



THE RELATIONSHIP BETWEEN ANXIETY LEVELS AND MENSTRUAL CYCLE DISORDERS IN UNDERGRADUATE NURSING STUDENTS WRITING THESES

Nurul Mu'jizah*, Achmad Dafir Firdaus, Evi Dwi Prastiwi

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Maharani College of Health Sciences, Malang, Indonesia

ABSTRACT

Introduction: In the process of compiling a thesis, female students have a sense of anxiety. Anxiety that arises due to pressure and causes hormones that play a role in the menstrual cycle not to function properly, causing disorders in the menstrual cycle. The purpose of this study was to determine the relationship between anxiety levels and menstrual cycle disorders in female students of the Undergraduate Nursing Study Program who are compiling theses at Maharani Health College (STIKes Maharani).

Methods: The research design used was Cross-sectional. Sampling used a purposive sampling technique. The research sample was 40 respondents. Data were collected by distributing questionnaires adopted from previous research that had undergone validity and reliability tests. **Results:** The results of this study found data on the highest level of anxiety, namely 31 people (77.5%) with moderate anxiety levels and 21 people (52.5%) experiencing menstrual cycle disorders. Based on the Fisher Exact Test, the p -value was obtained = 0.046 < α (0.05). **Conclusions:** It was concluded that there was a relationship between anxiety levels and menstrual cycle disorders in female students of the Undergraduate Nursing Study Program who were compiling theses at STIKes Maharani. Anxiety often causes menstrual cycles to become irregular. It is hoped that the anxiety experienced by female students while writing their thesis can be anticipated by adapting to their individual levels of anxiety. Female students must also have positive coping adaptations so that they do not have an impact on physiological changes and menstrual cycle disorders.

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*Correspondence:

Nurul Mujizah

*Email:

izadtwins@gmail.com

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INTRODUCTION

Anxiety often referred to as, what Nevid, Spencer, & Beverly (2005) said, a feeling of fear, or worry that is not certain of the cause or a feeling of pressure in a person's life (Nugraha, 2020). Anxiety has several levels, including mild anxiety, moderate anxiety, severe anxiety, and panic (Jannati & Arisma, 2021). Factors that influence anxiety depend on a person's character growth structure, namely age, gender, level of learning or education, and social support from family, friends, and society (Wakhyudin & Putri, 2020). In addition, factors that cause anxiety include aspects of generation or innate, area, and individual or environment (Rohma Kurnia, 2022). The World Health Organization estimates that by 2020 anxiety will be the main trigger for disability for people around the world and mental disorders will contribute to around 15% of global morbidity (Murwani & Utari, 2021). The prevalence of anxiety disorders in Indonesia from the results of the 2018 Basic Health Study (Riskesdas) shows that 6% of those aged 15

years and over or around 14 million Indonesians face emotional mental disorders indicated by indications of anxiety and mental stress (Wardoyo, 2020).

Learning in a higher academy requires students to complete a thesis or final assignment to obtain a bachelor's degree (Carsita, 2018). A thesis or scientific work is an educational process with the aim of honing students' skills in analyzing a problem by thinking critically. In the process of arranging a thesis, students certainly have fear and anxiety because humans have hearts and feelings (Malfasari et al., 2019). Students are very vulnerable to anxiety, psychosocial stressors are one of the factors of anxiety in students where each situation can cause changes in a person's life so that the person is forced to adapt or overcome the stressors that arise, anxiety can arise from a reaction to the future or arise as an obstacle if it arises excessively (Silalahi, 2021). The level of anxiety felt by students varies, anxiety will greatly



affect students' concentration and thinking energy. Students are not free from obstacles and problems throughout the thesis writing process, these problems can come from internal or external aspects. Aspects that influence the thesis writing process vary widely, ranging from difficulties in selecting and determining the title, writing or expressing ideas in written form, finding literature, and lacking self-motivation. Meanwhile, students writing a thesis while working must be able to divide their energy, thoughts, and time between lectures, work, or family so that they feel afraid of not being able to complete the thesis on time (Malfasari et al., 2019). The consequences of these various difficulties can grow into negative feelings that can give rise to tension, frustration, low self-esteem, worry, and loss of motivation can also give rise to anxiety (Wakhyudin & Putri, 2020).

