The Effect of Exercise on Reducing Dysmenorrhea in Nursing Students

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ABSTRACT

Introduction: Menstrual pain (dysmenorrhea) is caused by an imbalance of progesterone hormones in the blood, resulting in pain. Psychological factors also play a role in the occurrence of dysmenorrhea in some women. The purpose of this study was to determine the effect of *dysmenorrhea* exercises in reducing *menstrual* pain in female students during menstruation.
Method: This study was conducted using a quasi-experimental *design* in one group (*one group pre-test-post-test design).* Sampling was done using *purposive sampling*. The sample in this study consisted of 15 people.
Results: The research results were analyzed using a T-test, namely a paired simple T-test, because the distribution was normal. The results showed a t-value of 8.951 with a significance value of the Paired Sample t-test of 0.000, which was smaller than the error rate (α) of 0.05.
Conclusion: There is an effect of dysmenorrhea exercises in reducing dysmenorrhea.
Future researchers are expected to better control factors that can affect the degree of dysmenorrhea, such as psychological factors, constitutional factors, and activity, and to perform dysmenorrhea exercises every morning or evening so that the results of reducing the degree of dysmenorrhea can be maximized.
Keywords: Menstrual Cramps Exercise, Menstrual Cramps.

INTRODUCTION

The World Health Organization (WHO) defines health as "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity." Currently, the emphasis is on improving health, well-being, and self-care (Brunner & Suddart, 2002).

Menstruation is a natural process that occurs in women. Menstruation is regular bleeding from the uterus as a sign that the reproductive organs have fulfilled their function. This period will change behavior in several aspects, such as psychology and others. Women usually experience their first menstruation (menarche) between the ages of 12 and 16. A normal menstrual cycle occurs every 22 to 35 days (Eny Kusmiran, 2011).

Menstrual pain (dysmenorrhea) is caused by an imbalance of progesterone hormones in the blood, resulting in pain. Psychological factors also play a role in the occurrence of dysmenorrhea in some women. The causes of menstrual pain can vary, ranging from a disease process (e.g., pelvic inflammation), endometriosis, tumors or uterine abnormalities, imperforate blood vessels or vagina, and excessive stress or anxiety. However, the most common cause of menstrual pain is thought to be hormonal imbalance and is not related to the reproductive organs (Arifan, 2007).

Adolescence is a dynamic phase of development in a person's life. This period is a transition from childhood to adulthood, characterized by accelerated physical,

mental, emotional, and social development.

Female puberty begins with menstruation, one of the hallmarks of female maturity. Menstruation can be defined as periodic vaginal bleeding due to the shedding of *the uterine endometrium.* Healthy, non-pregnant adult women regularly shed blood from their reproductive organs every month. The menstrual cycle plays a significant role in this regard, as it occurs regularly every month in fertile women. The menstrual cycle has a noticeable effect on most women, both physically and emotionally, or both.

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Women who experience menstruation longer than normal will experience pain during menstruation. The longer the menstruation occurs, the more often the uterus contracts, resulting in more *prostaglandins* being released. Excessive *prostaglandin* production causes pain (Shanon, 2006).

Menstrual pain (dysmenorrhea) is pain during menstruation that disrupts a woman's daily life and prompts her to seek examination or consultation with a doctor, health center, or midwife (Manuba, 2010).

METHOD

The research design is a research plan that is structured in such a way that it can guide the research to obtain answers to research questions and serve as a tool for researchers to control various variables that influence a study (Sastoasmoro & Ismael, 2010). This study used a quasi-experiment in one group (one group pre-test – post-test design). This design is a form of experimental design that has better interval validity than a pre-experiment but is weaker than a true experiment.

Time and Location of Research

This research was conducted at Muhammadiyah University Bengkulu in the nursing science study program, Faculty of Health Sciences, where the research plan was carried out from April 10 to May 10.

