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by Mukhoirotin, Kurniawati, Diah Ayu Fatmawati

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The Effectivity of Cold Compress and Warm Compress to Intensity Level of Menstrual Pain (Dysminorhea)

*Mukhoirotin[1)], Kurniawati[1)], Diah Ayu Fatmawati[1)]
[1)]Nursing Science Program, Faculty of Health Science, Unipdu Jombang, Indonesia
*Email: mukhoirotinkhoir@yahoo.co.id

ABSTRACT

Introduction: Dysmenorrhea is painful during or shortly before getting menstruation, it is the most uterine problem for women in all ages. Nonpharmacological treatments will help to solve this problems are include cold compress and warm compress. But, as I know not many studies concern on the effectivity both of cold compress and warm compress. The aim of this study was to determine the effectiveness of cold compress and warm compress to intensity level of menstrual pain (Dismenorea).

Methods: The research design used Quasy Experiment with approach Pretest-Posttest Design, used Purposive Sampling technique. Population in this research was student of FIK Unipdu Jombang with sample 40 respondents and it selected by inclusion and exclusion criteria. Instrument to measure pain intensity used NRS *(Numeric Rating Scale*), data were analyzed using Paired T-Test and Independent Paired T-Test, with significance level $\alpha \leq 0{,}05$.

Results: The results showed that before giving treatment the intensity of menstrual pain in both groups were comparable ($p > 0.05$). However, after giving treatment found that Intensity menstrual pain were decreased significantly from 5.95 - 2.75 in the cold compress group, and from 6.80 to 3.55 in warm compresses ($p < 0.05$). After the intensity of menstrual pain treatment there was no significant difference between cold compress group and warm compress (2.75 ± 1.45 vs 3.55 ± 1.19).

Conclusion: Cold compress and warm compress were effective for reducing intencity of menstrual pain and it might an alternative of intervention for reducing menstrual pain.

Keywords: Menstruation Pain, Cold Compress, Warm Compress

Introduction

Dysmenorrhoea is pain during or shortly before menstruation, it is the most common obstetric problem among women in all ages and including among teenager group. Many teenagers experienced dysmenorrhoea in the first three years after menarche [1]. Commonly, dysmenorrhoea occur in the first menstruation experience (menarche). Menstruation pain can be decrease after menstruation, but in some women mentruation pain can be continue during or until finished the menstrual period so it will give an impact like unable to do daily activities. Non-pharmacological treatments were more usefull to solve this problem because commonly it was no give negative impact for health. Cold compress and warm compress are one of non-pharmacological treatments for reducing menstrual pain. This effort is an intervention in pain management using cutaneous stimulation techniques. Cutaneous stimulation causes the release of endorphins, thus it will block the transmission of pain stimuli [2]. But so far the differences between cold compresses and warm compresses to decreasing intesity of menstrual pain (dysmenorrhoea) are not yet clearly known.

Dysmenorrhoea is a very common gynecological problem that affects women in childbearing age [3]. An estimates of prevalence was variety across the world, ranging

from 56.4% in mainland China, 51% in Turkey, 67% in Sweden, 80% in Western Australia, 85% in Spain, 60-90% in the United States, 73.3% among Taiwanese high school girls (Average age 16.7 years old) [4], 87.8% among students in Turkey [5], 89.1% in Iran [6], 60,9% among female medical students in Kingdom of Saudi Arabia [7], 76% in Malaysia [8] and 60% in Canada (Burnettet al, 2005) in [9]. However, in Indonesia, an estimated at 55% among women who in childbearing age were experienced menstrual pain [10], and 50% of them were reported got mild symptoms, 30% got moderate symptoms, and 20% got severe symptoms [11].

