International Collaborative Conference on Multidisciplinary Science
Volume. 1, Number. 1, Year 2024
Page 24-31
Available online at: https://iccms.ifrel.org/index.php/ICCMS

Effectiveness of Warm and Therapy Compress Therapy Murottal Al-Qur'an Against Decline Dysmenorrhea in Eighth Grade Students

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Abstract: *Dysmenorrhea, or menstrual pain, is a common issue among women, with severity ranging from mild to severe. This study investigates the effectiveness of warm compress therapy and murottal Al-Qur'an therapy in alleviating dysmenorrhea among eighth-grade female students at SMPIT Hikmatul Fadhillah Medan in 2024. Using a quantitative approach, this quasi-experimental research employed a two-group posttest-only control design. The study involved 40 female students selected through purposive sampling, divided into two groups: 20 received warm compress therapy, and 20 underwent murottal Al-Qur'an therapy. Data were analyzed using univariate and bivariate methods with the Mann-Whitney test. The findings revealed that warm compress therapy effectively reduced dysmenorrhea pain (p-value = 0.000, p<0.05), as did murottal Al-Qur'an therapy (p-value = 0.001, p<0.05). Furthermore, a significant difference was observed in the effectiveness of the two therapies, with a p-value of 0.001 (p<0.05). In conclusion, both warm compress and murottal Al-Qur'an therapies are effective in reducing dysmenorrhea, but their levels of effectiveness differ significantly. These findings offer valuable insights into alternative methods for managing menstrual pain in adolescents.*

Keywords: *Dysmenorrhea, Murottal Al-Qur'an, Warm Compress.*

1. INTRODUCTION

Adolescence is the phase between childhood and adulthood, covering the age range of 10-19 years. This period is often referred to as the transition period because teenagers experience significant changes that affect their physical, hormonal, psychological, and social aspects. They can no longer be categorized as children but are not yet fully considered adults. This period is also known as the phase of identifying one's identity. One of the important changes in teenage girls is the start of menstruation, which marks puberty. Menstruation is a physiological process in the form of bleeding due to shedding of the inner lining of the uterus (endometrium). This process occurs periodically, with an average cycle of 28 days, although the duration can vary for each individual (Kusuma, 2020).

Although menstruation is a natural process, many women, especially teenagers, experience complaints of pain in the lower abdomen during menstruation. This condition is known as dysmenorrhea, namely menstrual pain that occurs due to uterine muscle contractions that shed the endometrial lining. Dysmenorrhea is a common problem among young women. According to the WHO (2022), the global prevalence of dysmenorrhea ranges from 16.8% to 81%. The prevalence is quite high in Southeast Asia, such as in Thailand (84.2%), Malaysia (69.4%), and Indonesia (64.25%) (Hizkia et al., 2024). In Indonesia, dysmenorrhea most often occurs in adolescents aged 14-16 years, with prevalence rates varying between 43%-93% (BKKBN 2022).

Received: April 30, 2024; Revised: May 30, 2024; Accepted: June 18,2024;
Published: June 30, 2024

Dysmenorrhea is generally divided into two types: primary and secondary. Primary dysmenorrhea is menstrual pain without any abnormalities in the reproductive organs, whereas secondary dysmenorrhea is caused by certain disorders or pathologies, such as endometriosis. Primary dysmenorrhea is often experienced by teenagers and is usually caused by high levels of prostaglandins that trigger uterine contractions. This pain can be accompanied by other symptoms, such as nausea, vomiting, diarrhea, headaches, or even fainting (Kusuma, 2020).

Local data show that the prevalence of dysmenorrhea in North Sumatra ranges from 30% to-45%, while in Medan it reaches 56% (North Sumatra Health Profile, 2021). Although it is not dangerous, dysmenorrhea can interfere with daily activities, such as studying and social activities. If left untreated, recurring pain can reduce quality of life and trigger emotional problems, such as anxiety, mood swings, and sleep disorders.

Efforts to treat dysmenorrhea can be achieved through pharmacological and nonpharmacological approaches. Pharmacological therapies, such as the use of non-steroidal anti-inflammatory drugs (NSAIDs), are effective in relieving pain. However, long-term use can cause side effects, such as nausea, vomiting, and organ disorders, including kidney and liver damage. Therefore, non-pharmacological therapy is a safe alternative with minimal risks. Some non-pharmacological methods that are often used include warm compression therapy and Al-Qur'an murottal therapy (Indrayani, T., dan Silawati, 2021).

