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The Therapeutic Benefits of Warm Compresses in Alleviating Menstrual Pain (Dysmenorrhea) among Young Woman

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ABSTRACT

The aim of this study was to examine the effectiveness of warm compresses in reducing dysmenorrhea, or menstrual pain, among young women. A pre-experimental study was conducted on 30 female students of 7th-grade at SMPK Waimangura (a junior high school) using a One-Group Pre-test Post-test Design, with respondents selected through purposive sampling. The study used a numerical rating scale to gauge the level of menstrual pain, and the data was analyzed using the Wilcoxon test. Prior to applying warm compresses, most of the participants reported moderate pain, but after the application of warm compresses, the majority reported no pain. The results showed a significant effect of warm compresses in reducing menstrual pain, with a p-value of 0.000 (<0.05). Therefore, it is recommended that young women use warm compresses as a non-pharmacological method to alleviate menstrual pain by applying a clean towel-covered glass bottle for 15-20 minutes. This intervention is effective in reducing muscle spasms in the abdominal area, providing a sense of comfort, and reducing pain.

Introduction

Adolescence is a period characterized by a significant transition, which is marked by sexual organ maturity and reproductive ability. For young women, menstruation is a crucial indication of this transition. Dysmenorrhea, which is pain experienced during menstruation, is a common complaint among women worldwide, with a particularly high incidence in Indonesia, particularly among adolescents [1]. Dysmenorrhea can be managed with pharmacological treatment, such as painkillers and anti-inflammatory drugs, or non-pharmacological treatment, such as exercise, relaxation techniques, and warm compress therapy applied to the affected area [2]. Warm compress therapy involves applying a compress filled with warm water to the painful area, which can help to reduce dysmenorrhea pain by facilitating blood flow, oxygen supply, and muscle relaxation [3]. Research has shown that warm compress therapy can significantly reduce dysmenorrhea pain [4], and regular exercise can also help [5]. In Indonesia, many young women rely on traditional medicine to treat dysmenorrhea [6], and education about menstruation and available treatments is crucial [7]. This study aims to evaluate the effectiveness of warm compress therapy in reducing dysmenorrhea pain among female students at a Christian middle school in Southwest Sumba District.

A preliminary study was conducted at Waimangura Christian Middle School in the Southwest Sumba District (Indonesia) on 60 female 7th-grade students. Interviews were conducted with the Student Affairs Section and some female students, which revealed that 40 of them had experienced primary dysmenorrhea. The most prevalent way of managing dysmenorrhea was through the consumption of anti-pain medication or by resting [8]. However, some students and their families opted for traditional medicine, as it is widely trusted in the community [6],[9]. Traditional medicine services are abundant in the area, and it is commonly believed to be effective in treating various ailments [10]. Despite this, warm water compresses have never been used to alleviate dysmenorrhea pain.

Some female students reported missing school due to the pain caused by dysmenorrhea. The school has a health center (Unit Kesehatan Sekolah or UKS) room for health services, but it is mainly focused on providing Fe tablets for young women, and no education or outreach has been conducted on menstruation. Therefore, this study aims to examine the effectiveness of warm compress therapy in reducing menstrual pain among 7th-grade female students at Waimangura Christian Middle School in the Sumba Barat Daya district.

Material And Methods

This study employs a pre-experimental research design, specifically the one-group pre-post test design, to establish a causal relationship between the application of warm compress therapy and the reduction of menstrual pain (dysmenorrhea). The research was conducted at

SMPK Waimangura, located in Nusa Tenggara Timur, Indonesia. The study population consisted of 7th grade students, and a purposive sampling technique was used to select 30 respondents to participate in the study. The research instrument utilized a warm compress standard operating procedure and a Numeric Rating Scale (NRS) observation sheet to measure the level of dysmenorrhea pain. Data analysis was conducted using the Wilcoxon signed rank test. The research received approval from an ethical review board with reference number 20b/FIKES-MID/IX/2022.