RESULTS

Results of Univariate Analysis

Table 1. Frequency Distribution of Pain Scale Levels Before Performing Dysmenorrhea Exercises in Nursing Students at Muhammadiyah University Bengkulu

No	Pain scale	Frequency	Percentage
1	No pain	0	0
2	Mild pain	1	6.7
3	Moderate pain	9	60.0
4	Severe pain	4	26.6
5	Very painful	1	6.7
	total	15	100

Experienced severe pain and 1 person (6.7%) experienced very severe pain. (60.0%) experienced moderate pain, 4 people (26.6%) experienced severe pain, and 1 person (6.7%) experienced very severe pain.

Based on the table above, it shows that before the exercise therapy was conducted, no respondents experienced no pain with a percentage of 0%, while 1 person (6.7%) experienced mild pain, 9 people (60.0%) experienced moderate

pain, 4 people (26.6%) experienced severe pain, and 1 person (6.7%) experienced very severe pain.

Table 2. Frequency Distribution of Pain Scale Levels After Performing Exercise for Dysmenorrhea in Nursing Students at Muhammadiyah University of Bengkulu

No	Pain scale	Frequency	Percentage (%)
1	No pain	4	26.6
2	Mild pain	7	46.7
3	Moderate pain	3	20
4	Severe pain	1	6.7
5	Very Painful	0	0
	Total	**15**	**100**

Based on the table above, it shows that after undergoing dysmenorrhea exercise therapy, there were 4 people (26.6%) who did not experience pain, 7 people (46.7%) who experienced mild pain, 3 people (20.0%) who experienced moderate pain, and 1 person (6.7%) who experienced severe pain, while there were no respondents who experienced severe pain, with a percentage of 0%.

Bivariate Analysis

Table 3. Frequency distribution before and after performing dysmenorrhea exercises among female students in the Nursing Science Program at Muhammadiyah University of Bengkulu

No	Pain scale	Pre-test	Percentage	Posttest	Percentage (%)
1	No pain	0	0	4	26.6
2	Mild Pain	1	6.7	7	46.7
3	Moderate pain	9	60.0	3	20.0
4	Severe pain	4	26.6	1	6.7
5	Very Painful	1	6.7	0	0
	Total	**15**	**100**	**15**	**100**

Based on the table above, with the pain scale before and after performing dysmenorrhea exercises, before the exercises, none of the respondents reported no pain (0%), while after the exercises, 4 respondents (26.6%) reported no pain. One respondent (6.7%) experienced mild pain before the dysmenorrhea exercise, and after the exercise, 7 respondents (46.7%) experienced mild pain. Before the dysmenorrhea exercise, 9 respondents (60.0%) experienced moderate pain, and after the exercise, 3 respondents (20.0%) experienced moderate pain. Respondents who experienced severe pain before dysmenorrhea exercise included 4 people (26.6%), and after dysmenorrhea exercise, there were 1 person (6.7%). Then, respondents who experienced very severe pain before dysmenorrhea exercise included 1 person (6.7%), and after dysmenorrhea exercise, there were no respondents who experienced very severe pain.

DISCUSSION

1.1 Distribution of Dysmenorrhea Exercise Among Nursing Program Students at the Faculty of Health Sciences

The distribution results based on the intensity of dysmenorrhea exercises among 15 female nursing program students at the Faculty of

Health Sciences, from the frequency of students who performed exercises in semesters 2, 4, 6, and 8. One type of exercise that can be done to reduce the intensity of dysmenorrhea is dysmenorrhea exercises. Dysmenorrhea exercises are exercises with movements that target the lower abdominal muscles, close to the uterus, and can be done independently at home (Uzoma, 2013).

Regular exercise can reduce stress and fatigue, thereby indirectly reducing pain. Getting into the habit of light exercise and regular physical activity such as walking, running, cycling, or swimming before and during menstruation can improve blood flow to the muscles around the uterus, thereby alleviating or reducing pain. This exercise should be done for at least 30 minutes, 3-5 times a week (Proverawati and Misaroh, 2009).