The results of a study conducted on 41 students of STIKes Widyagama Husada Malang found that 27 respondents (65.9%) faced low anxiety, 10 respondents (24.4%) faced medium anxiety and 4 respondents (9.8%) faced severe anxiety when writing their thesis. Of the 4 students (9.8%) who faced severe anxiety, there were also psychological and physiological obstacles such as insomnia, frequent body tremors, and frequent headaches. One of the causes is not being able to follow the flow of the thesis work properly, feeling insecure or worried about their ability to work on the thesis, or having a low level of self-efficacy. This is what causes students to face severe anxiety (Revan Amrizal Naufalda et al., 2023). Adolescence is often referred to as a transitional or transitional period where there is a transition from childhood to adulthood which is accompanied by changes in the body, these changes include physiological, cognitive, and psychosocial changes (Nuandri & Iwan, 2019).

Menstruation is a physiological process that indicates the maturity of the reproductive system that functions for physical and psychological well-being (Armayanti & Damayanti, 2021). Menstruation generally lasts for 3-5 days, but can also last for 7 to 8 days, or even 1 to 2 days, and is accompanied by a little blood. A short menstrual cycle is known as polymenorrhea (menstrual cycle less than 21 days), a long menstrual cycle (more than 35 days) or called oligomenorrhea, and amenorrhea is if you do not menstruate for 3 months, such are 3 types of menstrual cycle problems according to (Guarango, 2022). The comparison of this cycle is determined by several factors, one of which is anxiety or mental stress that causes problems with the metabolic and hormonal systems which are one of the triggers for menstrual disorders (Wardoyo, 2016).

The level of anxiety allows the menstrual cycle process to not run normally. Anxiety causes the formation of systemic changes in the body, especially in the nerve layer. Anxiety stimulates the release of the hormone cortisol where the hormone cortisol will suppress the hypothalamus and interfere with the work and function of the hypothalamus, one of which is to produce menstrual hormones, namely follicle-stimulating hormone (FSH) and luteinizing hormone (LH). The formation of changes in prolactin or endogenous opiates affects the elevation of basal cortisol, thereby reducing the LH hormone. If there is a disturbance in the LH and FSH hormones, it will affect the formation of estrogen and progesterone which will cause menstrual cycle irregularities (Damayanti et al., 2023). According to information from the 2017 RISKESDAS, in Indonesia, women aged 10-59 years who experience regular menstruation are 68% and those who experience irregular menstruation problems in 1 year are 13.7%. The problem of irregular menstruation at the age of 17-29 years and the age of 30-34 years is quite large, namely 16.4%. The reasons given by women aged 10-59 years who experience irregular menstruation are due to mental stress and many thoughts. The results of other research show that in 7th semester female students of the Nursing Science Study Program at Aisyiyah University of Yogyakarta, 24 respondents (37.50%) did not face anxiety, 32 respondents (50.0%) experienced mild anxiety, 6 respondents (9.37%) had moderate anxiety, 2 respondents (3.13%) had severe anxiety, and there were no respondents who experienced panic anxiety (0%). Menstrual cycle disorders experienced by 7th semester female students of the Nursing Science Study Program at Aisyiyah University of Yogyakarta showed that there were 21 respondents (32.80%) who had regular menstrual cycles and 43 respondents (67.20%) had irregular menstrual cycles. Based on the research results, it is described that most female students have mild anxiety levels and experience irregular menstrual cycles, namely 30 respondents (46.88%) (Purwati & Muslikhah, 2021). The consequences of menstrual cycle problems if not handled immediately and properly will increase various risks of reproductive diseases such as fertility disorders, increase various risks of diseases such as uterine polyps, uterine cancer and infertility. So that changes that occur in the menstrual cycle are feared to affect the quality of life of women in the future (Safriana & Sitaresmi, 2022).

In a preliminary study conducted by researchers in February 2024 on 9 sixth semester female students of the D3 Midwifery Study Program at the Maharani Health Sciences College

who were completing their Final Assignment, it was found that 9 (100%) female students experienced anxiety. Some of the forms of anxiety felt included 8 people (88.9%) having difficulty starting sleep and poor sleep quality because they thought about the title, references or references and the process of completing the final assignment itself; 7 people (77.8%) were afraid of not being able to complete their final assignment on time; 6 people (66.7%) experienced emotional changes and became more sensitive such as getting angry easily; 5 people (55.6%) experienced decreased appetite; 7 people (77.8%) experienced frequent dizziness; 2 people (25%) sometimes felt short of breath and often experienced digestive problems. Based on the preliminary study, the researcher is interested in identifying and conducting research on "The Relationship between Anxiety Levels and Menstrual Cycle Disorders in Undergraduate Nursing Students Writing Theses at Maharani Health College". Anxiety felt by female students in doing their final assignments or in writing their theses can be overcome by the method of getting used to the level of anxiety felt to solve the problems experienced. Female students must have positive coping adjustments so as not to result in physiological changes such as menstrual cycle disorders.

