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Original Research

Ginger Stew Vs Warm Compress Toward Dysmenorrhea Intensity In Adolescent; Experimental Study

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ABSTRACT

Background: *Adolescence can be defined as a developmental phase characterized by the transition from childhood to adulthood, usually during this period marked by changes in physiology, psychology, mental, emotional, and social. The transition signs in females indicate that they are experiencing menstruation. Menstruation can cause dysmenorrhea in some individuals, leading to disruptions in their daily activities. Ginger stew compress, or warm compress, is a non-pharmacological therapy that can help alleviate dysmenorrhea.*

Methods: *This was quantitative research using a quasi-experiment design with a two-group pretest-posttest approach. The participants were selected using a simple random sampling technique, resulting in a sample of 44 respondents divided into two groups. The instrument in this study was an observation sheet containing the identity of the respondent, and the scale to determine the level of pain intensity experienced was the Numeric Rating Scale (NRS).*

Results: *This research indicates that there was a significant difference in dysmenorrhea intensity when using a ginger stew compress compared to a warm compress. The statistical analysis used was an independent sample t-test performed in the study with a* p*-value that was lower than 0.05 (Asymp.Sig 2-tailed = 0.015), indicating a significant difference between the two types of compresses, giving a ginger stew compress and a warm compress toward the intensity of dysmenorrhea.*

Conclusion: *The ginger stew compress is more effective than the warm water compress to reduce the intensity of dysmenorrhea in adolescent girls in grade 7 at 2 JHS Gantiwarno. It is hoped that the results of this research can be utilized as an additional reference regarding research on treating menstrual pain with boiled ginger water compresses and warm compresses.*

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INTRODUCTION

Menstruation is the periodical bleeding of the uterus due to the shedding of the endometrium layer. Uterus muscle contractions interfere with the bloodstream into the

uterus and cause pain during menstruation, known as dysmenorrhea (Pangastuti et al., 2018). Uncomfortable menstruation was caused by dysmenorrhea, which is typically felt in the lower abdomen (Sarwono, 2011). There are two approaches to pain management: pharmacological and non-pharmacological. Non-pharmacological treatments, such as warm compresses, hypnotherapy, physical exercise, and herbal therapy (such as ginger), can be used to alleviate dysmenorrhea (Smeltzer & Bare, 2013; Lia, 2018).

Anurogo (2011), as cited in Betty & Ayamah (2021), reported that various plant-based ingredients, including ginger (Zingibers Officinale Rosc), can be relied upon to alleviate pain. Ginger contains oleoresin, such as gingerol, which has antioxidant properties that are even more potent than vitamin E. Gingerol also acts as an anticoagulant, which can help prevent blood clots and facilitate the flow of menstrual blood.

Furthermore, the decrease in prostaglandin production can be effected by ginger, which is one of the main culprits behind dysmenorrhea. Oleoresin in ginger works by inhibiting the *cyclooxygenase* (COX) reaction, thereby reducing inflammation and relieving uterine contractions. In addition to ginger, a warm compress is another non-pharmacological therapy that can alleviate dysmenorrhea.

Oktaviana & Imron (2017) have explained that a warm compress is a non-pharmacological treatment that effectively reduces dysmenorrhea. Applying a warm compress with a cloth or towel causes conduction of heat from the compress to the stomach, leading to blood vessel dilation and a reduction in muscle tension. A warm compress is considered to be the most effective method for reducing pain.

According to a preliminary study by researchers at 2 JHS Gantiwarno, 80% of 10 girls interviewed in grade 7 reported experiencing dysmenorrhea. Surprisingly, none of them knew the benefits of using ginger stew and warm compresses to alleviate their dysmenorrhea. Respondents deal with dysmenorrhea by sleeping or resting, drinking herbs, and taking medicine. The aim of this study was to investigate whether there is a difference in the intensity of dysmenorrhea for grade 7 students at 2 JHS Gantiwarno when using a ginger stew compress or a warm compress.

