. Students with more severe pain were more likely to face academic challenges compared to those with mild or moderate pain levels.

5.3 Implications

This study highlights that dysmenorrhea should not be viewed as a minor health concern. Dysmenorrhea overall causes lower concentration, limits class participation, disrupts study or doing assignments, causes difficulty performing well in an exam, and leads to absenteeism. Furthermore, increased awareness of the effect of dysmenorrhea on academic performance is important, particularly within the faculty. The nursing department or faculty should prioritize early identification of students affected by dysmenorrhea and provide appropriate support mechanisms, such as educational resources, coping strategies, and flexible academic accommodations, to help mitigate its impact on students' academic success.

5.4 Recommendations for this study

Based on the findings of this study, there are some recommendations are proposed for addressing the impact of dysmenorrhea on academic performance. First of all, awareness should be raised among lecturers and faculty authorities regarding the impact of dysmenorrhea on academic performance. This includes providing students with access to education and appropriate resources on pain management and coping strategies to help reduce its negative effects. Additionally, supportive policies should be developed to accommodate the menstrual health needs of female students. This may include allowing flexible attendance for one high-peak pain day, providing a designated rest area, and ensuring access to medical consultations to support recovery and maintain academic performance.

5.5 Limitations of the study

This study had a few limitations. First, this study didn't explore how the severity of dysmenorrhea (mild, moderate, or severe) differs among students in different years of study. Looking into this could have provided more insight into whether students in higher years experience the condition differently. Third, there were financial and time constraints, which may have limited the sample size and the depth of the analysis. Lastly, since the information was self-reported, some responses might not have been completely accurate due to recall bias or personal interpretation.

5.6 Future research

For future research, it is suggested to carry out a detailed comparison between students in different academic years, such as Year 1 through Year 4, to see how many students experience mild, moderate, or severe dysmenorrhea in each group. This kind of

comparison could help identify any patterns as students' progress through their nursing studies. Second, securing additional resources and allowing more time for data collection. This would enable larger sample sizes and more comprehensive analysis. Lastly, using a longitudinal approach in future studies would be helpful to track changes over time and reduce the chances of bias that can come with self-reported data.

5.7 Conclusions

The study revealed that dysmenorrhea is highly prevalent among female nursing students in UNIMAS, suggesting that dysmenorrhea is a common health issue among this population. The majority of female nursing students reported moderate pain, followed by severe and mild pain. Dysmenorrhea has found significant impacts on academic performance in terms of concentration, class participation, disruption in studying or doing homework, exam performance, and absenteeism rates. Therefore, the findings of this study emphasize the need for increased awareness, early identification, and appropriate support for students affected by dysmenorrhea. These findings highlight the importance of addressing menstrual health as part of academic support services to help improve student well-being and academic performance.

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APPENDICES

Appendix A: Ethical Approval

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

UNIVERSITI MALAYSIA
SARAWAK
94300 Kota Samarahan

MEMORANDUM

Reference	:	UNIMAS/NC-21.05/03-03 Jld. 8(128)
To	:	Suzane Laura Anak Herman Bangga (81307) Bachelor of Nursing with Honours Faculty of Medicine and Health Sciences
From	:	Dean Faculty of Medicine and Health Sciences
Date	:	05 March 2025
Subject	:	**Final Year Project - Research Approval: Prevalence Of Dysmenorrhea And Its Impact On Academic Performance Among Female Nursing Students In Unimas**

The above matter is referred.

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

Student Name	:	**Suzane Laura Anak Herman Bangga**
Student ID	:	**81307**
Programme	:	**Bachelor of Nursing with Honours**
Research Title	:	***Prevalence Of Dysmenorrhea And Its Impact On Academic Performance Among Female Nursing Students In Unimas***
Supervisor Name	:	**Madam Roziah binti Arabi**
Supervisor H/P	:	**+60 13-394 7728**

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

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

Thank you with regards and well wishes.

Yours sincerely,

Professor Dr. Asri bin Said
Dean

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

Appendix B: Cover Letter for Ethical Approval

Suzane Laura Anak Herman Bangga,
Faculty of Medicine and Health Sciences,
Universiti Malaysia Sarawak,
94300 Kota Samarahan,
Sarawak.