Warm compression therapy works by increasing blood circulation in the lower abdominal area through the dilatation of blood vessels. This process helps relieve muscle tension that causes pain due to uterine contractions (Rahmadhayanti, E., Afriyani, R., dan Wulandari, 2019). Listening to murottal Al-Qur'an, such as chanting Surah Ar-Rahman, has been proven to help reduce stress hormones, increase relaxation, and reduce anxiety. Sound waves from chanting holy verses stimulate delta brain waves, which are associated with relaxed and comfortable conditions (Kencanasari, O. N., dan Saudia, 2019).

Previous studies have demonstrated the effectiveness of these two therapies. Amelia's study shows that the combination of warm compress therapy and murottal Al-Qur'an can significantly reduce the intensity of menstrual pain in young women (Amelia, 2023). Other research by Bingan stated that religious music therapy can provide a similar relaxing effect, thereby relieving menstrual pain. These two therapies are considered practical, inexpensive solutions, and can be applied independently by teenagers (Bingan, 2020).

Considering the high prevalence of dysmenorrhea in adolescents, especially at the SMPIT Hikmatul Fadhillah Medan, a practical, cheap, and safe solution is needed to overcome this problem. One alternative is a combination of warm compress therapy and murottal Al-

Qur'an, which not only reduces physical pain but also provides emotional comfort through the resulting relaxation effect. This study aimed to evaluate the effectiveness of these two therapies in reducing the intensity of dysmenorrhea pain in class VIII female students at the SMPIT Hikmatul Fadhillah Medan. The expected result of this research is the availability of references for the non-pharmacological treatment of dysmenorrhea that can be used by young women, teachers, and educational institutions. Apart from providing a solution that is safe and easy to apply, this research is also expected to be able to improve the quality of life of teenagers facing challenges during menstruation, while encouraging widespread adoption of this method as an effective treatment alternative without side effects.

2. LITERATURE REVIEW

The study by Artika Amelia evaluated the effect of warm compresses and murotal therapy (recitation of Surat Ar-Rahman) on menstrual pain among 11th-grade female students at SMA Negeri 1 Jakenan Pati. Using a preexperimental one-group pretest-posttest design, the findings revealed that the combination of both therapies effectively reduced menstrual pain levels. However, the lack of a control group limits the validity of the results, making it challenging to determine whether pain reduction was solely due to the interventions. Additionally, murotal therapy is highly contextual as its efficacy is closely tied to Islamic spirituality, which may not be applicable across different cultural settings. The reliance on subjective pain assessments without physiological measures further limits the accuracy of the conclusions (Amelia, 2023).

Aisyah et al. examined the effectiveness of warm compresses for primary dysmenorrhea among adolescent girls at Madrasah Aliyah An Namirah in Tanah Merah, Bangkalan. Using a quasi-experimental pretest-posttest design, this study found that 55% of participants experienced a reduction in pain severity to a mild category after the intervention. This design provides a stronger comparative basis than Artika's study as it measures pre-and post-intervention pain within the same group. However, the absence of a control group remains a limitation of this study. These findings are considered more universal, as the physiological mechanism of warm compresses is not influenced by cultural or religious factors. Nonetheless, subjective measurements of pain without objective data limit the comprehensiveness of results (Aisyah et al., 2023).

The study conducted by Irna Safitri, Nila Eza Fitria, and Dian Furwasyih, titled *The Effect of Warm Compress Application on Menstrual Pain (Dysmenorrhea) in Adolescent Girls at SMA N 7 Kerinci*, utilized a pre-experimental design with a one-group pre-post test method.

This study examined the effect of warm compress application (independent variable) on the level of menstrual pain or dysmenorrhea (dependent variable) experienced by adolescent girls. The findings revealed that warm compress application significantly reduced menstrual pain, demonstrating the effectiveness of this simple and practical nonpharmacological method in alleviating dysmenorrhea among adolescents (Safitri et al., 2023).

This study by Lilis Komariyah investigated the effect of religious music therapy on menstrual pain intensity among female students at Daarul Muttaqien II Islamic Boarding School in Tangerang using a preexperimental one-group pretest-posttest design. The results indicated that religious music therapy effectively reduced pain intensity. However, similar to Amelia's study, the absence of a control group weakened the validity of the findings. Moreover, therapy's reliance on religious and spiritual contexts makes it less universally applicable. The subjective nature of pain measurements without physiological indicators further limits the depth of analysis of the effectiveness (Komariyah et al., 2020).