Results

Fig. 1 displays the characteristics of the 30 student respondents, with 60% of them being 14 years old and 56.7% experiencing regular menstrual cycles. Fig. 2 presents the results of the pre-test and post-test pain scale measurements.

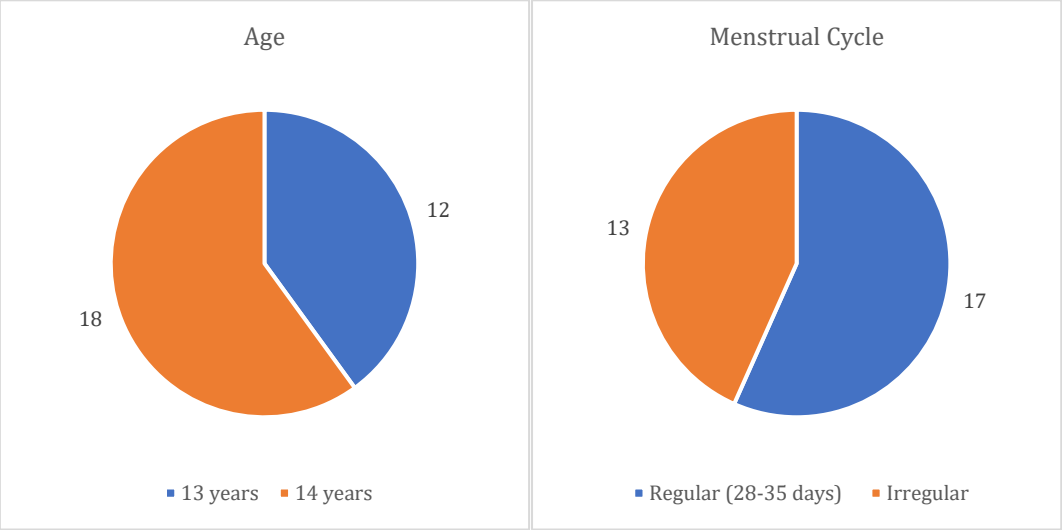

Fig. 1. Characteristics of Respondents

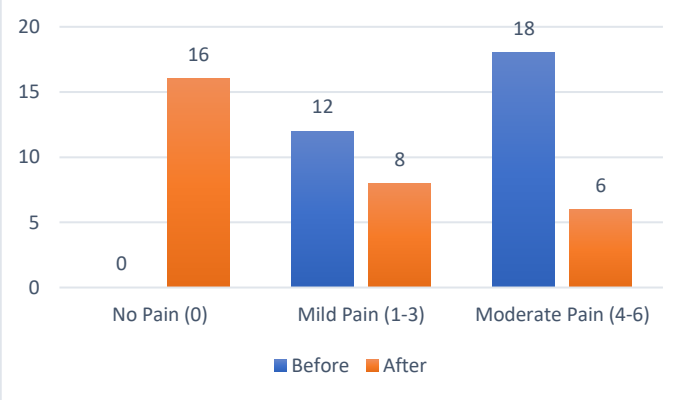

Fig. 2. Menstrual Pain Scale (Dysmenorrhea) Before and After Giving Warm Compresses

Prior to receiving warm compress therapy, 60% of respondents reported moderate menstrual pain, whereas after therapy, the majority (53.3%) reported no pain. The effectiveness of warm compress therapy in reducing dysmenorrhea pain in young women was analyzed using the Wilcoxon Signed Rank Test, which indicated a significant difference between pre-test and post-test scores with a p-value of 0.000, demonstrating the efficacy of warm compress therapy in alleviating menstrual pain.

Discussion

A. Dysmenorrhea before applying warm compress

Menstrual pain, also known as dysmenorrhea, is a prevalent gynecological complaint experienced by many young women during menstruation [2]. The pain can vary from mild to severe and is often accompanied by symptoms such as nausea, dizziness, and sensitivity [11]. The shedding of the endometrial lining when fertilization does not occur triggers painful contractions of the uterus, causing menstrual pain. Increased prostaglandin levels also contribute to the pain by causing uterine muscle contractions and uterine arteriolar vasospasm [12].