MATERIALS AND METHOD

A quantitative research method was used in this study with a quasi-experimental design and a two-group pretest-posttest approach. In particular, this study involved an experimental group and a control group (comparison), but prior observations (pretests) had been carried out, which allowed researchers to examine the changes that occurred after applying the experiment (program) (Sugiyono, 2017). This study consisted of grade 7 adolescent girls who experienced dysmenorrhea at 2 JHS Gantiwarno Klaten, totaling 50 individuals as a population. Simple random sampling was used to select a sample of 44 girls who were divided into two groups: the ginger stew compress group and the warm compress group.

This research focused on two variables, namely ginger stew compress and warm compress. The primary data was collected through direct observation of respondents and observation sheets of grade 7 adolescent girls at SMP Negeri 2 Gantiwarno. To collect data, the *Numeric Rating Scale* (NRS) pain scale was utilized. The data analysis involved descriptive univariate analysis, which calculated the frequency distribution, and bivariate analysis, which utilized the *sample-independent T-test* statistical test.

RESULTS

Analyzes Univariat

The purpose of the univariate analysis was to provide the percentage frequency distribution of the variables under study, such as the characteristics of the respondents, such as their age, age at menarche, and duration of menstruation.

Table 1. Characteristics Respondents in Group 1 (Ginger Stew Compress) and Group 2 (Ginger Compress)

Rusteristics	Group 1		Group 2	
	N	%	N	%
Age (Years)				
12	3	13,6%	4	18,2%
13	16	72.7%	12	54,5%
14	3	13,6%	6	27,3%
Sum	22	100%	22	100%
Menarche Age (Years)				
11	7	31,8%	7	31,8%
12	15	68,2%	15	68,2%
Sum	22	100%	22	100%
Length of Menstruation (Days)				
5	2	9,1%	1	4,5%
6	4	18,2%	6	27,3%
7	14	63,6%	14	63,6%
8	2	9,1%	1	4,5%
Sum	22	100%	22	100%

According to Table 1, most of the respondents in both groups were 13 years old, with Group 1 having as many as 16 respondents (72.7%) and Group 2 having as many as 12 respondents (54.5%). In terms of the age at menarche, the majority of respondents in both groups experienced it at the age of 12, with 12 respondents (68.2%) in group 1 and 15 respondents (68.2%) in group 2. Regarding the duration of menstruation, the majority of respondents in both groups experienced it for 7 days, with 14 respondents (63.6%) in group 1 and 14 respondents (63.6%) in group 2. Finally, in terms of BMI, the majority of respondents in both groups were in the normal category, with 11 respondents (50.0%) in each group.

Table 2. Pretest and Posttest menstrual Pain Intensity Levels in the Ginger Boil Water Compress Group

Intensity Level of menstrual Pain	*Pretest*		*Posttest*	
	Sum	Present (%)	Sum	Present (%)
0	0	0	2	9,1%
1	1	4,5%	5	22,7%
2	2	9,1%	8	36,4%
3	4	18,2%	4	18,2%

Intensity Level of menstrual Pain	*Pretest*		*Posttest*	
	Sum	**Present (%)**	**Sum**	**Present (%)**
4	4	18,2%	3	13,6%
5	6	27,3%	0	0
6	5	22,7%	0	0
7	0	0	0	0
8	0	0	0	0
9	0	0	0	0
10	0	0	0	0
Sum	22	100%	22	100%

Table 2 shows that the most reported dysmenorrhea intensity before using Ginger Stew Compress was a pain scale of 5 by 6 respondents (27.3%). The lowest pain scale reported was 1, reported by only 1 respondent (4.1%), while the highest scale was 6, reported by 5 respondents (22.7%). After using the ginger stew compress, the most dysmenorrhea intensity was reported on a pain scale of 2 by 8 respondents (36.4%). The lowest pain scale reported was 0, indicating no pain, reported by 2 respondents (9.1%), while the highest pain scale reported was a pain scale of 4 by 3 respondents (13.6%).