Factors that contribute to dysmenorrhea are include the age of early menarche, increased menstrual bleeding, alcohol and tobacco use, low socioeconomic status, obesity, and depression/anxiety (French L, 2005) in [12]. Moreover, according to Wiknjosastro (2007) there are several factors can affect primary dysmenorrhea, including psychiatric factors, constitutional factors, factors of cervical canal obstruction (cervix), factors of endocrine and allergic factors [13]. Primary dysmenorrhoea has a biochemical basis and occurs due to prostaglandin release during menstruation. During the luteal and menstrual phases, prostaglandin F2-alpha (PGF2-α) was secreted. Excessive loose of PGF2-α will increases the amplitude and frequency of uterine contractions and it can causes vasospasm of the uterine arterioles, causing lower abdominal ischemia and cramps [1] and pain and back [14]. If it is late for handling, the pain will spread to the waist and thighs, followed nausea and vomiting, headaches, diarrhea and sensitive. Menstrual pain was varies from the mild to severe of pain, so this will disturb of daily activities [15]

Treatment of menstrual pain (dysmenorrhoea) can be using pharmacologically and non-pharmacologically method. Commonly, pharmacological interventions for reducing pain are including nonsteroidal anti-inflammatory drugs (NSAIDs) and oral contraceptive pills. Although it was useful and effective reducing menstrual pain but it also give effects like drug dependence and also unnecessary costs [16,17], diarrhea, abdominal pain, nausea [18], kidney complications, liver complications, sleep disorders [19], digestive disorders [20]. Commonly, pharmacological treatment of dysmenorrhea is successful, but the failure rate is 20-25% [12]. Non-pharmacalogical treatments for dysmenorrhea include cold compresses and warm compresses. Cold compresse is ice therapies that can reduce prostaglandins which is it has fungtion for strengthening pain and other subcutaneous in injury places by inhibiting the inflammatory process. This is because cold compresses can reduce blood flow to a part and reduce bleeding edema so it will give analgesic effects by using slow down the speed of nerve delivery so pain impulses will reach the brain with less quantity [21].

Warm compresses with hot jars cause conduction, where there is transfer of heat from the bladder into the body so make dilation of blood vessels and decreased muscle tension and in end dysmenorrhoea pain will decrease or disappear [2]. Skin stimulation causes endorphins loose, than it will blocking the transmission of pain stimulus. The gate control theory said that skin stimulation can activates nerve fibers of A-Beta with faster transmission. This process will decrease the transmission of pain through C and delta-A fibers with small in diameter so the synapse gate will close the transmission of pain implus [2]. Based on the phenomenon, researchers are interest and would like to take this study with the title "The Effectiveness of Cold Compresses and Warm Compresses to Decreasing Menstrual Pain Intensity (Dysmenorrhea)".

Methodology Research

The research design used was Quasy Experiment with Pretest-Postest Design. The population in this study was all students in Faculty of Health Science in Unipdu Jombang who experienced menstrual pain (dysmenorrhoea). The sample size in this study was 40 respondents who met the inclusion and exclusion criteria. The inclusion criteria in this study were: 1) Students who experienced primary dysmenorrhoea; 2) Students who not received anti-pain therapy; 3) Cooperative students. While the exclusion criteria in this study were: 1) Students who experienced secondary dysmenorrhoea; 2) Students who are in the middle of refusing the treatment. The sample in this study was divided into two groups: cold compress group (n = 20) and warm compress group (n = 20). The sampling technique used purposive sampling. Thermometer used to measure the temperature. Moreover, the instrument to use warm compress is a hot jar and ice bag for cold compress. NRS (Numeric Rating Scale) used to measure the pain level. Data were analyzed by using Paired Sample T-Test and Independent Sample T-Test with $\alpha \leq 0.05$.

Results

Characteristics of respondents in this study include: 1) Age; 2) Age of menarche; 3) Menstruationl Cycle; 4) Menstrual Duration; 5) Amount of menstruation; 6) Pain characteristic; and 7) How to copewith pain, as shown in Table 1.1.

