

## The Effectiveness of Kneading Massage in Reducing Dysmenorrhea Pain in Stikes Aksari Indramayu Students

Masliha

Nursing Diploma 3 Study Program, Aksari College of Health Sciences (STIKes).

\*Corresponding Author: [liamasliha09@gmail.com](mailto:liamasliha09@gmail.com)

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### ABSTRACT

Menstruation is a bleeding process that occurs periodically or cyclically from the endometrium. During menstruation, complaints and disorders often occur, especially in productive women, especially teenagers, who often experience menstrual pain or dysmenorrhea. One of the nursing actions to overcome this is kneading massage. The aim of the research was to determine the effectiveness of kneading massage in reducing dysmenorrhea pain in Stikes Aksari Indramayu students. This type of research is quantitative, using a quasi-experimental method with a one-group pretest-posttest design approach. The characteristic of this type of research is that it reveals cause-and-effect relationships by involving a group of subjects. The subject group was observed before the intervention, then observed again after the intervention. The population in this study was all female students at the Aksari College of Health Sciences (STIKes), totaling 46 people in April 2024. The sampling technique used was accidental sampling. The data collection technique uses primary data directly obtained from respondents, with a sample size of 28 people. Data analysis uses frequency distribution and paired samples test statistical tests. Results: most of the respondents, 17 people (60.7%), had menarche at the age of 11 years; all respondents, 28 people (100%), had high school education; most of the respondents, 12 people (42.9%), had a family history of experiencing pain during menstruation; and the majority of respondents, 19 people (67.9%), had experienced experiencing severe pain during dysmenorrhea. The results of calculating the "t" value obtained a p-value of 0.000 (2-way test). Conclusion: Ho is rejected, and statistically, there is a significant difference in dysmenorrhea pain in adolescents before and after intervention in the form of kneading massage therapy.

## Introduction

Teenagers are one of the important factors in preparing for Golden Indonesia 2045. For this reason, teenagers are expected to be able to help themselves, especially in the health sector, so that when the demographic bonus occurs, teenagers are ready both physically and mentally so that their abilities are not disturbed by health problems. . (Nuraini et al., 2022). According to data from the Central Statistics Agency (BPS) for 2023, the estimated percentage of teenagers is 23.18 percent, or almost a quarter of Indonesia's population. (BPS, 2023). Meanwhile, according to the Indramayu Regency Central Statistics Agency, in 2023, the population in the 10–14 year age group will occupy the highest position in the 10–24 year age group at 146,831 people, followed by the 15–19 year age group. 142,528 people, and finally, the age group of 20–24 years was 124,417 people. If this figure is expressed as a percentage, it reaches 24.1% of the total population of Indramayu Regency, which amounted to 1,719,000 people that year.



On the one hand, the large number of teenagers can become a national asset as well as a problem if they are not trained well. The quality of Indonesian society in the next 10–20 years will be influenced by the quality of today's youth. In addition, with the flow of information being uncontrolled and sometimes having a negative impact, the government should make various efforts to monitor and provide guidance and counseling so that Indonesian teenagers avoid unhealthy lifestyles, one of which is reproductive problems.

Adolescent reproductive health is a comprehensive state of health, covering physical, mental, and social aspects, and not just freedom from disease or abnormalities in all matters relating to the reproductive system, its functions, and the reproductive process itself. (Hasudungan & Kurniawan, 2018). Reproductive health is a state of complete physical, mental, and social health in which a person is able to carry out their reproductive functions and processes healthily and safely. Meanwhile, the Ministry of Health of the Republic of Indonesia explains that the aim of reproductive health is to create a healthy young generation to improve the level of reproductive health and prepare for family life to support efforts to improve the quality of future generations. The role of the adolescent reproductive system in contributing to the production of menstruation (menarche) and menstruation in girls. (Isnainy et al., 2021)

Menstruation is a bleeding process that occurs periodically or cyclically from the endometrium. During menstruation, complaints and disorders often occur, especially in productive women, especially teenagers, who often experience menstrual pain or dysmenorrhea. (Ilham et al., 2022). During menstruation, some women experience various menstrual irregularities that are quite severe. For example, some people experience cramps due to smooth contractions of the uterine muscles, headaches, stomach aches, excessive anxiety, feeling tired and weak, a stuffy nose, and even the desire to cry continuously, overeating, and even excruciating menstrual pain. (Amelia, 2023)