In summary, while all studies highlight the efficacy of various non-pharmacological interventions for menstrual pain relief, they share common limitations, such as the absence of control groups, reliance on subjective measures, and challenges in generalizing findings. Future research employing stronger designs, such as randomized controlled trials involving diverse populations, is necessary to address these limitations and to expand the applicability of the findings.

3. METHODS

Quantitative research uses numerical data, enabling predictions of the conditions or trends of a population in the future. The research design employed in this study was quasi-experimental and lacked some characteristics of a true experimental design. The approach selected was a pretest-posttest control group design, involving two groups that were first given a pretest, followed by an intervention, and then a posttest. Purposive sampling was utilized in this study, where samples were selected based on specific criteria relevant to the research objectives.

For data analysis, the study applies the Wilcoxon signed-rank test, a non-parametric statistical test, was used to evaluate differences in paired data, particularly when the assumptions of normal distribution were not met. This approach ensures that the analysis aligns with the nature of the data, thus providing robust and meaningful insights into the impact of the intervention.

4. RESULTS

Table 1. Normality Test Results

No	Variable	Sig	Description
1	Before Warm Compress	0,004	Not Normal
2	After Warm Compress	0,009	Not Normal
1	Before Murottal Al-Qur'an Therapy	0,023	Not Normal
2	After Murottal Al-Qur'an Therapy	0,005	Not Normal

Normality test results on the dysmenorrhea pain scale variable before and after warm compresses and the dysmenorrhea pain scale before and after Murottal Al-Qur'an therapy showed p-values of 0.004, 0.009, 0.023, and 0.005 ($p<0.05$), indicating normal distribution, and so cannot be continued using parametric tests and can be continued using non-parametric tests, namely the Wilcoxon Test.

Table 2. Effectiveness of Warm Compress Therapy in Reducing Dysmenorrhea in Class VIII Female Students of SMPIT Hikmatul Fadhillah

No	Pain Level	N	Mean Rank	Z-Test		*p-value*
				Z-Calculate	Z-Test	
1	Negative Rank	15	8,0	-3,578[b]	3,745	0,000
2	Positive Rank	0				
3	Ties	5				
	Total	**20**				

Of the 20 female students who were given warm compresses, 15 experienced a decrease in the dysmenorrhea pain scale, no female students experienced an increase in the dysmenorrhea pain scale, and five female students experienced no change in the dysmenorrhea pain scale. The Wilcoxon Test results show a p-value of 0.000 ($p<0.05$), with a Z-count value (-3.578) which is smaller than the Z-table (3.745). Based on these results, it can be concluded that warm compresses are effective in reducing dysmenorrhea pain in female students who were respondents in this study.

Table 3. Effectiveness of Murottal Al-Qur'an Therapy in Reducing Dysmenorrhea in Class VIII Female Students of SMPIT Hikmatul Fadhillah

No	Pain Level	N	Mean Rank	Z-Test		*p-value*
				Z-Calculate	Z-Test	
1	Negative Rank	12	6,5	-3,464[b]	3,745	0,001
2	Positive Rank	0				
3	Ties	8				
	Total	**20**				

Of the 20 female students who were given Murottal Al-Qur'an therapy, 12 female students experienced a decrease in the dysmenorrhea pain scale, no female students experienced an increase in the dysmenorrhea pain scale, and 8 female students experienced no change in the dysmenorrhea pain scale. The Wilcoxon Test results show a p-value of 0.001 ($p<0.05$), with a Z-count value (-3.464) which is smaller than the Z-table (3.745). Based on these results, it can be concluded that Murottal Al-Qur'an therapy is effective in reducing dysmenorrhea pain in female students who participated in this study.

