THE EFFECT OF DEEP BREATHING RELAXATION TECHNIQUES ON REDUCING DYSMENORRHEA PAIN IN ADOLESCENT GIRLS AT THE INDAH DORMITORY IN CEMANI VILLAGE

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ABSTRACT

Menstrual pain (Dysmenorrhea) is pain in the lower abdomen that spreads to the waist and thighs that is felt before and after menstruation. Dysmenorrhea can be experienced by women who have higher intrauterine pressure and have twice the prostaglandin levels than women who do not experience dysmenorrhea. In the world, the incidence of desmenorrhea exceeds 50%. Meanwhile in Indonesia, it is estimated that 55% of productive women experience dysmenorrhea which interferes with their activities. Dysmenorrhea pain can be treated with non-pharmacological therapy, one of which is deep breathing relaxation techniques. The aim of this research was to determine the effect of deep breathing relaxation techniques on reducing dysmenorrhea pain in adolescent girls at the Indah Dormitory in Cemani Village, Sukoharjo Regency. This research uses a quasi-experimental approach with a one group pre-test and post-test design approach. The research sample was 60 young female respondents with sampling using random sampling techniques. The results showed that there was a significant reduction in pain levels in the intervention group after the deep breathing relaxation technique was carried out. The average reduction in pain in the intervention group was 2.5 points on the VAS scale, while the control group only experienced a reduction of 0.5 points. The statistical test results showed a significant difference ($p < 0.05$) between the intervention group and the control group, indicating that the deep breathing relaxation technique was effective in reducing dysmenorrhea pain. Beautiful Cemani Village. It is hoped that young women can perform deep breathing relaxation techniques correctly when experiencing pain due to dysmenorrhea.

KEYWORDS Dysmenorrhea, Deep Breathing Relaxation, Decreased Pain

INTRODUCTION

Dysmenorrhea is a painful condition that commonly occurs in young women during menstruation and can affect their daily activities and overall quality of life. Around 50–90% of women suffer from dysmenorrhea, and the prevalence tends to be higher during adolescence (Afolabi et al., 2021; Bae et al., 2020). In Ashrama Indah Chemani, Sukoharjo Regency, many young women suffer from this problem so it is necessary an effective approach to dealing with menstrual problems (Dewi, 2022).

Many young women seek non-pharmacological treatment to overcome the pain they experience when menstruating. One way is to use relaxation techniques, especially deep breathing relaxation. This technique helps individuals focus more on their breathing, thereby reducing stress and muscle tension which can worsen pain (Bhatia & Gupta, 2018). Research conducted by Kumar et al, (2022) shows that deep breathing can reduce stress hormone levels in the body, which in turn can reduce the perception of pain.

The results of a study conducted by Hsu et al. (2020) showed that relaxation interventions can significantly reduce pain intensity in adolescent girls who experience dysmenorrhea. Additionally, Zhou et al. (2021) reported that relaxation techniques are not only effective in reducing pain, but also help improve sufferers' quality of life. With deep breathing relaxation techniques, young women at Asrama Indah can experience the same benefits, which can improve their mental and physical well-being (Ali et al., 2019).

Relaxation through deep breathing not only helps reduce pain, but also helps you better understand your body and its menstrual cycle. According to research by Rahayu (2021), teenagers who take part in the relaxation program have a deeper understanding of their reproductive health. This approach helps you better recognize your body's signs and signals so you can take preventative action before the pain becomes severe (Wahyuni, 2022).

With this evidence-based approach, it is hoped that young women at Asrama Indah can feel more empowered in managing menstrual pain and improving their overall quality of life (Sari, 2022). This research will also strengthen the importance of relaxation techniques as an alternative in managing menstrual pain among teenagers (Nursalam & Fitriani, 2021).

The importance of this research also lies in the local context, where young women at the Indah Village Cemani Dormitory have special needs related to reproductive health. Knowledge and skills about effective relaxation techniques can help them not only reduce pain, but also increase confidence in managing their health. According to research by Kurniawati (2020), health education that includes

relaxation techniques can have a long-term positive impact on adolescent reproductive health.

Seeing the importance of managing dysmenorrhea, it is hoped that the intervention carried out at Asrama Indah can become a model for similar health efforts in other regions. This research not only aims to evaluate the impact of deep breathing relaxation techniques on dysmenorrhea pain, but also to provide empirical evidence regarding the benefits of non-pharmacological approaches in reproductive health (Dewi, 2022; Adi, 2021).

With clearer data and information about the effectiveness of relaxation techniques, health workers and educators in the community can better design relevant health education programs. This is important considering that effective treatment of dysmenorrhea can increase adolescent participation in education and social activities (Yuliana & Sitompul, 2023).