Pain during menstruation and dysmenorrhea are complaints that are often found in women of childbearing age, including teenagers, forcing them to consult a doctor for treatment and consultation. Dysmenorrhea affects 30–75% of the population, and about half require treatment. Dysmenorrhea, or menstrual pain, is a symptom that young women often experience during menstruation. (Siagian, 2019) Meanwhile, according to Zuraida, dysmenorrhea is divided into two types, namely secondary dysmenorrhea and primary dysmenorrhea. (Zuraida & Aslim, 2020) In Indonesia, the incidence of dysmenorrhea reaches 64.25%. Many teenagers report that their daily activities are disrupted or that they even miss school due to the dysmenorrhea they experience (Bitzer, 2015). It is estimated that 30% to 60% of adolescent girls suffer from dysmenorrhea, with 7–15% of them missing school or work due to menstrual pain. (Pasariny, 2017). According to Vera Iriani, dysmenorrhea can be treated in several ways. Pharmacologically, it can be overcome by taking NSAIDs or hormonal therapy, but this method can cause side effects such as digestive disorders. (Dysmenorrhea: Vera Iriani Abdullah, Nuur Octascriptiriani Rosdianto, Kartika Adyani, Yeni Rosyeni, Siti Rusyanti, Sumarni, Google Books, n.d.) Meanwhile, one non-pharmacological method that can be used is massage. Kneading massage is a massage that has been researched to reduce the incidence of dysmenorrhea. (Rahmawati et al., 2021) Kneading massage can increase blood flow and reduce the ischemia of contracted muscles. Kneading massage is a relaxation technique that is safe, simple, does not require costs, does not cause side effects, and can be done independently or with the help of other people. (Ojoawo et al., 2018). This is confirmed by Susanti S's research: the average decrease in intensity on the pre-test pain scale was 4.50, and the average decrease in pain on the post-test scale was 2.06, where  $P = 0.000$  ( $\alpha = 0.05$ ), which means  $P$  is less than  $\alpha \leq 0.05$ , which means  $H_a$  is accepted. Thus, it can be concluded that there is an effect of kneeling massage on reducing the intensity of pain due to dysmenorrhea (Susanti S. et al., 2019).



Based on the results of the first survey conducted by researchers, of the 10 people who reported, 6 (60%) used dysmenorrhea medication and 4 (40%) did not use medication. Of the 10 people, 40% reported mild pain, 40% moderate pain, and 20% severe pain, and most do not know the benefits of knee massage as a pain reliever during menstruation that is safe, cheap, and free. Most respondents treated menstrual pain using eucalyptus oil and maintained bed rest, and some even did nothing. Currently, a phenomenon that has emerged is that teenagers who experience dysmenorrhea pain are mostly left alone so that it interferes with their activities, and if it gets worse, they use drugs such as analgesics (Antalgin, Mefinal, etc.), which pose a risk to their stomach condition. For this reason, it is important for young women to use non-pharmacological treatments that can be used, including knee massage. Non-pharmacological pain management is safer because it does not cause side effects like drugs because non-pharmacological therapy uses the body's physiological processes. (Aprianti, 2023).

The reason for conducting the research is that young women who experience dysmenorrhea experience pain, whether mild, moderate, or severe. Dysmenorrhea interferes with young women's activities when studying or doing other activities. The head of the institution strongly supports conducting research to find out how big the impact of pain is on activity disorders. Study. Based on the data presented by the researchers, it is important to treat pain in cases of dysmenorrhea that cause discomfort to a person, so it is necessary to immediately provide safe treatment for dysmenorrhea pain using non-pharmacological methods, and based on this, efforts are needed to treat dysmenorrhea pain. The author continued to conduct research. with the title "Effectiveness of Kneading Massage in Reducing Dysmenorrhea Pain in Stikes Aksari Indramayu Students" And the aim of this research is to find out how the effectiveness of kneeling massage reduces dysmenorrhea pain in Stikes Aksari Indramayu students.

## Methods

This type of research is quantitative, using a quasi-experimental method with a one-group pretest-posttest design approach. The characteristic of this type of research is that it reveals cause-and-effect relationships by involving a group of subjects. The subject group was observed before the intervention, then observed again after the intervention. The population in this study was all female students at the Aksari College of Health Sciences (STIKes), totaling 46 people in April 2024. The sampling technique used was accidental sampling. The inclusion criteria for this research were female students at STIKes Aksari who were experiencing menstrual pain, were cooperative, and were willing to undergo kneading massage intervention, while the exclusion criteria were female students who were on leave, were not willing to undergo intervention, and did not experience other illnesses that interfered with their activities. The data collection technique uses primary data directly obtained from respondents, with a sample size of 28 people. The instrument used to measure the pain scale uses the NRS (Numeric Rating Scale) to determine the level or degree of pain, which is 0 (no pain), 1-4 (mild pain), 5-6 (moderate pain), 7-10 (severe pain), while the Kneading Massage intervention uses standard SOPs. Data analysis uses frequency distribution and paired samples test statistical tests.