Table 3. Pretest and posttest Menstrual Pain Intensity Levels in the Warm Compress Group

Intensity Level of Menstrual Pain	*Pretest*		*Posttest*	
	Sum	**Present (%)**	**Sum**	**Present (%)**
0	0	0	0	0
1	0	0	7	31,8%
2	1	4,5%	6	27,3%
3	4	18,2%	7	31,8%
4	6	27,3%	2	9,1%
5	7	31,8%	0	0
6	4	18,2%	0	0
7	0	0	0	0
8	0	0	0	0
9	0	0	0	0
10	0	0	0	0
Sum	22	100%	22	100%

Table 3 shows that the most reported intensity of dysmenorrhea before using a warm compress was on a scale of 4 by 7 respondents (31.8%). The scale of pain with the fewest respondents was scale 1 with 1 respondent (4.5%), while the biggest pain scale

was 6 reported by 4 respondents (18.2%). After using a warm compress, the most reported intensity of dysmenorrhea was on a scale of 1 and 3 each by 7 respondents (31.8%). The lowest pain scale reported was 1, reported by 7 respondents (31.8%), while the biggest pain scale was 4 reported by 2 respondents (9.1%).

Table 4. Reducing the Intensity of Menstrual Pain in the Ginger and Warm Compress Water Compress Group

Decline	Ginger Stew Compress		Warm Compress	
	N	%	N	%
0	0	0	1	4,5%
1	6	27,3%	9	40,9%
2	8	36,4%	8	36,4%
3	5	22,7%	4	18,2%
4	3	13,6%	0	0
Total	**22**	**100%**	**22**	**100%**

Table 4 indicates that the most significant dysmenorrhea intensity declined with the use of a compress with ginger stew, which resulted in a decrease to pain scale 2 reported by 8 respondents (36.4%). On the other hand, the degenerative intensity of dysmenorrhea after using a warm compress was only on pain scale 1, as reported by 9 respondents (40.9%).

Table 5. Overview of Menstrual Pain in the Ginger Stew Compress and warm Compress Group

Group		Mean	Standard Deviation
Ginger Stew Compress	Pretest	4,22	1,47
	Posttest	2,04	1,17
Warm Compress	Pretest	4,40	1,14
	Posttest	2,86	1,08

Table 5 shows that the average intensity of dysmenorrhea in Group 1 was 4.22 and was down to 2.04, indicating a significant reduction in dysmenorrhea intensity. In comparison, the dysmenorrhea intensity in group 2 was 4.40 and down to 2.86, indicating a significant but less prominent reduction in the dysmenorrhea intensity compared to the ginger stew compress group.

Bivariate Analysis

Table 6. Normality Test of Pretest and Posttest pain scale data in the Ginger Stew Compress group at SMP N 2 Gantiwarno

Prepost	Shapiro Wilk	Sum
	Df	.sig
Pretest	22	,053
Posttest	22	,085

According to the Shapiro-Wilk normality test results shown in Table 4.6, it can be observed that the pain scale data before the application of ginger stew compress during dysmenorrhea had a significant value of 0.53. Meanwhile, the significant value after the application of the ginger stew compress was 0.85. Since both values are over 0.05, it can be concluded that the data is distributed normally.

Table 7. Normality Test of Pretest and Posttest pain scale data in the Warm Compress group at SMP N 2 Gantiwarno

Prepost	**Shapiro Wilk**	**Jumlah**
	Df	.sig
Pretest	22	,062
Posttest	22	,060

According to Table 4.7, the results of the Shapiro-Wilk normality test showed a sig value of 0.62 for the pain scale before a warm compress was given during dysmenorrhea and a significant value of 0.60 for the pain scale after ginger was given a stew compress. From both variables, it can be summarized that the .sig value is > 0.05, indicating that the data was normally distributed.

Table 8. Different Tests Before and After Ginger Stew Compress and Warm Compress with Paired Sample T-Test

		N	**Mean**	**SD**	**Df**	**T**	**sig (2-tailed**
Ginger Stew Compress	Pre	22	4,22	1.47	2	10	,000
	Post	22	2,00	1.17	1	16	
Warm Compress	Pre	22	4,40	1.14	2	7.9	,000
	Post	22	2,86	1.08	1	5	

Based on table 4.8, both groups have a sig value less than 0.05, it means there is a difference in the pain intensity before and after the interventions were given.