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

Professor/Associate Professor/Dr/Sir/Madam,

REQUEST FOR APPROVAL TO CONDUCT RESEARCH PROJECT

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

Full name: Suzane Laura Anak Herman Bangga

Matrix number: 81307

IC No.: 010318130438

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: Prevalence of Dysmenorrhea and Its Impact on Academic Performance Among Female Nursing Students in UNIMAS

Supervisor's name: Madam Roziah Binti Arabi

Email address: aroziah@unimas.my

Supervisor's HP number: 0133947728

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

Thank you.

Yours sincerely,

(Suzane Laura Anak Herman Bangga)

Appendix C: Participant Information Sheet (English)

PARTICIPANT INFORMATION SHEET

1.	**Title of the study**	**:**	**Prevalence of Dysmenorrhea and Its Impact on Academic Performance Among Female Nursing Students in UNIMAS**
2.	**Main Researcher**	**:**	**Suzane Laura Anak Herman Bangga**
3.	**Supervisor/ Penyelia**	**:**	**a) Course coordinator: Shalin Lee Wan Fei** **b) Main research supervisor: Roziah Binti Arabi**
4.	**Institution/**	**:**	**Department of Nursing** **Faculty of Medicine & Health Sciences** **Universiti Malaysia Sarawak**
5.	**Name of sponsor**	**:**	**No external funding**

PARTICIPANT INFORMATION SHEET AND INFORMED CONSENT FORM

(for adult subjects)

6. Introduction:

It is important that you understand why the study is being done and what it will involve. Please take the time to read through this information and consider it carefully before deciding if you are willing to participate. Ask the study researcher 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 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 withdraw 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, Universiti Malaysia Sarawak.

7. What is the purpose of the study?

The primary aim of this study is to examine the prevalence and impact of dysmenorrhea on academic performance among female nursing students in UNIMAS, providing insight into how common dysmenorrhea among female nursing students is and how this condition affects their academic performance. Furthermore, this study aims to examine the correlation between dysmenorrhea and academic performance, potentially enabling approaches to support female nursing students who have been affected. By focusing on these key factors, the study seeks to better understand the issues encountered among female nursing students and offer suggestions based on evidence to minimize poor academic performance due to dysmenorrhea.
This research will be conducted for the duration of 8 months (07/11/2024 till 30/05/2025). The expected number of participants is 145 individuals.

8. Who can participate in this study?

In this cross-sectional study targeting all female nursing students in UNIMAS, the inclusion and exclusion criteria have been meticulously defined to delineate eligible participants. Inclusion criteria comprise female nursing students who are willing to participate in the study. Conversely, Conversely, exclusion criteria are established to exclude female nursing students who are not willing to participate in the study, post-registration nursing students due to their differing schedules from undergraduate nursing students, and participants from the pilot study to avoid bias and duplicate responses. These criteria collectively aim to create a homogeneous participant group, ensuring the study's precision, validity, and relevance to the targeted research objectives.

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 15-20 minutes of your time.
You will be given a survey form to be answered. This form contains 3 sections which will enquire about sociodemographic data, menstrual and dysmenorrhea history, and the impact of dysmenorrhea on academic performance topics.

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 of the questions that you feel uncomfortable with.

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

There may or may not be any direct benefits to you. However, the data collected from this study holds potential benefits for nursing students who are affected by dysmenorrhea. By focusing on the prevalence of dysmenorrhea and its impact on academic performance, the study aims to provide valuable insights into effective approaches to overcome the seriousness of dysmenorrhea in influencing academic performance. The findings of this study could lead to a better understanding from institution and educators on the issue that encounters female nursing students, contributing to establishing the approaches to help the nursing students' academic performance and health as well. However, it is important to note that feedback on study findings will not be provided at the end of the study.

12. Who is funding the research?

This study does not receive any external funding and is fully sponsored by the main study researcher. You will not be paid for participating in this study.

13. Will my medical information be kept private?

Your privacy and autonomy are highly respected throughout this research process. Your information will solely be utilized for the specified purposes of this study, collected through a hardcopy questionnaire by the researchers. Subsequently, the data will be transformed into a softcopy format for analysis purposes. All collected information will be handled with strict confidentiality, adhering to applicable laws and regulations, and will be stored securely until December 31, 2030, by the study's researchers.