RESULTS

In this study, analysis relationship between anxiety levels with menstrual cycle disorders in undergraduate nursing study program students was carried out using bivariate analysis. The things to be analysed were respondents' characteristics anxiety levels and menstrual cycle disorders.

Table 1. Cross Tabulation of Anxiety Levels with Menstrual Cycle Disorders in Undergraduate Nursing Study Program Students at Maharani Health Sciences College, May 2024.

Anxiety levels	Menstrual cycle disorders				Total	
	No		Yes			
	n	%	n	%	n	%
Mild	1	2.5	0	0	1	2.5
Moderate	17	42.5	14	35	31	77.5
Severe	1	2.5	7	17.5	8	20
Total	19	47.5	21	52.5	40	100

Based on table 1, it is explained that the majority of respondents experienced moderate menstrual disorders, as many as 14 people (35%) and no one (0.00%) did not experience menstrual disorders

Table 2. Relationship between Anxiety Level and Menstrual Cycle Disorders in Nursing Study Program Students, at Maharani Health Sciences College, May 2024.

	Value	.df	Asymptotic Significance (2-sided)	Exact Sig. (2- sided)	Exact Sig. (1- sided)	Point Probability
Fisher's Exact Test	5.528			0.046		

From the Fisher Exact Test, the p value was obtained = $0.046 < \alpha (0.05)$ so it can be concluded that H_0 is rejected and H_1 is accepted, which means there is a relationship between anxiety levels and menstrual cycle disorders.

MATERIALS AND METHODS

This type of research is research with a survey analytical approach using a cross-sectional design. This research was carried out at the at Maharani Health Sciences College on May 6-12, 2024, with a population of 66 students. This research sample used a purposive sampling technique. According to calculations based on the Slovin formula, this research will use a sample of 40 students. The data collected in this research is primary data obtained from distributing questionnaires related to anxiety questionnaires adopted from previous research that had undergone validity and reliability tests.

Data collection was carried out after respondents were given PSP (explanation before consent) and signed informed consent. After the data is collected, quantitative data processing is carried out which includes editing, coding, entry and cleaning stages. Data analysis was carried out descriptively to see the frequency distribution of each variable. The data that has been collected is then subjected to statistical tests, namely using a *Fisher Exact Test*. The results of this analysis are then used to conclude a hypothesis which has been approved by the health research ethics commission of the Politeknik Kesehatan Kemenkes Malang with letter number DP.04.03/F.XXI.31/0376/2024.

DISCUSSION

In the data analysis, the researcher used the Fisher Exact Test. Data analysis shows that the Fisher Exact Test obtained a p value = 0.046 where $\alpha (0.05)$, so it can be concluded that H_0 is rejected and H_1 is accepted, which means there is a relationship between anxiety levels and menstrual cycle disorders.

According to (Damayanti et al., 2023), anxiety is related to trauma or unpleasant experiences. In this case, unpleasant experiences experienced by students during the final semester of learning such as difficulty finding references in completing final assignments, many assignments making it difficult to divide time, online learning and other things. The level of anxiety experienced by students varies. Anxiety will greatly affect students' concentration and thinking power. Moreover, for students who have worked or done internships, their anxiety levels are greater than students who only focus on studying.

Anxiety often causes irregular menstrual cycles. This happens because anxiety as a stimulus of the nervous system is transmitted to the central nervous system, namely the limbic system through nerve transmission, then through the autonomic nerves it will be transmitted to the hormonal glands (endocrine) to release neurohormonal fluid to the pituitary through the frontal system to release gonadotropins in the form of FSH and LH, the production of both hormones is influenced by Gonadotropin Releasing Hormone (GnRH) which is channeled from the hypothalamus to the pituitary. The release of GnRH is greatly influenced by the estrogen feedback mechanism to the hypothalamus which then affects the menstrual process (Wardoyo, 2016). External factors, such as demands in activities or work, and under pressure can trigger stressors and result in activation of sympathetic responses involving the Hypothalamus-anterior pituitary-adrenal cortex pathway. The hypothalamus secretes Corticotropin Releasing Hormone (CRH) then goes to the anterior pituitary, and in the anterior pituitary it secretes Adrenocorticotrophic Hormone (ACTH) and the adrenal cortex secretes adrenaline and cortisol, causing adrenaline and cortisol levels to increase. In addition to increased cortisol levels, there are Gamma-Amino Butyric Acid (GABA) antagonists that cause a decrease in GABA receptors and result in a decrease in the inhibition of anxiety. Because the anxiety mechanism and the menstrual mechanism pass through the same pathway, namely in the hypothalamus and anterior pituitary, there can be inhibition of the menstrual cycle pathway (H-H-O Axis) namely in the hypothalamus, where GnRH secretion is inhibited