Table 9. The Differences og Ginger stew compress and Warm Compress on the Intensity of Menstrual Pain

Variable	**N**	**Mean**	**SD**	**T**	**df**	**Sig (2-tailed)**
Ginger Stew Compress	22	2,22	1.02	2.53	42	,015
Warm Compress	22	1,54	,738			

According to Table 4.12, results from the *Independent T-Test Sample* obtained a sig (2-tailed) value of 0.015, which means under 0.05. Therefore, the H_0 was denied and the H_a was accepted, indicating that there is a difference in the effectiveness of both compresses toward the intensity of dysmenorrhea in grade 7 at 2 JHS Gantiwarno.

DISCUSSION

Respondent Characteristics

a. Age

According to the research analysis, the average age of respondents who reported experiencing dysmenorrhea was 13 years old. Out of the ginger stew compress group, 16 teenagers (72.7%) reported experiencing dysmenorrhea at age 13, while in the warm compress group, 12 respondents (54.5%) reported experiencing dysmenorrhea at the same age. The findings of this research align with the study by Sianipar et al., (2009) in Eka (2014), which indicated a significant correlation between age and dysmenorrhea. The participants in this research were in the early adolescent age range of 12–16 years old (Ministry of Health, 2006). Dysmenorrhea tends to increase among women under the age of 25, and the pain usually subsides by the age of 30-35 years (Reeder and Koniak, 2011).

The age of a woman is a significant factor that affects the phenomenon of dysmenorrhea, which is typically experienced a few days before and during menstruation due to an increase in the secretion of prostaglandin hormone. As a woman gets older and menstruates more frequently, the secretion of prostaglandin hormones decreases (Novia & Puspitasari, 2011). Adolescent girls tend to experience dysmenorrhea more frequently, which decreases with age due to the decline in reproductive hormones. The age factor has been identified as an important variable that affects pain response (Wahid et al., 2007).

b. Menache Age

According to the analysis of the research, the frequency distribution of the age at which menstruation first occurred (menarche) among grade 7 students at 2 JHS Gantiwarno showed that most of the respondents in both groups, in terms of 68.2%, had their first menstruation at the age of 12. The findings of this study align with the study by Pundati et al., (2017) which reported the distribution of menarche age among eighth-semester students at UNSOED. The study found that out of 85 respondents, 49 individuals (57.6%) experienced menarche at an age greater than 12 years old, while 36 individuals (42.4%) experienced menarche under 12 years old.

The early onset of menarche can lead to difficulties and challenges for adolescents, as they may experience dysmenorrhea due to the inadequate development of their reproductive organs and a cervical deficiency. When the reproductive organs have matured, it involves the hypothalamic-pituitary-ovarian axis, which secretes LH and FSH hormones regulated by Gonadotropin Releasing Hormone (GnRH). These hormones can influence the production of gonadotropins containing estrogen and progesterone, which in turn can affect the growth of the endometrium. Therefore, early menarche can disrupt the normal reproductive processes and lead to dysmenorrhea (Bare & Smeltzer, 2002; Wulandari & Ungsianik, 2013; Aditiar A., 2018).

This study had an average age of menarche between 12 and 13 years old, which is considered within the normal range. This suggests that their reproductive organs have developed optimally, and there is no constriction or stenosis of the cervix. However, despite having normal reproductive development, they still experienced dysmenorrhea.

c. Duration of Menstruation

Results based on research analysis show that most respondents in both groups experienced menstruation for 7 days, with 14 respondents (63.6%) in each group. This

indicates that the average length of menstruation for both groups was 7 days. This study aligns with the research carried out by Sophia (2013) among students at SMK N 10 Medan, which indicates that there is a significant correlation between the duration of menstruation and the phenomenon of dysmenorrhea. As menstrual duration progresses, the uterus contracts more frequently, leading to the experience of pain. According to Bopak, (2004) a longer duration of menstruation leads to more frequent uterine contractions, which in turn results in increased secretion of prostaglandins. High levels of prostaglandins can lead to dysmenorrhea, and continuous uterine contractions can result in reduced blood supply to the uterus, causing dysmenorrhea.