Your identity will remain confidential, and your consent will be sought before disclosing any information in study publications or presentations. In the future, if there is a need for additional storage or use of the collected specimen/data, you retain the right to refuse, respecting your autonomy and privacy. Inspection of study data may be carried out by qualified monitors, auditors, and relevant authorities involved in the study.

14. Who should I call if I have questions?

If you have any questions or want information about this study, please contact the main researcher, Suzane Laura Anak Herman Bangga at telephone number 0128801074 or the

supervisor of this study, Madam Roziah Binti Arabi who can be reached through the email address: aroziah@unimas.my
If you have any questions about your rights as a participant in this study, please contact The Medical Research & Ethics Committee of Universiti Malaysia Sarawak, through the email address: medicalethics@unimas.my.

Appendix D: Questionnaire

GENERAL INSTRUCTION:

1. This questionnaire booklet has 5 pages including the front page.
2. Please answer **ALL** the questions in this questionnaire once you receive it.
3. All information gathered will be kept confidential and only used for study purposes.
4. This questionnaire consists of 3 sections:
   a) Section A (Demographic Data) consists of 5 questions.
   b) Section B (Menstrual & Dysmenorrhea History) consists of 14 questions.
   c) Section C (Impact of Dysmenorrhea on Academic Performance) comprises 16 questions.

SECTION A: DEMOGRAPHIC DATA

Kindly write your answer in the blank space and tick **(✓)** in the box provided for certain questions.

1. Age: _____ years old

2. Year of Study

   ☐ Year 1
   ☐ Year 2
   ☐ Year 3
   ☐ Year 4

3. Ethnic group

   ☐ Malay
   ☐ Chinese
   ☐ India
   ☐ Iban
   ☐ Bidayuh
   ☐ Other, specify: _____

4. Religion

   ☐ Islam
   ☐ Buddha
   ☐ Hindu
   ☐ Christian
   ☐ Other, specify: _____

5. Family history of dysmenorrhea (menstrual pain)?

   ☐ Yes, specify (mother/sister, etc): _____
   ☐ No

SECTION B: MENSTRUAL & DYSMENORRHEA HISTORY

Kindly write your answer in the blank space provided and tick **(✓)** the box for the most appropriate option for each of the following questions. Put "–" or N/A if not applicable.

1. When did you start your period (menarche)? _____

2. Was your period regular or irregular?

   ☐ Regular
   ☐ Irregular

3. On average, how long is your menstrual period (days of bleeding)?

   ☐ Less than 3 days
   ☐ 4-5 days
   ☐ 6-8 days
   ☐ More than 8 days, specify: _____

4. How many pads do you change per day during the first 3 days of your menstrual period? (approximately)

   ☐ Less than 3
   ☐ 4-5
   ☐ More than 5, specify _____

5. How would you describe your menstrual period?

   ☐ Heavy
   ☐ Moderate
   ☐ Light

6. Do you experience pain before/ during your menstrual period?

Before		During	
	Yes		Yes
	No		No

7. Does the pain last for the entire duration of the period?

   ☐ Yes
   ☐ No

8. If not, how long does the pain last for?

- ☐ Less than a day
- ☐ 1 - 2 days
- ☐ 3 - 4 days
- ☐ More than 4 days, specify: _____
- ☐ N/A

9. Where do you experience pain?
(you may tick more than one answer).

- ☐ Lower Abdomen
- ☐ Back
- ☐ Thighs
- ☐ Legs
- ☐ Other, specify: _____

10. Have you consulted a physician about the pain?

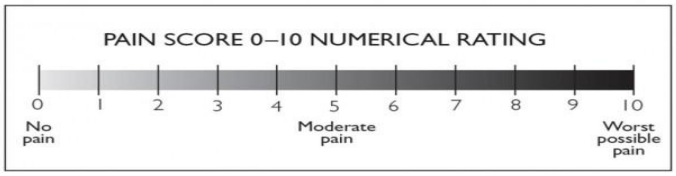
- ☐ Yes
- ☐ No

11. Have you ever been hospitalized for menstrual pain?

- ☐ Yes
- ☐ No

12. In your last 3 cycles, how severe was the pain?

[Using Numerical Rating Scale, rate the pain on a scale from 0 to 10, where 0 indicates no pain and 10 represents the worst possible pain you have ever experienced.]



