



IMPLEMENTATION OF GUIDED IMAGERY TECHNIQUES FOR ADOLESCENTS EXPERIENCING DYSMENORRHEA

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ABSTRACT

Menstruation is a natural cycle in women characterized by the release of blood through the vagina. Menstrual pain or dysmenorrhea often causes a throbbing sensation, cramps in the lower abdomen, and pain that can spread to the back and inner thighs. Deep breathing relaxation techniques are an effective method for reducing pain by relieving muscle tension, reducing anxiety, and preventing the spread of pain stimuli. This study aims to analyze the effectiveness of deep breathing relaxation techniques in reducing menstrual pain in women with dysmenorrhea. The research method uses a descriptive case study approach involving two clients who were given deep breathing relaxation techniques as an intervention. The research subjects were 80 female adolescents in the Meilia Medika Health Vocational School area. Sampling was done using purposive sampling technique and only 2 participants were taken. Data was analyzed descriptively. The results showed that in the first client, before the relaxation technique was performed, the pain scale felt was 6/10. After the application of the relaxation technique, the pain decreased to 3/10 and on the second to fifth day it dropped to 1/10. On the sixth and seventh days, the pain was no longer felt. The second client initially experienced pain on a scale of 9/10, which decreased to 5/10 after the application of the relaxation technique. On the second to fourth day, the pain scale decreased to 2/10, and on the sixth to seventh day the pain was no longer felt. The conclusion of this study is that deep breathing relaxation techniques are proven to be effective in reducing the scale of menstrual pain if done correctly according to the Standard Operating Procedure (SOP). Both clients stated that this method helped reduce menstrual pain significantly.

Keywords: deep breathing relaxation techniques; dysmenorrhea; menstruation

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INTRODUCTION

Menstruation is a natural physiological process in women characterized by the release of blood through the vagina due to the release of the endometrium layer. The average menstrual cycle lasts for 28 days, with the duration of menstruation ranging from 1 to 8 days and the volume of blood loss around 20–80 ml. Factors such as age, physical condition, and emotional can affect the regularity of the menstrual cycle (Ariani, 2021) (Lowdermilk et al., 2013). Menstruation is often accompanied by a variety of symptoms, including menstrual pain or dysmenorrhea. Dysmenorrhea can cause cramps in the lower abdomen that can spread to the back and inner thighs. Other symptoms include breast tenderness, acne, increased appetite, and fatigue (Safitri et al., 2014). Menstrual pain usually appears one to two days before menstruation and peaks within the first 24 hours after menstruation begins (Ardiansyah, 2016)

Dysmenorrhea is caused by increased levels of prostaglandin F2 α in menstrual blood, which triggers excessive uterine contractions, causing pain. Dysmenorrhea is divided into two types, namely primary dysmenorrhea and secondary dysmenorrhea (Charu et al., 2012). Primary dysmenorrhea usually occurs within the first six to twelve months after menarche, with pain lasting 8–72 hours. Secondary dysmenorrhea generally occurs after age 25 and is often associated with reproductive disorders such as endometriosis, pelvic inflammatory disease, ovarian cysts, cervical stenosis, or use of intrauterine contraceptive devices (Widyanthi, Resiyanthi, & Prihatiningsih, 2021; Salamah, 2019). The prevalence of dysmenorrhea is very high in various countries. WHO (2015) reported that more than 50% of women in the world experience dysmenorrhea, with figures reaching 72% in Sweden and nearly 90% in the United States. In Indonesia, Kemenkes (2020) noted that 64.25% of women experience dysmenorrhea, consisting of 54.89% primary dysmenorrhea and 9.36% secondary dysmenorrhea. However, the actual number of sufferers is estimated to be higher because many cases are not reported. In West Java in 2018, there were 56,598 adolescent girls aged 10–24 years, with 11,565 of them visiting health facilities due to dysmenorrhea. Data from health cadres in Rangkapan Jaya, Depok, shows that 2 out of 10 teenagers experience menstrual pain that interferes with daily activities.