Table 1.1 Characteristics of respondent and Homogeneity

	Variable	Cold compress	Warm compress	P value
		Mean (SD)		
1.	Age (years)	20 (1,52)	20,65 (0,93)	0,435
2.	Age of Menarche (years)	12,90 (1,12)	13,20 (1,36)	0,570
3.	Menstruation duration (day)	7,35 (1,14)	7,55 (1,23)	0,664
		N (%)		
4.	Menstruationl Cycle			
	a. Regular	10 (50)	11 (55)	1,000
	b. Irregular	10 (50)	9 (45)	
5.	Amount of menstruation			
	a. Moderate	11 (55)	9 (45)	0,85
	b. Much	9 (45)	11 (55)	
6.	Pain characteristic			
	a. Burnt	1 (5)	0 (0)	0,337
	b. Cramps	4 (20)	5 (25)	
	c. Twisting	9 (45)	7 (35)	
	d. Oppressed	6 (30)	4 (20)	
	e. Acute	0 (0)	4 (20)	
7.	How to copewith pain			
	a. Take medicine	2 (10)	1 (5)	0,435
	b. Take a rest	15 (75)	14 (70)	
	c. Ignore	3 (15)	5 (25)	

Source: Primary data, 2018

Based on table 1.1 shows that the characteristics of respondents in both groups are comparable. The results of the homogenity test of variables shows that all respondents' characteristics in both groups do not have significant differences with a significance level of p> 0.05. Thus one of the research requirements has been fulfilled, because the characteristics of the subjects in both groups are homogeneous.

The intensity of menstrual pain before giving treatment in the group of cold compresses and warm compresses is comparable (p> α), as shown in table 1.2 below.

Table1. 2 Intensity of Menstrual Pain (Dysmenorrhea) Before giving Treatment

Group	*Mean*	SD	Beda *Mean* (95% *CI*)	p
Cold compress	5,95	1,54	-0,85 (-1,76 – 0,06)	0,065
Warm compress	6,80	1,28		

Source: Primary data, 2018

The intensity of menstrual pain after giving cold compresses and warm compresses for 20 minutes, obtained the average value of menstrual pain intensity as shown in Table 1.3.

Table 1.3 Intensity of menstrual pain (*Dismenorea*) after giving treatment

Group	*Mean*	SD	Beda *Mean* (95% *CI*)	p
Cold compress	2,75	1,45	- 0,80 (-1,65 – 0,05)	0,064
Warm compress	3,55	1,19		

Source: Primary data, 2018

Table 1.4 the differences intensity average of menstrual pain (Dysmenorrhea) before giving treatment and giving after treatment

Group	Before treatment Mean (SD)	After treatment Mean (SD)	Beda *Mean* (95% *CI*)	p
Cold compress	5,95 ± 1,54	2,75 ± 1,45	3,20 (2,73 – 3,67)	0,000
Warm compress	6,80 ± 1,28	3,55 ± 1,19	3,25 (2,82 – 3,68)	0,000

Discussion

The results of this study showed that the average intensity of menstrual pain (dysmenorrhoea) before giving treatment in cold compress group obtained in moderate intensity. However, in warm compress group obtained the average intensity of menstrual pain at severe intensity. This results was in accordance with the opinion of Turk and Melzack (2011), they said that the intensity of dysmenorrhea pain can be mild, moderate and severe [22]. Mild dysmenorrhoea is lil pain and it does not disturb daily activities and does not require pain medicine, moderate dysmenorrhoea is pain and it can disturb daily activities but it can be managed with pain relief, while severe dysmenorrhoea is pain and completely disturb daily activities. The results of previous studies showed that the average intensity of menstrual pain experienced by respondents in the medium category [23]. Several factors are related with the incidence of dysmenorrhoea such as age and age of menarche, longer duration of menstruation, excess menstrual volume [24, 25, 26].

Dysmenorrhoea can be occur among adolescents and young women, in this study showed that the age of respondents in both groups are in adolescents, where the average age in cold compress group was 20 years old and the average age in warm compress group was 21 years old. The results of this study was in accordance with the result of previous study which showed that the average age of respondents who experienced dysmenorrhoea

was 21 years old [27], and also in accordance with Perry et al (2010), he stated that dysmenorrhoea was the most and common gynecological problem in women, especially at the age of 17 to 24 years old [28]. The averange age of menarche respondents in both groups were 13 years old. Age of menarche in this study was normal menarche category, it is in range 12-16 years old [29]. The result of previous study also showed that the age of menarche respondents who experienced dysmenorrhea was 13 years old on average [30]. The age of menarche was related with the intensity of menstrual pain for dysmenorrhoea [31]. The intensity of menstrual pain in respondents who experience early menarche (age 9-11 years) was higher than the respondents with normal age menarche. This is consistent with previous studies which show that women with early menarche are disposed to get severe dysmenorrhoea [32].