SCORE (e.g, 8): _____

13. What measures do you take to alleviate the pain?
(you may tick more than one answer).

- ☐ Prescribed medication
- ☐ Self/Over the counter medication
- ☐ Heating pads
- ☐ Tea or herbs
- ☐ Bed rest
- ☐ Other, specify: _____.
- ☐ Combination of measures, specify: _____.

14. Do you experience any other symptoms along with the pain? *(you may tick more than one answer).*

- ☐ Constipation
- ☐ Diarrhea
- ☐ Vomiting
- ☐ Nausea
- ☐ Fullness and/or tenderness of breast
- ☐ Headaches
- ☐ Depression
- ☐ Mood swings
- ☐ Abdominal bloating
- ☐ Changes in appetite
- ☐ Fatigue
- ☐ Acne
- ☐ Other, specify: _____

SECTION C: IMPACT OF DYSMENORRHEA ON ACADEMIC PERFORMANCE

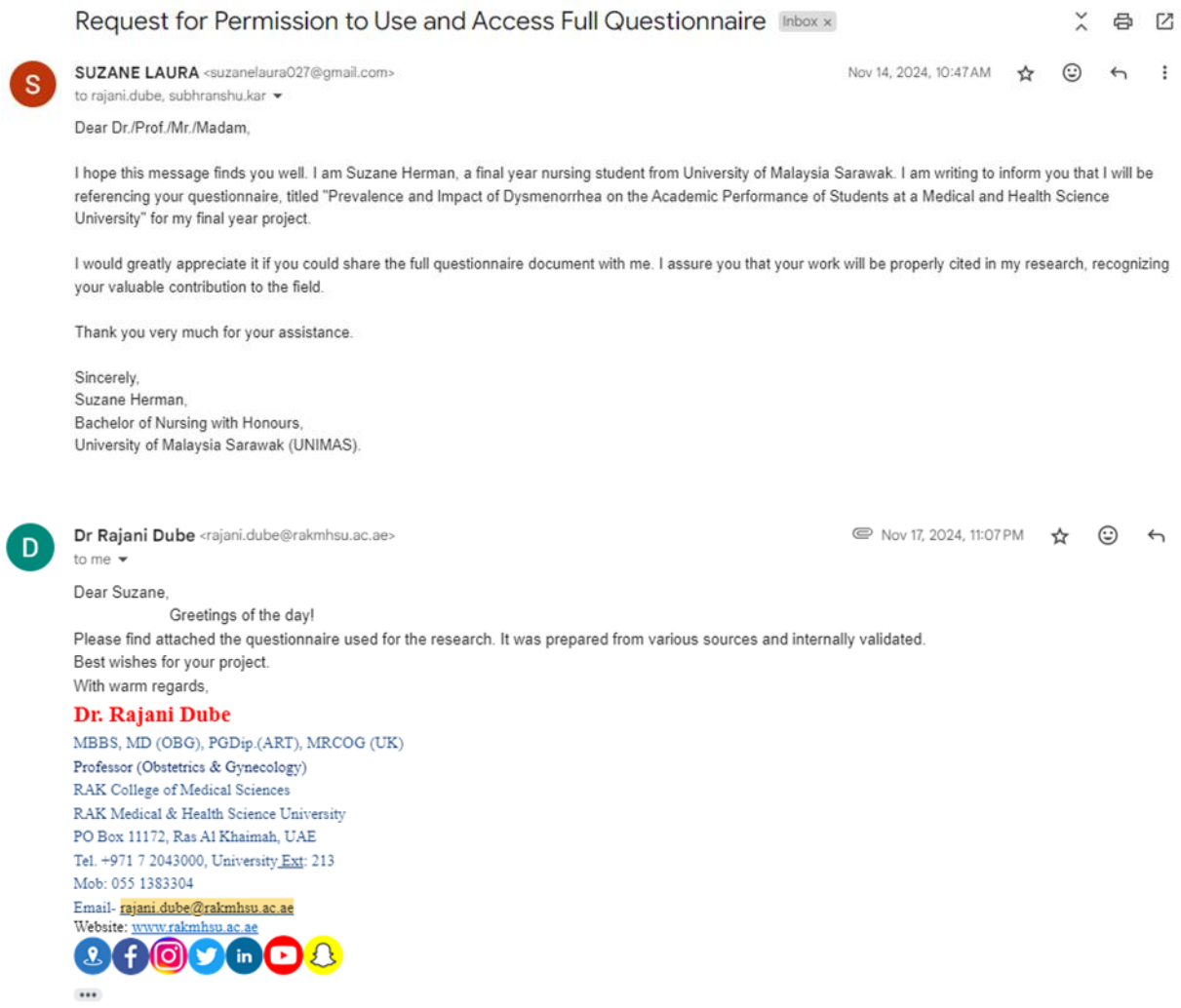
Answer all questions based on the described scale below and write your answer in blank space for certain questions.