Various methods are used to overcome dysmenorrhea, including the use of pain relievers, warm compresses, exercise, and relaxation techniques. One effective non-pharmacological method is the deep breathing relaxation technique, which can reduce muscle tension, anxiety, and prevent the spread of pain stimuli. This relaxation combines breathing control with peace of mind, thus helping the body achieve a more relaxed state (Mubarak, Indrawati, & Susanto, 2015). Given the high incidence of dysmenorrhea and its impact on the quality of life of adolescents, effective efforts are needed to overcome menstrual pain non-pharmacologically. Therefore, this study aims to evaluate the effectiveness of deep breathing relaxation techniques in reducing menstrual pain in adolescents with dysmenorrhea.

METHOD

This type of research describes the application of Deep Breathing Relaxation Techniques to reduce pain in adolescents experiencing Dysmenorrhea at Meilia Medika Health Vocational School in 2023. The research was conducted in February 2023. The time of this research was conducted on February 4-8, 2023. The subjects in this case study were adolescents experiencing Dysmenorrhea. In this case study, the research subjects were 80 female adolescents who were studied with the criteria of age between 13-18 years, respondents who experienced Dysmenorrhea and regular menstrual cycles, in a state of full consciousness, not mentally disabled, able to communicate well, willing to be respondents, respondents were menstruating and experiencing pain and lived in the Meilia Medika Health Vocational School area

The Instrument in This Research is in the Form of an Interview Guideline Format The data collection method used was by interviewing the decrease in the scale of menstrual pain in female adolescents. This data collection was done by conducting interviews on the action of deep breathing relaxation techniques on adolescents experiencing menstrual pain. The data collection technique used in this case study was an interview related to menstruation, Dysmenorrhea and the Action of deep breathing relaxation techniques on reducing the pain scale at Meilia Medika Health Vocational School. This study began with obtaining permission from Meilia Medika Health Vocational School, followed by an explanation of the purpose and schedule of the study to the school and students who met the criteria. Respondents were given information about the study, asked to sign an informed consent, then given an example of a

deep breathing relaxation technique via video before practice. The pain scale was measured before and after the intervention which lasted 5-10 minutes in a comfortable environment. In this study was conducted in a room that had been provided. The data obtained were then processed for further analysis. After the data was analyzed and the research was obtained, the data and research results were presented in this case study in the form of narrative text.

RESULTS

This study examines the effectiveness of deep breathing relaxation techniques in reducing the scale of menstrual pain in two female adolescents, Ms. P and Ms. I, in RT 01 RW 09, Rangkapan Jaya Baru, Pancoran Mas, Depok. Data were obtained through interviews, observations, and physical examinations. After selecting respondents according to the inclusion criteria, the researcher introduced herself, explained the purpose of the study, and asked for informed consent. Respondents were asked to contact the researcher when they were menstruating, then taught deep breathing relaxation techniques three times during menstrual pain. The pain scale was measured before and after the intervention for three days to assess the effectiveness of this technique.

First Respondent Assessment

The assessment was conducted on Monday, February 4, 2023, at Jalan Duren RT 01 RW 09, Rangkapan Jaya Baru, Pancoran Mas, Depok, after the respondents filled out the informed consent. Data were collected through interviews, observations, and physical examinations. Respondent, Ms. I (13 years old), a student, first experienced menstruation at the age of 10. During the assessment, the first day of menstruation fell on February 4, 2023, with a 30-day cycle and a menstrual duration of 7 days. The nature of menstrual blood changed from thin and little on the first day, to thick and abundant on the second to fourth day, then back to thin with a small amount on the fifth to seventh day. The client changed pads more often on the second to fourth day (three to four times a day), while on the first, fifth, and seventh days it was enough twice a day. The most bleeding occurred on the second and third days. The client often experienced menstrual pain in the lower abdomen that radiated to the back, with a pain scale of 6 on the first day, decreasing to 2 on the second to fifth day, and disappearing on the sixth and seventh day. The client coped with pain only by resting and had no history of reproductive disorders or hereditary diseases. In addition, there were differences in habits before and during menstruation in daily activities.

Table 1.