Menstrual duration is one of the factors that affect dysmenorrhoea. The average menstrual duration is 5 days (range 3-6 days) [28]. The results of this study showed that the averange of menstrual duration in both groups were obtained more than 7 days, this could increased the risk of dysmenorrhea. Menstrual cycle of respondents in this study obtained the half of cold compress group was regular. However, in warm compress group most menstrual cycles were irregular. Respondents with irregular menstrual cycles showed that the intensity of menstrual pain was higher compared with regular menstrual cycle respondent. Women who have irregular menstrual cycles will increase the risk of dysmenorrhoea [33]. The amount of menstruation in cold compress group was in moderate level, the amount of menstruation in warm compresses group was mostly large. Heavy menstrual bleeding will increases the risk of dysmenorrhoea [34]

The results of this study showed that the average intensity of menstrual pain in cold compress group was significant decrease range from 5.95 to 2.75. The results of paired sample t-test showed that there was a significant effect of cold compress to decreasing the intensity of menstrual pain (dysmenorrhoea). This decrease occurred if a cold compress was given by using an ice bag and put it on the abdomen for 20 minutes. Providing cold compress will make the respondent feel immune, this is because cold compresses can reduce blood flow to a part and reduce bleeding edema which is it will give analgesic effects by slowing the rate of nerve delivery so the pain impulses will less reach to the brain [21] and perception of pain will decrease. Cold therapy will give affect the impulses carried by tactile fibers A-Beta to dominate so the "gate" will close and the pain impulses will be blocked. Pain will be reduced or disappear for a while [35] The results of this study were in accordance with previous studies which stated that cold compress was effective to reduce the intensity of menstrual pain (dysmenorrhoea) [36, 37, 38]. Giving cold compresses can also reduce the pain at perineal wounds in postpartum mothers [39].

The average intensity of menstrual pain after giving warm compresses experienced a significant decrease, ranged from 6.80 to 3.55. The results of paired sample t-test showed that there was a significant effect of warm compress to reduce the intensity of menstrual pain (dysmenorrhoea). This decrease occurred if warm compresses were given by using a bag with warm water with a temperature of 40-45 C^{o} and put it on the abdomen for 20 minutes. Giving warm compress to respondents can help reduce pain, because it will make enlarge the blood vessels (vasodilation) and will increase blood supply throughout the body, besides that it can also provide comfort to the respondents [Steven 2007] in [40] so it can stimulate to release the endorphin β homon. The results of previous studies indicated that warm compresses was effectively to reducing the intensity of menstrual pain [41. 42]

The results of Independent Sample T-Test showed that after given treatment there was no significant difference in the intensity of menstrual pain in cold compresses group and warm compresses group ($p > 0.05$). This analysis shows that cold and warm compress are equally effective to reducing the intensity of menstrual pain. Cold compress and warm compress are techniques for cutaneous stimulation. The mechanism of the technique of cutaneous stimulation in reducing pain can be explained according to the gate control theory. The gate control theory said that skin stimulation will activate the sensory and transmission of A-Beta sensory nerve fibers. This process will decrease the transmission of pain through C and delta-A fibers with small diameter so that the synapse gate closes the transmission of pain implus. Cutaneous stimulation will stimulate peripheral fibers to send impulses to the dorsal horn in spinal cord, when the impulses carried by A-Beta fibers dominate the gate mechanism, so the pain impulses were not delivered to the brain [35]. Providing cold and warm compresses adjusted to tolerance for every woman who has menstrual pain, if a woman has cold allergy, it should be given a warm compress and if a women has warm allergy, it should be given a cold compress, if the woman are more comfortable with a cold compress then the intervention can be given.