The duration can be influenced by various factors, including psychological and physiological factors. Psychological factors may include emotional instability commonly experienced by adolescent girls, while physiological factors may be related to the levels of prostaglandin hormone production, which may vary among women (Sirait & Jemadi 2014; Ammar 2016).

d. Body Mass Index (BMI)

According to the researcher's analysis of the frequency distribution of Body Mass Index (BMI) among seventh-grade female students at 2 JHS Gantiwarno, it was found that 11 students (50.0%) in both groups had an average BMI in the normal category. This study aligns with the research carried out by Kurniati et al., (2019) among 54 students from the class of 2015 at the Faculty of Medicine, Baiturrahmah University. The study found that out of 54 respondents with a normal body mass index, 32 people (59.3%) experienced it the most frequently, and 28 people (51.9%) experienced mild dysmenorrhea. The research also showed that there is a correlation between BMI and dysmenorrhea among female students in the Faculty of Medicine year 2015 at Baiturrahmah University ($p = 0.009$, correlation coefficient value = 0.353).

The study has shown that both underweight and overweight women are at increased risk of experiencing dysmenorrhea. Abundant intake of nutrients may lead to decreased hypothalamic function, which can impact the levels of *Follicle Stimulating Hormone* (FSH) and *Luteinizing Hormone* (LH). These hormones play a crucial role in the menstrual process. Dysmenorrhea can be caused by increased levels of prostaglandins and vasopressin. However, numerous factors can also influence the levels of these hormones, such as stress levels, genetics, menstrual cycle history, lifestyle, and various other factors (Widjanarko, 2006).

Pretest and Posttest of Dysmenorrhea Intensity

Pretest and Posttest Dysmenorrhea Intensity in the Ginger Stew Compress Group

The study conducted on seventh-grade female students at 2 JHS Gantiwarno demonstrated that the application of a ginger stew compress resulted in a reduction of the average level of dysmenorrhea. A ginger stew compress should be applied for a duration of 15–20 minutes. Prolonged compress application times can impede the bloodstream and potentially cause harm to the skin, nerves, and body tissues. Pain relief can typically be felt between 10-15 minutes after the intervention because the painful area initially experiences stiffness and requires a few minutes to adapt to the therapy. Over time, the intensity of the pain decreases, and the respondent experiences a greater sense of comfort (Susanti, 2014).

Paired sample T-test results in Table 4.8 show that there was a difference in dysmenorrhea intensity before and after the ginger stew compress was given. The

results of this study align with the research by Fatmawati et al., (2018), which concluded that ginger-boiled compress can significantly alleviate dysmenorrhea in female students residing at the Sulaiman-Bilqis dormitory of the Darul Ulum Jombang Islamic Boarding School. Proper management of dysmenorrhea is crucial to prevent it from hindering daily activities and impacting performance. The use of herbal plants is one viable method for managing dysmenorrhea.

Ginger (*Zingiber Officinale Amarum*) is a type of herbal plant that can be utilized as a natural remedy to alleviate dysmenorrhea. The rhizome of ginger contains compounds that exhibit analgesic, antipyretic, and anti-inflammatory properties, making it effective in reducing the intensity of menstrual cramps (Agoes, 2010). An alternative treatment for dysmenorrhea is ginger due to its high content of oleoresins, which are bioactive compounds that include gingerol and shogaol that have anti-inflammatory properties.

This helps to block the production of prostaglandins and reduce the intensity of pain during menstruation. Additionally, ginger rhizomes are a good source of essential nutrients such as Ca, Mg, Fe, *β*-carotene, and *ascorbic acid*. Fe can be beneficial in preventing anemia during menstruation, as women tend to lose significant amounts of iron during their menstrual cycle. Additionally, the Ca and *Ascorbic acid* present in ginger can help soothe nerves and alleviate dysmenorrhea (Tandi, 2015).