Habits before and during menstruation of the first respondent

Type of activity	Before menstruation	During menstruation
a. Frequency of eating:..... X /day	3 x a day	3-4 times a day
b. Appetite: good/not Reason: (nausea, vomiting, mouth ulcers)	Good	Good
c. Use of medication before eating 3 x a day Good	No medicines are taken before meals	No medicines should be taken before meals
B.a.b :		
1) Frequency X / day	1 x daily Morning	1 x daily Morning
2) Time : (Morning / Afternoon / Night / Uncertain)	No laxative use	No laxative use
3) Use Laxative :		
Rest and Sleep Patterns:		
a. Daytime nap time: Hours / day	No 8 hour nap	1-2 hours
b. Nighttime sleep time: Hours / day	No bedtime routine	9 hours
c. Bedtime habits: ...		

Type of activity	Before menstruation	During menstruation
Activity and Exercise Patterns.		No bedtime routine
a. School Morning/Afternoon/Evening time:	Morning	Morning
b. Sports: () Yes () No	Yes	No
c. Type of sports:	Type of sport is adjusted to school	
d. Exercise frequency: ... X / week	1 x a week	1 x a week
e. Complaints during activities (Body movements/bathing/Wearing clothes/ Shortness of breath after activities etc.)	No complaints	Lower abdominal pain that radiates to the waist
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Habits Affecting Health		
a. Smoking: Yes / No	No	No
1) Frequency:		
2) Amount:		
3) Duration of Use:		

During the assessment, the client's emotional status was stable, with good social relationships and family communication. Economic conditions were sufficient, indicated by ownership of a private vehicle and a sophisticated smartphone. Physical examination showed good general condition with compos mentis awareness. Vital signs were within normal limits: BP 107/76 mmHg, pulse 96x/minute, RR 21x/minute, temperature 36°C. Vision, hearing, and respiratory systems were good, with a pain scale of 6/10. Further examination results showed black and clean hair, a symmetrical face without lesions, and anemic conjunctiva with isochoric pupils. The nose was clean without secretions, the mucosa of the lips was moist, the teeth were clean without cavities, and the gums were without wounds. The neck was symmetrical without increased jugular venous pressure. Chest examination showed vesicular breath sounds without intercostal retraction. In the abdomen, bowel sounds were heard 12x/minute. The extremities were complete, normal, and without abnormalities.

Second Respondent

The assessment was conducted on Monday, February 5, 2023, at Jalan Duren RT 01 RW 09, Rangkapan Jaya Baru, Pancoran Mas, Depok, through interviews, observations, and physical examinations. Respondent Ms. P, a 15-year-old female, is a student. Menstrual history shows menarche at the age of 12, with a 25-day cycle and a menstrual duration of 7-8 days. The nature of menstrual blood is thin and little on the first day, thick and abundant on the second to fourth days, and thin, darker in color, and little on the fifth to seventh days. The frequency of changing pads varies: three times a day on the first day, three to four times a day on the second to fifth days, and twice a day on the sixth to seventh days. The most bleeding occurs on the second and third days. The main complaints include lower abdominal pain radiating to the back, acne, and mood changes. The pain scale is 9/10 on the first day, 4/10 on the second to fourth days, and 1/10 on the sixth to seventh days. The client manages the pain by resting, taking painkillers, and applying warm compresses. The client has no history of reproductive disorders or hereditary diseases. The results of the assessment indicate differences in habits before and during menstruation.

Table 2.
Habits before and during menstruation of the second respondent

Type of activity	Before menstruation	During menstruation
a. Frequency of eating:..... X /day	3 x a day Good	3-4 times a day Not good
b. Appetite: good/not Reason: (nausea, vomiting, mouth ulcers)	No medicines are taken	because the client feels very
c. Use of medication before eating 3 x a day Good	before meals	painful No medicines are taken before Meals
B.a.b :		
1) Frequency X / day	1 x daily Morning	Once every 2 days
2) Time : (Morning / Afternoon / Night / Uncertain)	No laxative use	Uncertain None laxative use
3) Use		
4) Laxative :		
Rest and Sleep Patterns:		
a. Daytime nap time: Hours / day	No nap 7 - 8 hours	2 hours
b. Nighttime sleep time: Hours / day		9 - 10 hours
c. Bedtime habits: ...	No habits before bed Morning	No bedtime routine Morning
Activity and Exercise Patterns.		
a. School time:	Yes	No
Morning/Afternoon/Evening	Type of exercise is adjusted to school.	No exercise. No exercise.
b. Sports: () Yes () No		
c. Type of sports:	1 x a week	No exercise. No exercise.
d. Exercise frequency: ... X / week		
e. Complaints during activities (Body movements/bathing/Wearing clothes/ Shortness of breath after activities etc.)	No complaints	Lower abdominal pain radiating to the waist
Habits Affecting Health		
a. Smoking: Yes / No		
1) Frequency:	No	No
2) Amount:		
3) Duration of Use:		