The age and menstrual cycle of a woman can also influence the occurrence of dysmenorrhea [11]. Primary menstrual pain occurs more frequently at the age of 12-15 years, and after menarche, usually after 12 months or more. According to a study, the majority of respondents who experience dysmenorrhea are aged 14. Additionally, those with regular menstrual cycles have an increased risk of experiencing menstrual pain. Hormonal factors and significant weight gain or loss can also affect the menstrual cycle and contribute to dysmenorrhea [13].

Prior to the use of warm compresses, young women typically treated menstrual pain with pharmacology, such as pain relievers [1]-[3],[14]. The study shows that the pain scale before applying warm compresses is usually in the moderate pain range. Warm compresses can help alleviate menstrual pain by increasing blood flow to the affected area, relaxing muscles, and reducing inflammation. Other non-pharmacological methods of managing dysmenorrhea include exercise, relaxation techniques, and dietary changes.

It is essential for young women to understand the normalcy of menstrual pain and seek proper medical advice if the pain is excessive or interferes with daily activities [15]. By comprehending the factors that contribute to dysmenorrhea and the various methods of managing it, women can take control of their menstrual health and live comfortably during their periods.

In summary, dysmenorrhea is a common gynecological complaint experienced by young women during menstruation. It is usually treated with pharmacology, such as pain relievers, but can also be treated with non-pharmacological methods, such as warm compresses. The pain scale before applying warm compresses is usually moderate, with most women experiencing pain in the lower abdomen, accompanied by nausea, dizziness, and emotional sensitivity. The age factor and menstrual cycle also influence the incidence of dysmenorrhea, with younger women and those with regular menstrual cycles at increased risk. Menstruation is a natural process that occurs in women between adolescence and menopause, characterized by the detachment of the endometrial lining of the uterus. Dysmenorrhea can cause women to be unable to carry out daily activities for 1-3 days each month, but normal levels of pain during menstruation are determined by the body's response to pain and the psychological condition of each individual [16].

B. Dysmenorrhea after applying warm compress

A study was carried out to assess the efficacy of warm compress therapy in alleviating menstrual pain (dysmenorrhea) among female students at a vocational school in South Lampung. The study's findings showed that the application of warm compress treatment resulted in a majority of the respondents reporting a reduction in menstrual pain. Specifically, 53.3% of the respondents reported no pain, 26.7% reported mild pain, and 20.0% reported moderate pain on the pain scale. The average menstrual pain scale decreased by two points after warm compress therapy, which was attributed to the researcher's adherence to standard operating procedures and the respondents' compliance with self-therapy at home.

Warm compress therapy involves the application of heat to areas experiencing pain. Heat is known to relieve pain by expanding blood vessels and increasing local blood flow [17]. When warm compresses are applied to the abdomen of a woman experiencing menstrual pain, it can increase muscle relaxation, reduce pain caused by spasms or stiffness, and provide a feeling of warmth. The warmth increases blood flow to the affected area, reduces muscle tension, and creates a sense of comfort. This therapy is an easy and relatively inexpensive alternative for pain management [13],[18].

The study found that warm compress therapy is effective in reducing dysmenorrhea pain, which is consistent with the findings of other studies that have compared warm and cold compresses [3]. The warm sensation of the compress is felt within the first 5 minutes, and the pain gradually decreases over time. The heat from the compress reduces tension, increases total white blood cells, and triggers inflammatory reactions and dilation of blood vessels, resulting in increased blood circulation and capillary pressure. Dysmenorrhea is often

triggered by stress and emotional factors, so warm compress therapy can create a comfortable feeling of relaxation [19].