Research Limitations

The application of cold compresses and warm compresses in this study were carried out only when occurred menstrual pain and this intervention was taken every get menstrual pain, future research should be more efforts to prevent or decrease dysmenorrhoea in the long term.

Conclusion and Reccomendation

Cold compresses using ice and warm compresses with a temperature of 40-45 C^0 are effective to reducing the intensity of menstrual pain so it can be used as an alternative non-pharmacological intervention for treatening menstrual pain.

Ethical Research

This study has obtained ethical clearance from Nursing Faculty ethics committee of Airlangga University, Surabaya.

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References

[1] Lowdermilk, Perry & Cashion. (2013). *Keperawatan Maternitas (maternity nursing)*. Edisi 8. Buku 1. Elseiver. Singapore.

[2] Potter & Perry. (2010). *Buku Ajar Fundamental Keperawatan (Fundamental of nursing book)*. EGC. Jakarta.
[3] Esimai O, Esan GO. 2010. Awareness of Menstrual Abnormality Amongst College Students in Urban Area of Ile-Ife, Osun State, Nigeria. *Indian J Community Med*. 35:63–66.Diakses Pada Tanggal 1 April 2017.
[4] Wu LL., Shu CH., Liu, CF. (2012). *Effects of Noninvasive Electroacupuncture at Hegu (LI4) and Sanyinjiao (SP6) Acupoints on Dysmenorrhea: A Randomized Controlled Trial*. The Journal Of Alternative And Complementary Medicine. Volume 18, Number 2, 2012, pp. 137–142. Diakses Pada Tanggal 21 Maret 2015.
[5] Potal A, Celik H, Gurates B, et al. 2009. Prevalence of Primary Dysmenorrhea in Adult Female University Students. *Arch Gynecol Obstet*. 279:527–532.Diakses Pada Tanggal 1 April 2017.
[6] Habibi N, Huang M, Gan W, Zulida R, Safavi SM. 2015. Dysmenorrhea andfactors associated with its intensity among undergraduate students: across-sectional study. *Pain Manag Nurs*. 16(6):855–861. Diakses Pada Tanggal 1 April 2017.
[7] Al-Dabal BK, Koura MR, Al-Sowielem LS, Barayan SS. (2014). Dysmenorrhea and associated risk factors among university students in Eastern Province of Saudi Arabia. *World Family Med J: Incorporating Middle East J Family Med*. 7(10):5.
[8] Wong LP. (2011). Attitudes Towards Dysmenorrhoea, Impact and Treatment Seeking among Adolescent Girls: A Rural School-Based Survey. *Aust J Rural Health*., 19:*218–223*.
[9] Kamel DM, Tantawy SA & Abdelsamea GA. 2017. Experience of Dysmenorrhea among a Group of Physical Therapy Students from Cairo University: an Exploratory Study. *Journal of Pain Research*. 10:1079–1085. Diakses Tanggal 1 April 2017
[10] Proverawati. (2009). *Menarche: Menstruasi Pertama Penuh Makna (Menarche: first menstruation is full meaning)* . Nuha Medika. Yogyakarta.
[11] Benson, C. (2008). *Buku Saku Obstetrik dan Ginekologi (Obstetric and ginecology book)*. EGC. Jakarta.
[12] Navvabi Rigi et al. (2012). *Comparing The Analgesic Effect of Heat Patch Containing Iron Chip and Ibuprofen for Primary Dysmenorrhea: A Randomized Controlled Trial*. Biomed Central. Diakses Pada Tanggal 1 April 2017.
[13] Wiknjosastro, H. 2007. *Ilmu Kebidanan (midwifery science)*. Jakarta: Yayasan Bina Pustaka Sarwono Prawirohardjo.
[14] Varney. (2006). *Buku Ajar Asuhan Kebidanan*. Edisi 4. Vol 1. EGC. Jakarta.
[15] Manuaba, Ida Bagus Gede. (2010). *Ilmu Kebidanan, Penyakit Kandungan dan Keluarga Berencana untuk Pendidikan Bidan (midwifery science, gynecological disease and family planning for midwifery education)*. Edisi 2. EGC. Jakarta.
[16] Gharloghi S, Torkzahrani S, Akbarzadeh AR, Heshmat R. 2012. The Effects of Acupressure on Severity of Primary Dysmenorrhea. *Patient Prefer Adherence*. 6:137–42.Diakses Pada Tanggal 1 April 2017.
[17] Chen MN, Chien LW, Liu CF. Acupuncture or Acupressure at the Sanyinjiao (SP6) Acupoint for theTreatment of Primary Dysmenorrhea: A meta-analysis. *Evid Based Complement Alternat Med*. 2013:493038. Diakses Pada Tanggal 1 April 2017.
[18] Kashefi F, Ziyadlou S, Khajehei M, Ashraf AR, Fadaee AR, Jafari P. 2010. Effect of Acupressure at the Sanyinjiao Point on Primary Dysmenorrhea: A Randomized