Respondent Ms. P has a stable emotional status with good social relationships and close communication with her family. Her economic condition is quite sufficient, indicated by the ownership of a private motorbike and a sophisticated smartphone. The results of the physical examination showed a good general condition with composmentis awareness. Her vital signs include blood pressure of 112/65 mmHg, pulse 99 times per minute, respiratory rate 22 times per minute, and body temperature 36.8°C. The vision, hearing, and respiratory systems are in good condition. Further examination showed that the respondent's hair was black and clean, her face looked symmetrical without any lesions, and her eyes had anemic conjunctiva and isochoric pupils. The nose looked clean without secretions, the lip mucosa was not dry, the teeth were clean and had no cavities, and the gums were not injured. The neck looked symmetrical without any increase in jugular venous pressure (Kusmindarti & Munadlifah, 2016). Chest examination showed vesicular breath sounds, while in the abdomen, bowel sounds were heard 12 times per minute. Extremities were complete, normal, and no abnormalities were found.

Determination of diagnosis

Table 3.
Data Analysis

Data	Problem	Etiology
<p>First Responder</p> <p>DS: The client reported pain during menstruation and expressed discomfort.</p> <p>P: moving a lot</p> <p>Q: like being squeezed</p> <p>R: lower abdomen spreading to the entire waist</p> <p>S: nyeri skala 6 (1-10)</p> <p>T: continuously on the first day for approximately 1 hour</p> <p>DO: The client appears to be grimacing, uncomfortable during menstrual pain and restless</p>	Acute pain	Menstrual disorders (Dysmenorrhea)
<p>DO: The client appears to wince when menstrual pain occurs and is restless</p> <p>DS: The client said he was uncomfortable.</p>	Disturbance of comfort	Pain
<p>Second Respondent</p> <p>DS: The client said that she had lower abdominal pain that spread to her waist during menstruation and said that she had acne and was in a bad mood.</p> <p>P: moving a lot</p> <p>Q: like being squeezed</p> <p>R: lower abdomen spreads to the entire waist</p> <p>S: pain scale 9 (1-10)</p> <p>T: continuously on the first day throughout the day if not taking medication</p> <p>DO: The client appears to be grimacing, uncomfortable during menstrual pain and restless</p>	Acute pain	Menstrual disorders (Dysmenorrhea)
<p>DS: The client says she is uncomfortable</p> <p>DO: The client appears uncomfortable</p>	Disturbance of comfort	Pain

Nursing Diagnosis

Based on the data analysis on the two clients, two nursing diagnoses were obtained, namely acute pain related to menstrual disorders characterized by the client being uncomfortable with her menstrual pain, and the second is a disturbance in comfort related to pain. This is in accordance with the data analysis.

Nursing Plan

The nursing plan for these two clients is to carry out the Deep Breathing Relaxation Technique for 10-15 minutes because this deep breathing relaxation technique can reduce the pain scale. The purpose of this Deep Breathing Relaxation Technique is that Ms. I and Ms. P do not experience Dysmenorrhea pain with the criteria for the results of the pain scale felt decreasing.