Warm compress therapy is an effective and affordable alternative for reducing menstrual pain. It can be easily administered at home with adherence to standard procedures, and it provides a feeling of warmth and comfort that can reduce tension and promote relaxation. The findings of this study are consistent with previous research, highlighting the value of warm compress therapy in managing menstrual pain. In summary, the study's results showed that warm compress therapy is an effective means of reducing menstrual pain (dysmenorrhea) in female students [20]. The majority of respondents experienced a decrease in pain, with most reporting a pain scale of 0 (no pain) after receiving the warm compress treatment. The therapy works by increasing blood flow to the affected area, reducing muscle tension, and creating a feeling of comfort. Warm compress therapy is an easy and relatively inexpensive alternative for treating menstrual pain and can reduce the transmission of pain levels during menstruation by efferent neurons [2],[3].

C. The Effect of Giving Warm Compresses on Reducing Menstrual Pain

The present study aimed to investigate the effectiveness of warm compress therapy in reducing menstrual pain (dysmenorrhea) in female students. The study included 30 female students who were experiencing menstrual pain on the 1st and 2nd day of their menstrual cycle. Warm compress therapy was applied by placing a glass bottle filled with warm water and covered with a clean cloth on the painful area of the stomach for about 15 minutes. Prior to the intervention, the respondents provided informed consent and completed the Numeric Rating Scale (NRS) to measure their pain scale. The pain scale was measured again after the warm compress intervention was given.

The study found that the average pain scale value decreased after warm compress therapy was administered, indicating that the therapy had a positive impact on reducing dysmenorrhea pain. This finding is consistent with previous research that has demonstrated the usefulness of warm compresses in reducing menstrual pain [2],[3]. The study highlights the efficacy of non-pharmacological interventions, such as warm compresses, in reducing dysmenorrhea pain by inducing muscle relaxation and reducing uterine ischemia.

The study recommended that warm compress therapy is a cheap and easy-to-implement intervention for reducing menstrual pain. However, caution should be taken with the temperature of the water used to avoid skin irritation, and a comfortable and quiet environment should be provided for the therapy [21]. The study's findings suggest that warm compress therapy can improve the quality of life of young women with dysmenorrhea by reducing pain and improving concentration during learning and other activities. The study also

emphasized the importance of coping mechanisms, family support, and the surrounding environment in dealing with dysmenorrhea pain.

The study provides evidence that warm compress therapy is an effective intervention for reducing dysmenorrhea pain in female students. This finding has important implications for healthcare providers and policymakers seeking to improve the quality of life of young women with dysmenorrhea. Overall, the study suggests that warm compress therapy is an effective non-pharmacological intervention for reducing dysmenorrhea pain among young women and highlights the importance of considering non-pharmacological therapies for menstrual pain management. The study also emphasizes the need for education and awareness about the use of warm compresses as a simple and inexpensive option for managing dysmenorrhea pain. By providing a sense of comfort and relaxation, this intervention can improve the quality of life of young women and have a positive impact on their emotional well-being and ability to engage in daily activities [22].

Conclusion

The present study has demonstrated that warm compress therapy is an effective intervention for reducing menstrual pain or dysmenorrhea in young women. The study's analysis of data showed a significant decrease in the average value of the pain scale before and after the application of warm compress therapy. Prior to the intervention, the majority of the respondents reported experiencing moderate menstrual pain, but after the therapy, most of them reported no pain. The non-parametric Wilcoxon test indicated a significant difference between the pain scale before and after the intervention, providing evidence that warm compress interventions effectively reduce dysmenorrhea pain in young women.

The findings of this study highlights the effectiveness of non-pharmacological therapies, such as warm compresses, in reducing menstrual pain. The study emphasizes the need for education on non-pharmacological interventions for menstrual pain management and highlights the importance of providing a comfortable and supportive environment for young women. This study contributes to the growing body of evidence supporting the effectiveness of warm compress therapy in reducing dysmenorrhea pain. The implications of these findings extend to healthcare providers and policymakers who seek to improve the quality of life of young women with menstrual pain. By providing a simple and effective intervention for managing dysmenorrhea pain, warm compress therapy can have a positive impact on the emotional well-being and daily activities of young women.

Conflict of Interest

The authors declare that there is no conflict of interest.

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