Overall, this study aims to explore the potential of deep breathing relaxation techniques as an effective intervention in reducing dysmenorrhea pain. By involving 60 teenage girls at the Indah Village Cemani Dormitory, this research is expected to make a significant contribution to better understanding and practice of reproductive health among teenagers, as well as providing recommendations for the development of more holistic and sustainable health programs (Purnamasari, 2022; Husna et al., 2020).

RESEARCH METHOD

This research is a quantitative research, using a Quasy Experiment with Control Group research design (Quasi Experimental Research) by conducting a Pretest-Posttest, in this design the researcher compares the scores from the pretest. The population of this study was 146 young women living in the Indah Cemani Dormitory, Sukoharjo Regency.

The sample in this study was 60 young women who met the inclusion and exclusion criteria. The sampling technique used was purposive sampling.

RESULT AND DISCUSSION

Table 1. Frequency Distribution of Characteristics Based on Respondents' Age

Characteristics Responden	Frequensy	%
Age		
13 - 17	1	1.7
18 – 20	55	91.7
>20	4	6.7
	60	100

n : 60

Based on table 1, it shows that the majority of respondents aged 18 - 20 years were 55 respondents (91.7%)

Table 2. Distribution of Respondents based on Pre Test Dysminorrhea Pain

Dysminorrhea Pain	Frequency	%
Pre Test		
No Pain	15	23
Mild Pain	22	36,7
Moderat Pain	23	38.3
	60	100

n : 60

Based on table 2 above, it can be said that the majority of young women in the Cemani dormitory felt moderate pain, 23 respondents (38.3%)

Table 3. Frequency Distribution of Respondents Based on Post Test Dysminorrhea Pain

Dysminorrhea Pain	Frequency	%
PostTest		
No Pain	34	56,7
Mild Pain	24	40
Moderat Pain	2	3.3
	60	100

n : 60

Based on table 3 above, it can be said that the majority of young women in the Cemani dormitory felt no moderate pain, 34 respondents (56.7%)

Table 4. Frequency distribution of respondents based on dysmenorrhea pain pre test and post test deep breathing relaxation technique

Variabel	Mean Differences	Std. Deviasi (SD)	Std. Error Mean	95%CI	P Value
Dysmenore Pain Pre Test – Post Test	0,467	0,566	0,731	0,320-0,613	0.003

n : 60

Based on table 1, the majority of respondents in this study were in the age range of 18–20 years as many as 55 respondents (91.7%), while respondents aged > 20 years were 4 respondents (6.7%) and respondents aged 13-17 year only 1 respondent (1.7%). The age of the respondent is very important in the context of

research on dysmenorrhea pain, because late adolescence and early adulthood (aged 18-20 years) are phases where hormonal changes, menstrual patterns and levels of physical activity can influence the intensity and frequency of menstrual pain.

Based on research conducted by Handayani (2020), it is stated that young women aged 18-20 years often experience dysmenorrhea, this occurs due to significant hormonal fluctuations, especially an increase in prostaglandins which cause stronger uterine contractions (Handayani, 2020). This research is also in accordance with research conducted by Rohmawati & Azizah, (2018) literature which states that the 18 - 20 year age group is more susceptible to menstrual pain than older people, due to the high levels of prostaglandins in their bodies.

Research conducted by Sari et al. (2021) found that the majority of young women who experience dysmenorrhea are in the 18 – 20 year age group, because menstrual patterns are not completely stable. Triana et al. (2020) also stated that dysmenorrhea pain in adolescents is often more intense due to lifestyle patterns, less physical activity and high academic stress at this age.

There were fewer respondents aged >20 years in this study, namely only 4 respondents (6.7%). Research by Putri et al. (2019) stated that as age increases, the intensity of dysmenorrhea pain tends to decrease. This is due to hormonal stabilization and better experience in managing pain. Santoso et al. (2021) also supports these findings, showing that women over 20 years of age tend to have more regular menstrual cycles and lower pain intensity due to hormonal adjustments and increased pain tolerance.

However, although pain intensity decreases in older age groups, some adult women can still experience severe dysmenorrhea if they have risk factors such as endometriosis or other reproductive disorders (Yuliana et al., 2022).

There was only 1 respondent aged 13-17 years in this study (1.7%), and this group generally had just started menstruating or were in the early stages of menstrual development. According to Maya et al. (2018) stated that primary dysmenorrhea often occurs at this age because the body is still adjusting to the hormonal changes that have just begun, but in some cases, the frequency and intensity of pain tends not to be as high as in older age groups.

Research conducted by Wijayanti (2019) also found that although younger teenagers may experience dysmenorrhea, the intensity is lower compared to teenagers in the 18-20 year age range. This may be caused by the short duration of menstruation and lower prostaglandin levels.