The ability of ginger to reduce the intensity of dysmenorrhea is attributed to its inhibitory effect on thromboxane and its impact on prostaglandin activity. Dysmenorrhea is caused by myometrial contractions triggered by high levels of prostaglandins in women, particularly those who experience severe dysmenorrhea (Nurlaili & Putri, 2017). Ginger can be as effective as commonly used analgesic drugs like mefenamic acid and ibuprofen in relieving dysmenorrhea (Anurogo, 2011; Shirvani & Tabari, 2014).

The application of a ginger stew compress can effectively reduce dysmenorrhea by providing impulses that help suppress pain signals, resulting in a decrease in pain intensity. These impulses are generated by the warming sensation caused by the ginger stew on the affected area of the abdomen. When the skin is exposed to heat, it stimulates the nerves sensitive to temperature. This stimulation sends signals from the affected area to the hypothalamus, which initiates a response to normal body temperature and awareness of local temperature. This is how the local response to heat occurs (Wilis, 2011).

Studies have shown that topical application of ginger can affect systemic absorption. Research using ginger compresses on human skin has demonstrated the absorption of ginger extract through epithelial tissue. In addition, ginger contains compounds such as oleoresins, which can dissolve in addition ginger contains compounds such as oleoresins which can dissolve in water and produce an effective and long-lasting warm compress, so the occurrence of vasodilation of blood vessels, thereby preventing uterine ischemia or hypoxia that can help to increase blood circulation (Ozgoli et al, 2009; Rahayu, 2016).

According to research conducted on grade 7 adolescent girls at 2 JHS Gantiwarno, it was found that warm compresses were effective in reducing dysmenorrhea. The warm compress was applied for 15-20 minutes, and the results showed a significant decrease in the average dysmenorrhea experienced by the participants. The analysis of data using the paired sample T-test in Table 4.9 revealed a significant disparity in the magnitude of dysmenorrhea before and after the application of a warm compress. This finding aligns

with the study by Rahmadhayanti et al., (2017) which reported that warm compress application reduced the level of pain from moderate to mild, and the effect was significant after the application of the warm compress.

A warm compress can be applied for pain relief and to relax tense muscles. The application of a warm compress works by utilizing the principle of conduction. This is achieved by placing a towel or cloth with the desired temperature on the stomach, which will transfer heat to the area and create a warm feeling. This process leads to the expansion of blood vessels in the affected region, thereby facilitating enhanced blood circulation to the area. The warmth also promotes psychological relaxation and a sense of comfort, which can help reduce the sensation of pain (Anugraheni & Wahyuningsih, 2013).

Giving a warm compress to the targeted area can trigger the hypothalamus via the spinal cord. Heat-sensitive receptors in the hypothalamus can then activate the effector system, which sends signals to induce sweating and peripheral vasodilation. The vasomotor center in the medulla oblongata of the brain stem regulates the size of blood vessels, which is influenced by the anterior part of the hypothalamus, resulting in vasodilation. Vasodilation causes an increase in blood circulation and can also relieve ischemia in myometrial cells, which in turn reduces myometrial smooth muscle contractions and promotes muscle relaxation.

As a result, the pain caused by spasms or stiffness is reduced. The application of a warm compress on the skin can also stimulate the production of endorphins, which are natural painkillers that can block the transmission of pain signals (Tamsuri, 2007). Heat therapy helps to reduce inflammatory products such as *bradykinin, histamine*, and *prostaglandins*, which can alleviate pain. Furthermore, applying heat therapy can activate nerve fibers that are capable of closing the synapse gate, thereby blocking pain signals from reaching the spinal medulla and brain (Sylvia & Lorraine 2012).

Differences between Ginger Stew Compress and Warm Compress Against Dysmenorrhea Intensity

The results from the independent sample t-test revealed that the average pain level for the ginger stew compress was 2.22, while for the warm compress, it was 1.54. The inter-subject effect analysis yielded a significant value of 0.015, which is under 0.05. This indicates a significant difference in the pain relief intensity between the ginger stew compress and the warm compress.