Table 4. Effectiveness of Warm Compress Therapy and Murottal Al-Qur'an Therapy on Reducing Dysmenorrhea in Class VIII Female Students SMPIT Hikmatul Fadhillah

No	Group	Median (Min-Max)	*p- value*
1	Warm Compress Group	2,5 (1-4)	0,001
2	Murottal Al-Qur'an Therapy Group	3,7 (2-6)	

From the research results, it was found that the average dysmenorrhea scale in the group given warm compresses was 2.5%, while the average dysmenorrhea scale in the group given Murottal Al-Qur'an therapy was 3.7. The results of the Mann-Whitney test showed a p-value

of 0.001 ($p<0.05$), which means that there was a significant difference between the two therapies. Based on these results, it can be concluded that there is a difference in the effectiveness of warm compress therapy and Murottal Al-Qur'an therapy in reducing dysmenorrhea**.**

5. DISCUSSION

This study aimed to evaluate and compare the effectiveness of warm compression therapy and Quranic Murotal therapy in reducing dysmenorrhea pain in adolescent girls. The results showed that warm compression therapy was more effective than Quranic Murottal therapy in reducing dysmenorrhea pain. In the group given warm compresses, 15 of 20 students experienced a decrease in dysmenorrhea pain, with an average reduction of 2.5%. In contrast, 12 out of 20 students who received Quranic Murotal therapy experienced pain reduction, with an average reduction of 3.7%. The Mann-Whitney test yielded a p-value of 0.001 ($p<0.05$), confirming a significant difference between the two therapies in reducing dysmenorrhea pain.

These findings align with previous studies, such as those by Nurfaizah (2019), which also found a significant difference in effectiveness between Quranic Murottal and warm compress therapies for reducing dysmenorrhea, and Rahmayanti et al, who stated that Quranic Murottal therapy provided a relaxing effect that helped reduce menstrual pain (Rahmadhayanti, E., Afriyani, R., dan Wulandari, 2019). On the other hand, Kencanasari and Saudia explained that warm compress therapy has a physiological effect that causes vasodilation, improves blood circulation, and helps relax tense muscles, leading to faster pain relief (Kencanasari, O. N., dan Saudia, 2019).

However, the results of this study suggest that although Quranic Murotal therapy is effective in reducing pain, its effect is slower than that of warm compression therapy. This is because of the different mechanisms of action of the two therapies. Warm compresses provide a direct physical effect on the body, which helps relax muscles and reduce pain quickly, while Quranic Murotal therapy works on the central nervous system, gradually inducing relaxation through soothing sound stimuli. Although the relaxation effects of Quranic Murotal therapy help reduce anxiety and lower stress, this process takes longer to produce significant effects on menstrual pain.

These findings suggest that both therapies can be used as non-pharmacological alternatives to manage dysmenorrhea pain. Warm compression therapy may be a quicker and more immediate option for relieving menstrual pain, while Quranic Murotal therapy can be

applied as a longer-term solution for more holistic pain management. The combination of both therapies may also provide optimal results in reducing dysmenorrhea pain.

However, this study has several limitations, such as its small sample size, which may affect the strength and generalizability of the results. Additionally, this study did not consider other external factors that might influence dysmenorrhea pain levels, such as diet, stress levels, physical activity, or the psychological condition of the respondents. These factors could play a role in the pain intensity experienced and should be considered in future research.

Therefore, further studies are needed to explore the long-term effects of these therapies and investigate the potential benefits of combining warm compression therapy and Quranic Murottal therapy. Future research could also consider other variables that may influence pain intensity, such as sleep patterns, anxiety, and socioeconomic factors, which would provide a more comprehensive understanding of managing dysmenorrhea pain in adolescent girls.

6. CONCLUSION

This study evaluated the effectiveness of warm compression therapy and Murottal Al-Qur'an therapy in reducing dysmenorrhea pain in adolescent girls. The research results showed that warm compression therapy was more effective in reducing the pain scale than Murottal Al-Qur'an therapy. In the group administered warm compresses, pain reduction was recorded more quickly, while Murottal Al-Qur'an therapy, although providing a beneficial relaxing effect, showed a slower reduction in pain. Nevertheless, these two therapies can be useful non-pharmacological alternatives for managing dysmenorrhea pain, either separately or in combination, to achieve more optimal results.

However, this study has limitations, one of which is the small sample size, which may affect the accuracy and generalizability of the results. In addition, other external factors, such as diet, stress levels, physical activity, and psychological conditions, which were not considered in this study, can also influence the level of dysmenorrhea pain. These limitations need to be noted, and provide space for further research to explore these factors more deeply. Therefore, it is recommended that future researchers expand the sample and consider these external variables in future research. Further research can explore the long-term effects of these two therapies as well as the potential for a combination of warm compress therapy and Murottal Al-Qur'an therapy to provide more optimal results in reducing dysmenorrhea pain.

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