by CRH and Cortisol (glucocorticoids) either directly or indirectly resulting in delayed egg maturation in the follicular phase and causing the menstrual cycle to be disrupted. FSH and LH inhibition caused by cortisol can disrupt follicle development and also affect the production of estrogen and progesterone, causing irregularities in the menstrual cycle (Baswara, 2019).

There is a match between theory and fact that undergraduate nursing students who are writing their theses at STIKes Maharani encounter various difficulties, starting from difficulty in determining the title of the thesis, difficulty in finding references, difficulties during the process of working on the thesis itself, difficulties in dividing the respondent's time, energy and thoughts between completing the thesis, college assignments or obligations in carrying out work and taking care of his family so that the respondent feels less focused on completing the thesis and in the end the respondent experiences anxiety because the thesis cannot be completed smoothly while the target time for completing the thesis.

In the results of the study from 40 respondents, data on anxiety levels showed 1 person (2.5%) with a mild level of anxiety, 31 people (77.5%) with a moderate level of anxiety, 8 people (20%) with a severe level of anxiety and no respondents experienced panic. In addition, from the level of anxiety, data was also obtained on respondents who experienced or did not experience disorders in their menstrual cycle. As many as 1 person (100%) experienced mild anxiety and did not experience menstrual cycle disorders. Of the 31 people (100%) who experienced moderate anxiety, there were 14 people (45.2%) who experienced menstrual cycle disorders and 17 people (54.8%) did not experience menstrual cycle disorders. While from 8 people (100%) who experienced severe anxiety, there were 7 people (87.5%) who experienced menstrual cycle disorders and as many as 1 person (12.5%) who did not experience menstrual cycle disorders.

So it can be concluded from the results of the analysis that the difference in anxiety levels experienced by respondents can indeed interfere with their menstrual cycle, the higher the level of anxiety experienced by respondents, the more people will experience disorders in their menstrual cycle. Apart from the anxiety experienced, the causes of menstrual cycle disorders are also supported by other factors, both internal and external, as well as the coping mechanisms of each respondent in dealing with the problems experienced during the thesis writing process.

Based on the research results, it was found that 27 female students (67.5%) were married and 34 female students (85%) were working. Therefore, completing a series of graduation requirements such as final assignments or theses, assignments and other exams are things that can cause anxiety for female students of the Nursing Undergraduate Study Program at Maharani Health College because female students experience several obstacles such as difficulty in dividing energy and thoughts in dividing time for work, family, and completing the thesis. In addition, female students also have difficulty in expressing their ideas during the preparation of the thesis, and feel a lack of self-motivation so that the completion of the thesis is hampered. The process of working on a thesis requires extra energy and thought as well as time to complete the scheduled thesis so that a feeling of worry arises if the thesis cannot be completed on time. Thus, all the obstacles that arise during the preparation of the thesis can trigger anxiety in female students. The various triggers of anxiety experienced by respondents are different, and the coping mechanisms of each respondent in dealing with a problem are also different, so the occurrence of menstrual cycle disorders in respondents is also different. This study proves that there is a relationship between anxiety levels and menstrual cycle disorders in female undergraduate Nursing students who are writing their theses at STIKes Maharani.

CONCLUSIONS

The results of this study prove that there is a relationship between anxiety levels and menstrual cycle disorders in female undergraduate students of the Nursing Study Program who are writing a thesis at STIKes Maharani. A thesis is something that must be faced and undergone by every female undergraduate student of the Nursing Study Program at STIKes Maharani as a graduation requirement. The researcher hopes that the anxiety that arises in female students during the preparation of their thesis can be anticipated by carrying out positive activities or managing good coping mechanisms so that the anxiety that arises does not affect and does not interfere with their menstrual cycle which can later have an impact on the health status of female students in the future.

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All authors contributed from the initial proposal, licensing, and research to the preparation of the manuscript and acceptance of this manuscript.

CONFLICT OF INTEREST

There is no conflict of interest from educational institutions and research fields.

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