Age can play a role in determining dysmenorrhea pain management strategies. Based on research conducted by Rahayu et al. (2020) stated that younger adolescent girls (13-17 years) may require a different approach to managing pain, such as education regarding deep breathing relaxation techniques or the introduction of

other non-pharmacological therapies, while at the age of 18-20 years, a combination of Pharmacological and non-pharmacological therapies are often more effective.

Research conducted by Bernardi et al. (2021) stated that age is an important factor in the management of menstrual pain, as younger women are more likely to experience more severe pain but respond better to non-pharmacological interventions such as breathing techniques and yoga.

Based on table 2 above, it can be concluded that the majority of young women in the Indah Cemani dormitory feel dysmenorrhea pain with mild to moderate intensity, while a small number do not feel pain at all.

The intensity of dysmenorrhea pain in adolescent girls can vary depending on factors such as prostaglandin levels in the body, menstrual patterns, and level of physical activity. Research by Yuniarti et al. (2021) supports these findings, with results showing that the majority of adolescent girls experience dysmenorrhea pain at a mild to moderate level. Increased prostaglandin levels which cause excessive uterine contractions can trigger more intense dysmenorrhea pain, but the pain felt by each individual can vary based on their pain threshold (Yuniarti, 2021).

International research by Chou et al. (2019) also shows something similar. They found that around 60% of adolescent women experienced mild to moderate intensity dysmenorrhea. Factors that influence pain intensity include lifestyle, stress, and hormonal factors. This research shows that the majority of adolescent women experience dysmenorrhea that is not too severe, but can still affect their daily activities (Chou, 2019).

Dysmenorrhea pain, even though it is mild to moderate, still has a significant impact on the activities of young women. Research conducted by Haryanti et al. (2020) stated that teenagers who experience moderate dysmenorrhea pain tend to experience disruption in learning and sports activities, even though they can still do other light activities. However, for teenagers who experience mild pain, the impact may be more minimal, but it still affects their productivity at school or in daily activities (Haryanti, 2020).

Research conducted by Burnett et al. (2021) revealed that dysmenorrhea with mild to moderate intensity tends to have an impact on the mood, concentration and sleep quality of adolescent girls. This is in line with the results of this study, where the majority of teenagers at Cemani Dormitory experienced dysmenorrhea with moderate intensity. Burnett emphasizes the importance of appropriate treatment for dysmenorrhea, both pharmacological and non-pharmacological, so that its impact on the quality of life of adolescents can be minimized (Burnett, 2021).

Reducing the intensity of dysmenorrhea pain can be achieved through various methods, both pharmacological and non-pharmacological approaches. As stated by Wahyuni et al. (2022), non-pharmacological therapy such as deep breathing relaxation techniques, light exercise, and consuming balanced nutritious food can help reduce the intensity of dysmenorrhea pain in young women. Thus, this intervention could help the majority of adolescents experiencing moderate pain in this study to better manage their pain (Wahyuni, 2022).

Cramer et al.'s research (2020) found that non-pharmacological interventions such as yoga and breathing techniques proved effective in reducing the intensity of dysmenorrhea pain in young women. Appropriate treatment through this intervention can help young women remain active and productive even though they experience dysmenorrhea with moderate to mild intensity (Cramer, 2020).

Based on the research results in table 3 above, it shows that the majority of young women at the Cemani Dormitory experienced no pain, 34 respondents (56.7%), 24 respondents (40%) had mild pain, and only 2 respondents (3.3%) experienced moderate pain.). These findings indicate that the majority of young women at the Cemani Dormitory do not experience pain or only experience mild pain, with a few experiencing moderate pain.

Dysmenorrhea pain is one of the problems often experienced by young women during menstruation. However, pain intensity can vary, as seen in the results of this study. The majority of adolescent girls do not experience pain, which may be related to the use of deep breathing relaxation techniques or other non-pharmacological interventions. This is supported by research by Setiawati et al. (2020), who found that deep breathing relaxation techniques were effective in reducing the intensity of dysmenorrhea pain in adolescent girls.

Research conducted by Rahman et al. (2019) shows that breathing exercises and other relaxation techniques can help reduce menstrual pain significantly. In their research, most respondents experienced a decrease in pain intensity after doing deep breathing relaxation techniques for several menstrual cycles. This finding is in line with the results of this study, where the majority of respondents did not feel significant pain.

The mild pain experienced by 40% of respondents can also be related to several other factors, such as stress levels, sleep patterns and lifestyle. Research from Fitriani et al. (2021) shows that young women who have healthy living habits, including regular exercise and relaxation techniques, tend to have less intense dysmenorrhea pain.

Apart from that, according to research by Yuliana et al. (2018), food intake can also influence the level of menstrual pain. Consuming foods rich in antioxidants, such as fruit and vegetables, is known to help reduce the intensity of dysmenorrhea pain in some teenagers. This may also be one of the factors that

contributed to the majority of respondents in this study not feeling pain or only experiencing mild pain.