Moreover, the average pain level for the ginger stew compress was lower than that for the warm compress, indicating that the ginger stew compress was more effective in reducing dysmenorrhea. These study results were consistent with the findings of research by Karomika et al., (2019) that revealed a difference in the reduction of dysmenorrhea scale between adolescents who were treated with a ginger stew compress and those treated with a warm compress. Herbal ingredients can be used to treat pain, and herbal concoction therapy involves using traditional medicines derived from plant materials. Several plant materials, such as turmeric, cinnamon, cloves, and ginger, are believed to have pain-relieving properties (Anurogo, 2011). Ginger was the herbal plant used in this study.

Ginger is a viable option due to its high content of oleoresins, which are bioactive components composed of gingerol and shogaol that act as anti-inflammatory agents. This mechanism can block the production of prostaglandins, thus reducing the severity of dysmenorrhea. Additionally, ginger rhizomes are rich in essential nutrients like Ca,

Mg, Fe, β-carotene, and ascorbic acid. Fe can be beneficial in preventing anemia during menstruation, as women tend to lose significant amounts of iron during their menstrual cycle. Additionally, the calcium and ascorbic acid present in ginger can help to soothe nerves and alleviate dysmenorrhea (Tandi, 2015).

A warm compress is a non-pharmacological method of pain management that can be used to alleviate dysmenorrhea. The application of heat causes vasodilation, which in turn increases blood flow to the affected area. This increased blood flow can help remove pain-causing substances like bradykinin, histamine, and prostaglandins (Sylvia & Lorraine 2012).

According to the researchers' assumptions, both the ginger stew compress and the warm compress were effective in reducing dysmenorrhea intensity among the respondents in the study. However, the more effective therapy was the ginger stew compress. This is because ginger contains chemical compounds that can retain heat longer than plain water. The pain scale decrease among the respondents who were given ginger stew compresses was greater compared to those who were given warm compresses.

Respondents who received warm compresses reported that the heat was only temporary, while those who received ginger stew compresses reported that the heat was lasting and effective in relieving pain. Thus, the ginger stew compress was more effective in effectively absorbing the heat into the affected area of the body that was experiencing pain.

CONCLUSIONS AND SUGGESTIONS

The study showed that the average pain level for dysmenorrhea before using a compress of boiled ginger water was 4.22, with a standard deviation of 1.47. After using the ginger stew compress, the average pain level was 2.04 with a standard deviation of 1.17. This research showed that the average pain level for dysmenorrhea before using a warm compress was 4.40, with a standard deviation of 1.14. After using a warm compress, the average pain level was 2.86, with a standard deviation of 1.08.

According to the Paired Sample t-test results, the study found that warm compress had a significant effect on reducing the intensity of dysmenorrhea, as indicated by the Sig value (2-tailed) of 0.000, which is less than the predetermined level of significance (0.05). The study indicates that the application of ginger stew compress had a significant impact on dysmenorrhea intensity, which was demonstrated by the paired sample t-test results. The Sig value (2-tailed) was 0.000, indicating that the effect was statistically significant at a significance level of less than 0.05.

The study's results showed that both ginger stew compresses and warm compresses reduced dysmenorrhea. However, ginger stew compress was found to be more effective, as indicated by the results of the *independent sample t-test*, which showed a significance value of Sig (2-tailed) = 0.015, indicating that Sig (2-tailed) < 0.05. It can be concluded that there is a significant difference in the effects of ginger stew compress and warm compress on dysmenorrhea intensity.

Educational institutions such as schools or universities can utilize this research as a reference for managing dysmenorrhea among their students. They can provide information about the benefits of using ginger stew compresses and warm compresses for pain relief. As both ginger stew compress and warm compress have been shown to effectively reduce dysmenorrhea in the study, it is recommended that young women consider using either of them as an alternative method to alleviate dysmenorrhea.

Health workers can use the results of this study as a reference to provide non-pharmacological treatment options for dysmenorrhea, particularly in adolescents. The use of ginger stew compresses and warm compresses can serve as complementary therapies to pharmacological treatments and can potentially reduce the reliance on pain medications.

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