Evaluation

Pain assessment on the first client was carried out on February 1-3, 2023 to measure the level of pain before being taught the deep breathing relaxation technique. Before the intervention, the client reported a pain scale of 6/10 with a sensation like being squeezed. After being given an example and applying the deep breathing relaxation technique, the pain scale decreased to 3/10. On the second to fifth day, the pain decreased to scale 1, and on the sixth and seventh days, the pain was no longer felt. In the second client, the pain assessment was conducted on February 5-7, 2023. Before the deep breathing relaxation technique was performed, the client reported a pain scale of 9/10 with a squeezing sensation. After being given an example and applying the deep breathing relaxation technique, the pain scale decreased to 5/10. On the second to fourth day, the pain decreased to scale 2, and on the sixth and seventh days, the pain was no longer felt.

DISCUSSION

The assessment was conducted through interviews, physical examinations, and observations on two respondents aged 13-18 years who experienced Dysmenorrhea. Menarche occurred at the age of 10 years for the first client and 12 years for the second client. The menstrual cycle of the first client lasted 30 days, while the second client lasted 25 days, with a menstrual duration of 7 days. These results are in accordance with Anurogo's theory, which states that menstruation generally begins at the age of 9-12 years, although some are later, namely 13-15 years. The average menstrual cycle of women ranges from 21-40 days with a duration of 3-8 days (Anurogo, 2011). Both respondents released the most blood volume on the second and third day of menstruation because there were more pad changes compared to other days. This is in accordance with Manuaba's theory which states that the peak of menstrual bleeding is on the 2nd or 3rd day. This can be seen from the number of pads used, around 2-4 pieces (Manuaba & Ester, 2009).

The changes in the nature of menstrual blood in both clients showed a similar pattern. On the first day, the blood was still thin, red in color, and small in quantity (*Astarto, N.,W 2011, Kupas Tuntas Kelainan Haid, CV Agung Seto, Jakarta.*). On the second to fourth day, the blood becomes thicker or clotted, red in color, and the amount increases, with the amount of blood on the second day not being as much as on the third day. On the fifth to seventh day, the blood becomes thinner again, without clots, is increasingly dark red or brownish in color, and the amount is small. This is in accordance with the theory that menstruation generally lasts between 3-5 days, although some only last 1-2 days with little blood or up to 7-8 days. The average amount of blood that comes out is 33.2 ± 16 cc. Menstruation that lasts more than 7 days can cause excessive uterine contractions, increase prostaglandin production, and trigger menstrual pain or dysmenorrhea. (Anurogo, 2011).

The level of pain experienced by the two clients was different. The first client experienced pain since the first day of menstruation with a pain scale of 6/10, which was felt as a squeezing sensation in the lower abdomen. Meanwhile, the second client experienced maximum pain on the first day with a pain scale of 9/10. On the second to fourth day, the pain decreased to a scale of 4, and on the fifth to seventh day, the pain decreased to a scale of 2. The pain in the second client was felt in the lower abdomen and spread to the back, with a sensation like being squeezed. The way to deal with pain was also different; the first client only rested, while the second client dealt with pain by resting, taking medication, and warm compresses (*Budiman, Dan Riyanto A. 2013. Kapita Selekta Kuisisioner Pengetahuan Dan Sikap Dalam Penelitian Kesehatan. Jakarta: Salemba Medika., n.d.*). This is in line with Nugroho's theory which states that dysmenorrhea can cause pain in the lower abdomen, which

can spread to the lower back and legs (Nugroho & Utama, 2014). The pain can be intermittent cramps or a dull ache that lasts continuously, usually appearing just before or during menstruation (Aziza & Nurlaila, 2017).

Deep breathing relaxation techniques have been proven effective in reducing pain levels in both clients. According to research by Muninarayacnappa (2014), this method can reduce muscle tension, boredom, and anxiety, thus preventing an increase in pain stimuli. In the first client, pain decreased from a scale of 6 to 3, while in the second client pain decreased from a scale of 9 to 5. Deep breathing relaxation helps create a sensation of releasing discomfort and stress without having to tense the muscles first. When full relaxation is achieved, the brain activates alpha waves and stimulates the hypothalamus to release endorphins, which reduce the perception of pain and anxiety. Another study by Retno Wida Hapsari and Tri Anasari (2013) also supports the effectiveness of this method, by comparing deep breathing relaxation and giving chocolate to 15 respondents who experienced primary menstrual pain. The decrease in pain level in respondents after deep breathing relaxation techniques were carried out was influenced by the level of relaxation achieved. Respondents who did not relax tended to remain focused on the pain without relaxing, so that the pain was not reduced optimally. This technique works by relaxing the muscles in the lower abdominal area that are experiencing pain until full relaxation is achieved. The results of the study showed that deep breathing relaxation techniques are effective in overcoming menstrual pain if done correctly and regularly. After data analysis, it was found that both clients had the same problem, namely pain due to menstrual disorders, as explained by Bobak, This pain is characterized by discomfort during menstruation, with the highest scale reaching 6-9 in the range of 1-10, which is included in the category of severe pain (Bobak, 2005).