Controlled Trial. *Complement Ther Clin Pract*. 16:198–202.Diakses Pada Tanggal 1 April 2017.

[19] Wang YJ, Hsu CC, Yeh ML, Lin JG. (2013). Auricular Acupressure to Improve Menstrual Pain and Menstrual Distress and Heart Rate Variability for Primary Dysmenorrhea in Youth with Stress. *Evid Based Complement Alternat Med*. 2013:138537.Diakses Pada Tanggal 1 April 2017.

[20] Nasehi M, Sehhatie F, Zamanzadeh V, Delazar A, Javadzadeh Y, Chongheralu BM. 2013.Comparison of the Effectiveness of Combination of Fennel Extract/Vitamin E with Ibuprofen on the Pain Intensity in Students with Primary Dysmenorrhea. *Iran J Nurs Midwifery Res*. 2013;18:355–9. Diakses Pada Tanggal 1 April 2017.

[21] Price, A. Sylvia., & Wilson, M. L (2005). *Patofisiologi : Konsep Klinis Proses-Proses Poenyakit (Pathophysiology: clinical concept and disease process)*. Edisi 6, Volume II. Jakarta : EGC

[22] Turk DC, & Melzack R. (2011). *Handbook of Pain Assessment, Third Edition*. New York: Guilford Publications.

[23] Atallahi M, Akbari SAA, Mojab F, Majd HA (2014). Effects of Wheat Germ Extract on the Severity and Systemic Symptoms of Primary Dysmenorrhea: A Randomized Controlled Clinical Trial. *Iran Red Crescent Med J*. August; 16(8): e19503.

[24] Latthe P, Mignini L, Gray R, Hills R, Khan K. (2006). Factors Predisposing Women to Chronic Pelvic Pain: Systematic Review. *BMJ*. 332(7544):749–55.

[25] In Ae Jang, Ming YK, Sa Ra L, Kyung AJ, Hye WC .(2013). Factors related to dysmenorrhea among Vietnamese and Vietnamese marriage immigrant women in South Korea. *Obstet Gynecol Sci*. 56(4):242-248.

[26] Muluneh AA, Nigussie TS, Gebreslasie KZ, Anteneh KT, & Yohannes Z. (2018). Prevalence and Associated Factors of Dysmenorrhea among Secondary and Preparatory School Students in Debremarkos Town, North-West Ethiopia. *BMC Women's Health*. 18:57. https://doi.org/10.1186/s12905-018-0552-x

[27] Lacovides S, Avidon I, Bentley A, & Baker FC. (2009). Diclofenac Potassium Restores Objective and Subjective Measures of Sleep Quality in Women with Primary Dysmenorrhea. *SLEEP*, Vol. 32, No. 8.

[28] Perry, Hockenberry, Lowdermik & Wilson. (2010). *Maternal Child Nursing Care*. Canada: Mosby Elseiver.

[29] Kusmiran, E. (2012). *Kesehatan Reproduksi Remaja dan Wanita (reproduction health and women)*. Jakarta: Salemba Medika.