0= NEVER 1= RARELY 3= SOMETIMES 2= OFTEN 3=ALWAYS

NO.	ITEMS	**0**	**1**	**2**	**3**	**4**
1.	Do you think your menstrual pain has a negative effect on your academic performance?					
2.	Have you ever missed a lecture/assessment/examination due to menstrual pain?					
3.	Do you have trouble concentrating in lectures due to menstrual pain?					

4.	Have you ever felt sleepy during a lecture because of menstrual pain?					
5.	Do you find yourself unable to participate actively in class due to menstrual pain?					
6.	Have you ever found it difficult to focus on an exam due to menstrual pain?					
7.	Have you ever been unable to answer well in an exam due to menstrual pain?					
8.	Do you give up easily on tough questions in an exam due to menstrual pain?					
9.	Do you find it difficult to recall information in an exam due to menstrual pain?					
10.	Have you ever been unable to study for an exam due to menstrual pain?					
11.	Do you have a lack of motivation to study due to menstrual pain?					
12.	Do you find it difficult to follow your study plan due to menstrual pain?					
13.	Have you ever had difficulty working on an assignment due to menstrual pain?					

Appendix E: Permission Obtained from Original Author to Use Questionnaire



Request for Permission to Use and Access Full Questionnaire Inbox ×

SUZANE LAURA <suzanelaura027@gmail.com> Nov 14, 2024, 10:47 AM

to rajani.dube, subhranshu.kar

Dear Dr./Prof./Mr./Madam,

I hope this message finds you well. I am Suzane Herman, a final year nursing student from University of Malaysia Sarawak. I am writing to inform you that I will be referencing your questionnaire, titled "Prevalence and Impact of Dysmenorrhea on the Academic Performance of Students at a Medical and Health Science University" for my final year project.

I would greatly appreciate it if you could share the full questionnaire document with me. I assure you that your work will be properly cited in my research, recognizing your valuable contribution to the field.

Thank you very much for your assistance.

Sincerely,
Suzane Herman,
Bachelor of Nursing with Honours,
University of Malaysia Sarawak (UNIMAS).

Dr Rajani Dube <rajani.dube@rakmhsu.ac.ae> Nov 17, 2024, 11:07 PM

to me

Dear Suzane,

Greetings of the day!

Please find attached the questionnaire used for the research. It was prepared from various sources and internally validated.

Best wishes for your project.

With warm regards,

Dr. Rajani Dube

MBBS, MD (OBG), PGDip.(ART), MRCOG (UK)
Professor (Obstetrics & Gynecology)
RAK College of Medical Sciences
RAK Medical & Health Science University
PO Box 11172, Ras Al Khaimah, UAE
Tel. +971 7 2043000, University Ext: 213
Mob: 055 1383304
Email- rajani.dube@rakmhsu.ac.ae
Website: www.rakmhsu.ac.ae