The main diagnosis in this case is acute pain due to dysmenorrhea, which is caused by increased uterine contractility and hypersensitivity of pain nerves. In addition, ineffective individual coping due to emotional overload during menstrual pain was found (Hartatik Sri & Putri, 2020). The nursing plan for both clients is the application of deep breathing relaxation techniques for 10-15 minutes to reduce the pain scale due to dysmenorrhea. The main objective of this intervention is to reduce menstrual pain experienced by Ms. I and Ms. P, in accordance with Harmoko's theory, which states that dysmenorrhea pain is caused by increased uterine contractility and hypersensitivity of pain nerves (*Harmoko, 2012, Asuhan Keperawatan Keluarga, Pustaka Pelajar, Yogyakarta.*). This relaxation technique aims to reduce tension, increase relaxation, and reduce pain perception.

Implementation Both clients were taught deep breathing relaxation techniques on the first day of menstruation, namely on February 4, 2023 for Ms. I and February 5, 2023 for Ms. P. After being given an example, the client was able to apply this technique independently and correctly. The client performed the deep breathing relaxation technique 3-5 times a day, especially when experiencing menstrual pain. This implementation is in line with Mitayani, who stated that deep breathing relaxation techniques can help reduce pain by increasing relaxation and reducing muscle tension. (*Rahmawati, E 2016, 'Perilaku Remaja Putri Kelas X Tentang Penanganan Dismenorea Primer Di SMAN 1 Bantul Yogyakarta Tahun 2016', Karya Tulis Ilmiah Program Studi Kebidanan: Sekolah Tinggi Ilmu Kesehatan Jenderal Achmad Yani.*).

Pain assessment evaluation on the first client was conducted on February 5-6, 2023, with an initial pain scale of 6/10. After being taught deep breathing relaxation techniques, the pain decreased to 3/10, then 1/10 on the second to fifth day, and disappeared on the sixth and

seventh days. On the second client, pain assessment was conducted on February 5-7, 2023, with an initial pain scale of 9/10. After implementing the technique, the pain decreased to 5/10, then 2/10 on the second to fourth day, and continued to decrease until the seventh day. These results are in line with May (2022), who stated that deep breathing relaxation techniques are effective in reducing pain. This technique is part of nursing care, where nurses are tasked with teaching clients how to breathe deeply, hold inspiration, and exhale slowly. The benefits include reducing pain intensity, increasing lung ventilation, and blood oxygenation.

CONCLUSION

Based on the research conducted at Meilia Medika Nursing Vocational School, Depok City, it can be concluded that deep breathing relaxation techniques appear to be more effective in overcoming menstrual pain or Dysmenorrhea if done correctly and in accordance with the SOP. Two similar diagnoses were found between the theory and research conducted by the researcher, namely acute pain related to menstrual disorders (Dysmenorrhea) and discomfort disorders related to pain. One nursing intervention was obtained that was in accordance with the theory by the researcher with deep breathing relaxation techniques in nursing interventions. This deep breathing relaxation technique is effective in reducing the pain scale in both clients, indicated by the client stating that deep breathing relaxation is an effective method for reducing pain in clients experiencing menstrual pain. Perfect relaxation can reduce muscle tension, boredom and anxiety, thus preventing pain stimuli. Proven by the first patient from a severe pain scale to a moderate pain scale, and in the second patient from severe pain to a mild pain scale. And obtained documentation that refers to the theory and SDKI to compile documentation according to the cases managed by the researcher.

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