## Results

### Description of respondent characteristics based on age of menarche, education, family history, and dysmenorrhea experience

It is necessary to know the characteristics of the initial age of menarche to see which age range teenagers experience dysmenorrhea pain, usually found in the majority of teenagers aged



11 to 20 years, with many incidents of dysmenorrhea pain in the average productive age with a minimum age of 15 years and a maximum age of more than 20 years. More detailed characteristics of respondents based on age at menarche, education, family history, and experience of dysmenorrhea can be seen in Table 1 below:

**Table 1**  
**Distribution of Respondents Based on Age of Menarche, Family History, and Experience of Dysmenorrhea (n = 28)**

Characteristics	Amount (Person)	Percentage (%)	
Menarche Age	11 years old	17	60,7
	12 – 13 Years	11	39.3
Education	Senior High School	28	100
Family History	There is a history of dysmenorrhea	12	42.9
	No history of dysmenorrhea	16	57.1
Dysmenorrhea Experience	Severe pain	19	67.9
	Mild/moderate pain	9	32.1

Characteristics of adolescent respondents with dysmenorrhea pain based on age of menarche at the STIKes AKSARI educational institution show that the majority of respondents, 17 people (60.7%), had menarche at the age of 11 years. It can be assumed that dysmenorrhea pain in the event of primary dysmenorrhea is menarche at an early age; perhaps at that age there is still a lack of experience regarding pain management in the event of dysmenorrhea pain. Characteristics of respondents based on educational characteristics at the STIKes AKSARI educational institution show that all 28 respondents (100%) have a high school education. It can be assumed that the lack of knowledge about dysmenorrhea pain is mostly experienced by respondents who have a high school education, even though they are currently attending college. This could be related to the level of understanding, especially in efforts to treat pain in dysmenorrhea. Family history characteristics need to be known to see whether the majority of adolescent respondents with dysmenorrhea pain have a family history of pain during menstruation. Based on the characteristics of adolescents with dysmenorrhea pain based on family history at the STIKes AKSARI educational institution, it can be seen that the majority of respondents, 12 people (42.9%), had a family history of experiencing pain during menstruation. It can be assumed that teenagers with dysmenorrhea pain can experience it because of a family history of dysmenorrhea as well. Family history is a risk factor that can increase the occurrence of dysmenorrhea. A family history of dysmenorrhea has a greater potential for dysmenorrhea because it is related to genetic factors. This could be. There is a connection between the genetic characteristics of the mother and her passing on the characteristics to her offspring, indicating that dysmenorrhea pain can occur in families with a history of dysmenorrhea. It is necessary to know the characteristics of the dysmenorrhea experience to see whether teenagers with dysmenorrhea pain, especially in the STIKES AKSARI educational institution, have experienced moderate pain or severe pain so that complaints experienced during menstruation interfere with learning and other activities.

Based on the table above, it can be seen that the majority of respondents were 19 people (67.9%) who stated their experience of experiencing severe pain during dysmenorrhea. It can be assumed that most teenagers with dysmenorrhea report experiencing severe pain; this could be related to the experiences during dysmenorrhea that most teenagers experience.



## Dysmenorrhea Pain Level Before and After Kneading Massage Therapy

The level of pain before and after Kneading Massage therapy can be seen in table 2 below:

**Table 2.**  
**Frequency Distribution of Pain Levels Before and After Exercise Kneading Massage Therapy (n = 28)**

Pain Level	Before		After	
	Amount	%	Amount	%
Moderate Pain	8	28.6	24	85.7
Severe Pain	20	71.4	4	14.3
<b>Total</b>	<b>28</b>	<b>100</b>	<b>28</b>	<b>100</b>

Based on table 2, it can be seen that the pain before the Kneading Massage therapy treatment was carried out by the majority of respondents, 20 people (71.4%) experienced severe pain during Dysmenorrhea and the pain after the Kneading Massage therapy treatment was carried out by the majority of respondents, 24 people (85.7%) experienced a decrease in pain intensity to moderate during Dysmenorrhea, after Kneading Massage therapy.