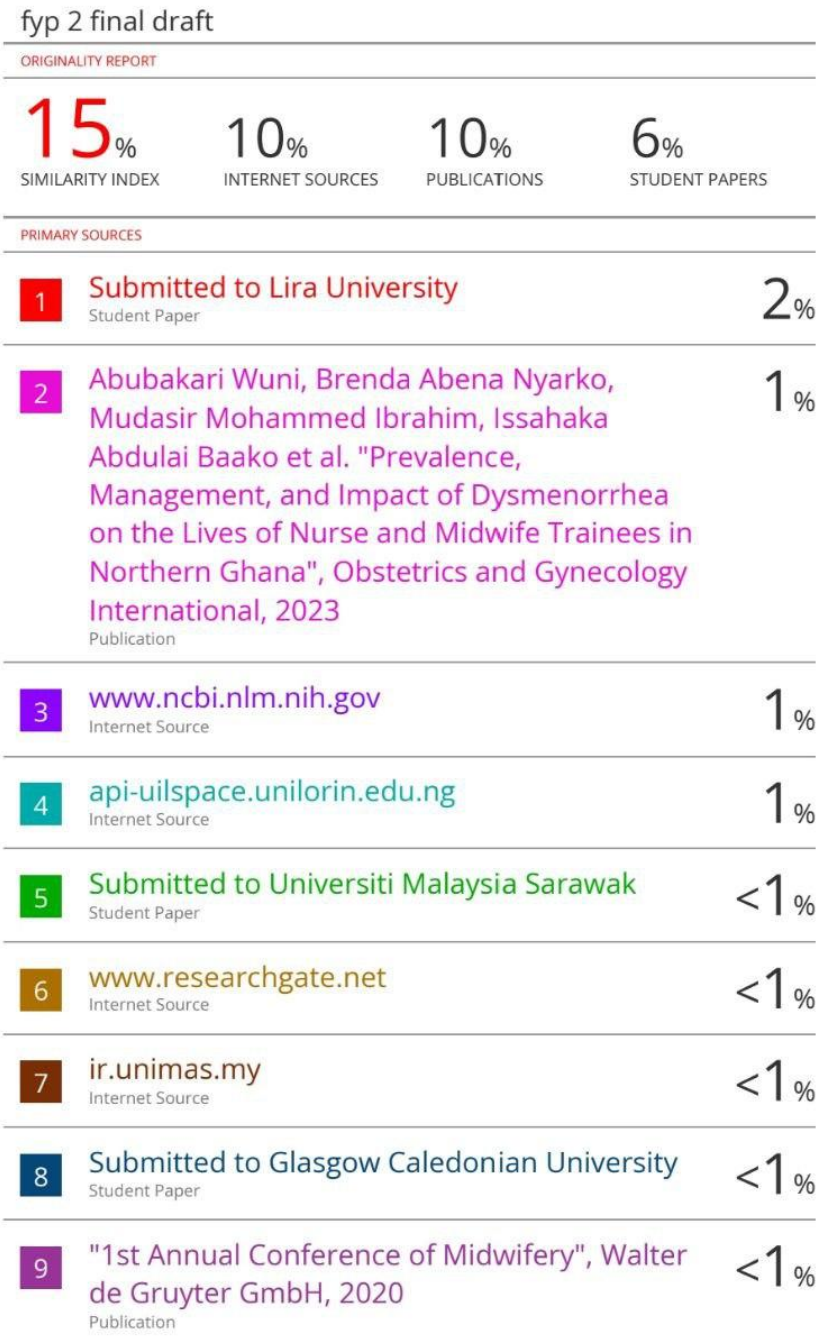
Appendix F: GANTT Chart

No.	Tasks	Months									
		2024			2025						
		Oct	Nov	Dec	Jan	Feb	Mac	Apr	May	June	July
1.	Determination of the research title										
2.	Meeting with supervisor										
3.	Literature Review										
4.	Proposal Defense										
5.	Submit 1st Draft FYP 1										
6.	Ethical Approval										
7.	FYP 1: Submission of research proposal										
8.	Data Collection										
9.	Data Analysis										
10.	Writing up a report										
11.	Submit 1st Draft FYP 2										
12.	Poster Presentation FYP 2										
13.	Submission of Final Report FYP 2										

Appendix G: Expenditure

No.	Tasks	Quantity	Price per Unit	Amount
1.	SPSS Software	1	RM 5	RM 5
2.	Printing for proposal defense presentation	15 pages (2 sets)	RM 0.50	RM 15
3.	Printing for a poster (A1 size)	1 piece	RM 40	RM 40
4.	Internet data plan (Oct-June)	7 months	RM 40	RM 280
5.	Printing for the FYP 2 written report	91 pages (1 set)	RM 0.50	RM 45.5
6.	Binding FYP 2	1 piece	RM 15	RM 15
Total				RM 400.5

Appendix H: Turnitin Similarity Index Report



fyp 2 final draft

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