1.2 Pain intensity frequency before performing dysmenorrhea exercises

Results of the distribution based on the occurrence of dysmenorrhea among nursing students at the Faculty of Health Sciences, Muhammadiyah University of Bengkulu.

It was found that before the dysmenorrhea exercise therapy was performed, 1 person (6.7%) experienced mild pain, 9 people (60.0%) experienced moderate pain, 4 people (26.6%) experienced severe pain, and 1 person (6.7%) experienced very severe pain.

1.3 Frequency of pain levels after performing dysmenorrhea exercises.

Results of the distribution based on dysmenorrhea occurrence among nursing program students at the Faculty of Health Sciences, Muhammadiyah University of Bengkulu. After performing dysmenorrhea exercises, it can be seen that: From the table above, it can be seen that after performing dysmenorrhea exercise therapy, there were 4 people (27.7%) who did not experience pain, 7 people (46.7%) who experienced mild pain, 3 people (20.0%) who experienced moderate pain, and 1 person (6.7%) who experienced severe pain.

Nurses are needed to provide nursing care to women experiencing dysmenorrhea. The nursing diagnosis that can be established in the case of dysmenorrhea is pain associated with increased uterine contractility. The role of nurses in managing pain is to alleviate or reduce pain to a level that is acceptable to the patient. Actions that can be taken include non-pharmacological measures such as acupressure, therapeutic touch, distraction, hypnosis, cutaneous stimulation, music therapy, warm compresses, and massage (Wilkinson, 2006).

1.4 The Effect of the Intensity of Dysmenorrhea Exercises on the Occurrence of Dysmenorrhea Before and After Performing Dysmenorrhea Exercises

Based on the results of testing using the Kolmogorov-Smirnov test analysis tool, the calculated t-value was 8.951 with a p-value of 0.000 < 0.05, which means that dysmenorrhea exercises have an effect in reducing dysmenorrhea in nursing students at the Faculty of Health Sciences, Muhammadiyah University of Bengkulu.

According to Anurogo and Wulandari (2009), there are steps that are usually taken by those who experience menstrual pain, but not to a severe degree, namely: avoid stress. The body reacts when experiencing stress. This stress factor can reduce resistance to pain. The first sign indicating a state of stress is the appearance of reactions such as muscle tension in the individual, which is filled with stress hormones that cause an increase in blood

pressure, heart rate, body temperature, and breathing. The body will produce excessive amounts of adrenaline, estrogen, progesterone, and prostaglandins during times of stress. Estrogen can cause excessive uterine contractions, while progesterone inhibits contractions.

This excessive increase in contractions causes pain. In addition, adrenaline also increases, causing the body's muscles to tense up, including the uterine muscles, which can cause pain during menstruation (Prawirohardjo, 2009).

CONCLUSION AND RECOMMENDATIONS

Conclusion

Based on the results of research on the effect of dysmenorrhea exercises in reducing dysmenorrhea in nursing students at Muhammadiyah University Bengkulu. The results of the study used a T-test, namely a paired simple T-test, because the data was normally distributed. The results showed a calculated t-value of 8.951 with a significant value from the Paired sample t-test of 0.000, which is smaller than the error rate (α) of 0.05, meaning that there is an effect of dysmenorrhea exercises in reducing dysmenorrhea.

RECOMMENDATIONS

Given the various limitations and shortcomings of this study, the author provides the following recommendations:

1. For the Nursing Program, Faculty of Health Sciences, Muhammadiyah University of Bengkulu.

   The management and treatment of menstrual pain requires cooperation from various parties, one of which is nursing as a health discipline that must provide intervention in the problem of menstrual pain (dysmenorrhea).
2. For students/institutions

   Respondents and the community, especially female students, are encouraged to perform dysmenorrhea exercises independently before menstruation to reduce the severity of dysmenorrhea.
3. For Health Workers

   Healthcare workers can provide consistent nursing care for adolescent girls with dysmenorrhea and can provide information on effective ways to reduce dysmenorrhea, either through counseling or seminars.

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