## Bivariate Analysis

Analysis of the statistical test results of the Paired Samples Test on the effectiveness of Kneading Massage in reducing Dysmenorrhea Pain in AKSARI Indramayu Stikes Students before and after Kneading Massage therapy in adolescents can be seen in table 3 below:

**Table 3**  
**Data Analysis of Paired Samples Test Results on the Effect of Effectiveness of Kneading Massage in Reducing Dysmenorrhea Pain before and after it is carried out Kneading massage therapy (n = 28)**

		Mean	t	df	P Value
Pair 1	Dysmenorrhea pain before Kneading Massage Therapy: Dysmenorrhea pain after Kneading Massage Therapy	2,615	10.795	25	.000

Based on Table 3 and the results of the Paired Samples Test, it can be seen that the average difference between the intensity of dysmenorrhea pain in adolescents before kneading massage therapy and the level of dysmenorrhea pain in adolescents after kneading massage therapy was 2.615. This means that there is a decrease in the pain scale during menstruation after intervention with kneading massage therapy, with an average decrease in the pain scale of 2.6 points. The calculation result of the "t" value is 10,795 with a p-value of 0.000 (2-way test). This means that  $H_0$  is rejected and concludes that statistically there is a significant difference in dysmenorrhea pain in adolescents before and after intervention in the form of kneading massage therapy at the STIKes AKSARI Indramayu Health Education institution.

## Discussion

The results of the univariate analysis showed that the majority of respondents, 60.7%, had menarche at the age of 11 years. This shows that the majority of adolescent girls at STIKes Aksari experience menarche and dysmenorrhea at an early age. It is possible that at that age they still lack experience regarding pain management in the event of dysmenorrhea pain. Most of the respondents' education at the STIKES AKSARI educational institution was 100% high



school. This shows that most of the young women at STIKes Aksari have completed high school, and it can be assumed that the incidence of dysmenorrhea could be due to a lack of understanding, especially in efforts to treat dysmenorrhea pain, even though they are currently attending academic education.

Most of the female adolescent respondents, 42.9% at STIKes Aksari, had a family history of pain during menstruation. This shows that young women at STIKes Aksari have experienced dysmenorrhea pain in their families, and it can be assumed that young women with dysmenorrhea pain can occur because of a family history of dysmenorrhea as well. Family history is a risk factor that can increase the occurrence of dysmenorrhea. The family history of dysmenorrhea is more. There is a potential for dysmenorrhea to occur because it is related to genetic factors. This could be related to the mother's greater genetic characteristics passing on the characteristics to her offspring, indicating that dysmenorrhea pain can occur in families with a history of dysmenorrhea.

Most respondents, 67.9%, experienced severe pain during dysmenorrhea. This shows that most of the female teenagers at STIKes Aksari have experienced severe dysmenorrhea pain, so it can be assumed that most of the teenagers with dysmenorrhea pain stated that they experienced severe pain. This could be related to the experiences during dysmenorrhea that most teenagers experience. Adolescent reproductive health is a healthy condition both physically, psychologically, and socially related to the reproductive system, function, and process in men and women so that they can be responsible for, maintain, and care for the reproductive organs. Adolescent women. During menstruation, the experience stated is that complaints and disorders often arise, especially among women of reproductive age, especially teenagers, namely the frequent occurrence of menstrual pain or dysmenorrhea, whether they have a family history or not. Pain during menstruation (dysmenorrhea) is a complaint that is often found among women of childbearing age, including teenagers, which causes them to go to the doctor for treatment and consultation. Dysmenorrhea is present in 30–75% of the population, and approximately half require treatment. (Djama, N. T., 2017). This is supported by research conducted by Nindhita Ayu A and Farsida in 2014 with the research title "The Relationship between Knowledge and Attitudes of Adolescent Girls regarding Reproductive Health and the Incidence of Dysmenorrhea at SMAN 4 Depok," with a description of the research results as follows: there is a relationship between attitude towards handling complaints of menstrual pain (Dysmenorrhea) with a value of  $p = 0.000$  ( $p < 0.05$ ). This can be interpreted as a person's good and poorly formed attitude; this will influence a person's behavior. So there is a significant relationship between attitude and the incidence of dysmenorrhea, with a value of  $p = 0.000$  ( $p < 0.05$ ). From the analysis results, an OR value of 9.2 was also obtained. (Andhini & Farsida, 2016). This was strengthened by Siti Qomariah's research in 2022, which found that there was an influence between hereditary history of dysmenorrhoea and dysmenorrhoea in teenagers in Pekanbaru City. The OR result was 6.6. All of these studies interpret that several characteristics of the respondents, such as age at menarche, attitude towards treatment experience, and family history of experiencing dysmenorrhea, have a big influence on adolescents who experience dysmenorrhea pain. (Qomariah et al., 2022). Based on this, the author assumes that, because of the age of menarche, attitudes in the experience of dealing with dysmenorrhea and a family history of experiencing dysmenorrhea have a big influence on teenagers who experience dysmenorrhea, so teenagers should be equipped with skills in dealing with dysmenorrhea with non-pharmaceutical therapy, including kneading massage.