[30] Rahnama P, Montazeri A, Huseini HF, Kianbakht SK, & Naseri M. (2012). Effect of *Zingiber Officinale* R. Rhizomes (Ginger) on Pain Relief in Primary Dysmenorrhea: A Placebo Randomized Trial. *BMC Complementary and Alternative Medicine*.12*:92*

[31] Abu Helwa HA, Mitaeb AA, Al-Hamshri S, & Sweileh WM. (2018). Prevalence of Dysmenorrhea and Predictors of its Pain Intensity among Palestinian Female University Students. *BMC Women's Health*. 18:18

[32] Loto OM, Adewumi TA, Adewuya AO. (2008). Prevalence and Correlates of Dysmenorrhea among Nigerian College Women. *Aust N Z J Obstet Gynaecol*. 48:442–4.

[33] Chiou MH & Wang HH. (2008). Predictors of Dysmenorrhea and Self-Care Behavior among Vocational Nursing School Female Students. *J Nurs Res*. 16:17–25

[34] Unsal A, Ayranci U, Tozun M, *et al*.: Prevalence of Dysmenorrhea and Its Effect on Quality of Life among a Group of Female University Students. *Ups J Med Sci*. 2010; 115(2): 138–45.

[35] Prasetyo. (2010). *Konsep dan Keperawatn Nyeri (concept and pain nursing)*. Graha Ilmu. Yogyakarta.

[36] Ishak R, Monayo ER, Mursyidah A. (2015). Pengaruh Kompres Air Hangat Terhadap Penurunan Dismenorea Primer pada Siswi di SMA Negeri 1Telaga Kabupaten Gorontalo (the influence of warm compress to decreasing primary Dismenorea among student in SMA Negeri 1Telaga Kabupaten Gorontalo . *Jurnal Keperawatan*.

[37] Rahmadhayanti E, Afriyani R, & Wulandari A. (2017). Pengaruh Kompres Hangat terhadap Penurunan Derajat Nyeri Haid pada Remaja Putri di SMA Karya Ibu Palembang. *Jurnal Kesehatan*. Vol. 8, No. 3; 369-374.

[38] Fransisca S, Eka Sudiwati NLP, & Novita Dewi (2018). Pengaruh Kompres Dingin terhadap Penurunan Intensitas Nyeri pada Wanita yang Mengalami Dismenore di Rayon Ikabe Tlogomas. *Nursing News*. Vol. 3, No. 1; 153-163.

[39] Rahmawati ES. (2013). Pengaruh Kompres Dingin Terhadap Pengurangan Nyeri Luka
Perineum Pada Ibu Nifas di BPS Siti Alfirdaus Kingking Kabupaten Tuban (The influence of cold compress to reduce the pain on perineal wound among postpartum mother in BPS Siti Alfirdaus Kingking Kabupaten Tuban) . *Jurnal Sain Med*. Vol. 5, No. 2; 43-46.

[40] Anggraeny, Shahnaz. 2015. *Pengaruh Akupunktur dan Kompres Hangat Terhadap Tingkat Nyeri Disminorea Pada Mahasiswi S1 Keperawatan FIK UNIPDU Jombang (The influence of* acupuncture *and warm compress to intensity of meanstrual pain among nursing science students in FIK Unipdu Jombang)*. Skripsi. Fakultas Ilmu Kesehatan UNIPDU Jombang.

[41] Rima MN & Defie SS. (2016). Pengaruh Pemberian Kompres Hangat Terhadap Penurunan Nyeri Dismenore pada Siswi Kelas XI SMK Muhammadiyah Watukelir Suharjo (the influence of warm compress to reducing dismenorhea pain among student grade XI SMK Muhammadiyah Watukelir Suharjo) . *Jurnal Kebidanan dan Kesehatan*. Vol. 1, No. 2; 100-144.

[42] Dahlan A & Syahminan TV. (2017). Pengaruh Terapi Kompres Hangat terhadap Nyeri Haid (*Dismenorea*) pada Siswi SMK Perbankan Simpang Haru Padang (the influence of warm compress to menstrual pain(dismenorhea) among SMK students Perbankan Simpang Haru Padang) . *Journal Endurance*. Vol. 2, No. 1; 37-44.

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---

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