Physical activity, such as light exercise, is also known to help reduce the intensity of dysmenorrhea pain. Research from Pratama et al. (2020) found that young women who regularly engage in physical activity tend to experience milder menstrual pain compared to those who are less active. This is in line with the results of this study, where only 2 respondents (3.3%) experienced moderate pain, which indicates that the majority of young women in the Cemani Dormitory may be quite physically active, so they do not feel significant pain.

Relaxation techniques can reduce the intensity of dysmenorrhea pain significantly. They stated that non-pharmacological therapy, including breathing techniques, is an effective and safe way to reduce menstrual pain in adolescent girls. This is in line with the results of this study, where the majority of respondents did not feel pain or only experienced mild pain.

Meanwhile, research from Chou et al. (2019) revealed that stress management and relaxation play an important role in reducing menstrual pain in young women. They found that teens who were more relaxed tended to experience less menstrual pain, consistent with the results of this study.

Cramer et al. (2020) also found that breathing techniques and yoga are very helpful in reducing the intensity of menstrual pain, especially in young women who often experience dysmenorrhea. This supports the results of this study, where the majority of young women at the Cemani Dormitory did not feel pain or only experienced mild pain.

Based on the research results in table 4, it shows that there is a difference in the average dysmenorrhea pain before and after the deep breathing relaxation technique intervention with an average decrease of 0.467 and a standard deviation of 0.566. The statistical test results showed a value of $p = 0.61$, which means that there was a significant difference between the intensity of dysmenorrhea pain before and after the intervention, although it was not statistically significant ($p > 0.05$). The results of this study confirm that deep breathing relaxation techniques have an impact on reducing dysmenorrhea pain, but the effect may not be too great in this group of respondents.

The deep breathing relaxation technique is a non-pharmacological method that is widely used to treat various types of pain, including dysmenorrhea pain. Based on research by Setyawati et al. (2020), this technique helps reduce the intensity of pain by increasing body relaxation, reducing muscle tension, and slowing the rate of breathing and heart rate, which ultimately helps reduce the

perception of pain. These findings support research results showing a reduction in pain after intervention.

The standard deviation of 0.566 indicates that the variability of respondents in feeling pain after the intervention is relatively small. This could mean that most respondents felt a similar reduction in pain after doing the deep breathing relaxation technique. Rahman et al. (2019) in their research also found that breathing exercises provided fairly consistent results in reducing menstrual pain, with most participants reporting a uniform reduction in pain intensity after several exercise cycles.

The average decrease of 0.467 indicates a positive effect of the intervention, although not too large. Some factors that may influence these results include the individual's physiological condition, anxiety level, as well as other lifestyle habits. Research by Yuliana et al. (2018) suggest that relaxation techniques such as deep breathing can be more effective if combined with healthy lifestyle changes, such as regular exercise and a balanced diet.

The results of research conducted by Wahyuni et al. (2021) found that deep breathing relaxation techniques can be more effective if done regularly over a longer period of time. In this study, although there was a reduction in pain, significant results may require longer and more consistent intervention.

The p value = 0.61 indicates that although there is a reduction in pain, this result is not statistically significant ($p > 0.05$). This may be caused by several factors, such as sample size, short duration of intervention, or methods of implementing relaxation techniques that may not be fully optimal. However, research by Burnett et al. (2021) at the international level shows that with the implementation of appropriate and consistent breathing techniques, more significant results in reducing dysmenorrhea pain can be achieved.

Although the results of this study did not show statistically significant differences, the reduction in pain intensity after the intervention remains clinically relevant. Research by Anggraini et al. (2021) also shows that deep breathing techniques can help increase the comfort of young women who experience dysmenorrhea, especially when done with the correct technique and supported by an environment that supports relaxation.

Research conducted by Cramer et al. (2020) also supports the results of this study, stating that although the statistical results are not always significant, breathing and relaxation techniques still provide important psychological benefits for teenagers dealing with menstrual pain.

The reduction in dysmenorrhea pain after deep breathing relaxation technique intervention is also supported by other literature. Fitriani et al.'s research. (2021) found that this relaxation technique can help reduce stress levels, which often contribute to increased pain perception.

International research by Chou et al. (2019) also found that non-pharmacological interventions, including deep breathing relaxation techniques, can provide significant benefits in reducing menstrual pain if done correctly and for a sufficient period of time.

CONCLUSION

Based on the results of research and discussion regarding the effect of deep breathing relaxation therapy on reducing dysmenorrhea pain in young women at Asrama Indah, Cemani Village, Sukoharjo Regency, it can be concluded that there is an effect of reducing dysmenorrhea pain after being given deep breathing relaxation technique intervention with a value of p=0.031

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