The results of the study showed that from data from 28 respondents before the kneading massage intervention was carried out, 71.4% experienced severe pain and 28.6% experienced moderate pain. After the intervention, the results were obtained, and the respondents who experienced severe pain decreased to 14.3% and the pain was moderate. to 85.7%. This shows



that kneeling massage is effective in reducing dysmenorrhea pain. This is in accordance with Kusumadewi's research that kneeling massage is effective in reducing dysmenorrhea pain in 2014 undergraduate nursing students at Stikes Harapan Bangsa Purwokerto (Kusumadewi, 2018) and is reinforced by Bernadetta V's research that treatment of dysmenorrhea in class X female students at SMA Stella Duce 2 Yogyakarta can be done with kneeling massage. For this reason, researchers assume that when young women experience dysmenorrhea pain, they can treat it using kneading massage before being given other pharmacological drugs. Based on the analysis test, a "t" p-value of 0.000 was obtained (2-way test). This means that  $H_0$  is rejected and concludes that statistically there is a significant effect on reducing the pain scale in adolescents who experience dysmenorrhea during menstruation before and after kneading massage therapy at the STIKes AKSARI Indramayu Health Education institution. This can be explained by teenagers with pain during menstruation who received kneading massage therapy and experienced a decrease in the dysmenorrhea pain scale.

This is in accordance with research by Sumiati et al., which found that kneading massage can reduce the intensity of dysmenorrhoea. Sumiati, E., Sepriana, C., Agatha, M. Y., & Oktiviani, D. (2017). Strengthened by Putri Lisdiana Rahmawati's research (vol. 1, 2020) regarding "a combination of effleurage and kneading massage can reduce the intensity of dysmenorrhoea" with the results shows that the p value of the effleurage and kneading groups and the combination of effleurage and kneading massage has a p value  $<0.05$ , so it can be It is said that effleurage, kneading, and a combination of effleurage and kneading massage can reduce the intensity of dysmenorrhoea. (Rahmawati et al., 2021) With kneading massage, there is an increase in the number of blood capillaries so that the amount of blood flow, oxygen, and nutrients to the ischemic area due to contraction becomes greater. Kneading massage helps increase the capillarity of blood vessels, which can increase the flow of oxygen and nutrients to the tissues so that blood vessels that were originally ischemic due to diamenorrhoea can have their oxygen needs met. This massage allows the body to receive maximum stimulation to relieve dysmenorrhoea. (Rahmawati et al., 2021). Based on this, the author assumes that since kneading massage has a big influence on reducing pain when dysmenorrhea occurs, the families of young women should be given education so they can help themselves when dysmenorrhea occurs, one of which is by learning kneading massage.

## Conclusion

Based on the results of the previous research and discussion, the research conclusions can be drawn as follows: Characteristics of age at menarche: 17 people (60.7%) had more menarche at the age of 11 years. In terms of education, the majority had high school education and were in academic education. Characteristics of respondents In terms of education for adolescents with dysmenorrhea pain, based on educational characteristics at the STIKes AKSARI educational institution, all 28 respondents (100%) had a high school education. Regarding the characteristics of family history, most of the respondents—12 people (42.9%)—had a family history of experiencing pain during menstruation. Meanwhile, from the experience of dysmenorrhea, the majority of 19 people (67.9%) had a statement about their experience of experiencing dysmenorrhea. Severe pain during dysmenorrhea. And it can be concluded that there is a significant effect in reducing the scale of dysmenorrhea pain in adolescents before and after kneading massage therapy at the AKSARI STIKes Health Education institution, Indramayu Regency, stating that after kneading massage therapy was carried out, they felt more comfortable and relaxed, from the emergence of this feeling of comfort. so that it can change the mood for the better and can help reduce disturbances in teenagers' activities when they experience menstrual pain, and remembering that there is a significant influence between the dysmenorrhea pain scale before kneading massage therapy and the pain scale after kneading massage therapy in teenagers



during menstrual pain, it should be Continuous education is needed for teenagers who experience pain during menstruation to make efforts to treat pain non-pharmacologically, including kneading massage.

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