




The Comparison in The Effectiveness of Warm and Ginger Compresses to The Menstruation Pain Toward The Students of Smk 2 Al-Hikmah 1 Sirampog

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
Warm compress,

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Abstract

The problem that was studied in this research came from the observation result that showed the impact of dysmenorrhea which was influence of the learning motivation and concentration as well as disturbed students activity. The purpose of the research was to analyze the difference in the effectiveness of warm and ginger compresses to the menstruation pain. The type of this study was quantitative with a quasi experiment research design. The population of this study was 300 students in SMK 2 Al-hikmah 1 Sirampog. The sample was 16 respondents. The instruments that were used in this study were questionnaire and faces pain scale revised. Data analysis was carried out by univariate, bivariate wilcoxon, and multivariate manova. The research result showed that there was difference intensity between pain before and after warm compresses p-value is $0,000 < \alpha (0,05)$, there was difference intensity between pain before and after ginger compresses p-value is $0,000 < \alpha (0,05)$, there was difference effectiveness p-value is $0,000 < \alpha (0,05)$, with an average pain of ginger compresses were 0,625 and warm compresses were 1,375. It meant that ginger compresses were more effective in reducing menstruation pain. In order to be input for the development of science especially for dysmenorrhea management, the school can be active in managing students with dysmenorrhea, the students can apply warm and ginger compresses so that they can feel comfortable when menstruating.

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INTRODUCTION

Reproduction health is defined as healthy condition which relates to system, function, and process of reproduction (Suharyo, 2009). A women has reproduction system that is very susceptible to disorder which can cause the problem of her reproduction health mainly to the adolescent. Reproduction health in adolescent circle is important to get attention (Kusmiran, 2014). At adolescent period, many happen the change of biology, psychology or social. But, commonly, the process of physical maturation happened faster that process of phychological maturation (psychosocial) (Indarjo, 2009). The period of adolescent puberty is indicated by the beginning of menstruation siclus. All sorts of variety disorders can come in several days toward menstruation, one of them is physical disorder like painful or cramp stomach which is called by dysmenorrhea (Maimunah, 2018).

The number of dysmenorrhea case in various of countries are high enough, estimated 50 % from all women in the world get dysmenorrhea in a menstruation siclus (Bano, 2013). Dysmenorrhea which often happens is primary dysmenorrhea, possibility more than 50 % the women get it and 10-15% among of them get terrific pain till disturbing activity and daily routine (Hapsari, 2015). Unsal *et al* (2010), stated that dysmenorrhea is the problem of social health that influence quality of life and reported that it caused 28,0 % to 89,5% the woman did not come to work. A student who got dysmenorrhea can not concentrate to study and the motivation of studying will decrease because of the pain which is felt at the process of learning teaching. Therefore dysmenorrhea must be taken in hand so it doesnot happen worse impact (Saguni, 2013).

Feeling pain at menstruation moment can be relieved by giving compress which is given on under stomach area namely warm compress and ginger compress. Warm compress is one of pharmacology methods whis is regarded very effective in relieving pain (Maimunah, 2018).

Besides warm compress, the other non pharmacology methods is ginger compress. It is trusted can relieve the pain too. Giving ginger compress can be one of therapies relieving pain because in the ginger contains natural substance namely oleoresin which consists of zingeron, gingerol, and shogaol (Mardiansyah, 2010). The natural substance of ginger has high anti inflammation and antioxide so that able put in order bio chemistry process in body to relieve inflammation (Stoilova *et al*, 2007). Besides that, this substance has hot taste, warm and aromatic if it is combined with warm water. It makes widening blood vessel so that increase blood circulation to get the effect of pain, and muscle relaxation which then effect of relieving pain sensation (Lentera tim, 2002).

Based on interview result in September 2017 which is led to 15 girl students SMK 2 Al-Hikmah 1 Sirampog who have dysmenorrhea history, 10 of them do not treat their dysmenorrhea, while 5 of them do limited treat like bedrest and taking medicine to relieve the pain which revolve in markets without consulting to doctor. The School Health Effort as an organization which observe students health in school, said that there had not been special action which is done to relieve the menstruation pain.

Based on phenomenon above, it becomes the basic of the researcher's interest to carry out the research the comparison in the effectiveness of warm compress and ginger compress to the menstruation pain toward the students SMK 2 Al-Hikmah 1 Sirampog.

METHOD

This research is the kind of quantitative research. Design of a quasi experimental research with design two group pre post test. Population in this research are all of female students of SMK 2 Al-Hikmah 1 Sirampog there are 300 people. The sample is chosen based on inclusive and exclusive criteria with technique taking purposive sampling. The sample which is acquired amount of 16 respondents for the intervention of warm

compress and ginger compress. The research instruments which are used are questioner sheet and faces pain scale revised. The research is carried out in SMK 2 Al-Hikmah 1 Sirampog in period January to April 2019. Before doing the research, the researcher submitted advisability test to ethics committee, and after getting research permission, the researchers cooperate with guidance and counseling teacher at the research process.

Variable in this research consists of free variable, they are warm compress and ginger compress. Bound variable is menstruation pain or dysmenorrhea . The data analysis are carried out by using technique of univariate analysis (frequency distribution), bivariate (wilcoxon), and multivariate (manova) with SPSS 16.

RESULTS AND DISCUSSION

Table 1. Dysmenorrhea scale pre warm compress

Score	compress 1		compress 2	
	n	(%)	n	(%)
0	0	0	0	0
1	0	0	0	0
2	3	18.75	2	12.5
3	11	68.75	13	81.25
4	2	12.5	1	6.25
5	0	0	0	0
Total	16	100	16	100

Based on table 1.1 can be know from 16 respondents have level of the pain with scale 3 before the first warm compress amount of 11 people (68,75%), and before the second warm compress with scale 3 amount of 13 people (81,25%)

Menstruation is indicator of sexual maturity on female adolescent (Gustina, 2015). The pain which is felt by a female while getting menstruation called dysmenorrhea (Prawirohardjo, 2010). Commonly the majority of females feel uncomfortable either pre-menstruation, will be menstruation, or as menstruation. This uncomfortable ness is caused by contraction of uterus muscle to stream menstruation blood (Charu, 2012). A

level of high prostaglandin which goes into endometrium causing myometrium contract strongly, this contraction can also narrow blood vessel which can cause iskemia, bleeding and pain as well endometrium disintegration (Morgan & Hamilton, 2009). The pain is mainly felt under stomache area spread into back or surface of thigh inside (Maimunah, 2018).

The result of this research shows that before being given warm compress, amount of respondents have pain level 3 (more pain). In accordance with berkley’s research (2013), that amount of 50% of adolescents got primary dysmenorrhea with 10 – 20 % them getting enough serious symptom.

Table 2. Dysmenorrhea scale post warm compress.

Score	compress 1		compress 2	
	n	(%)	n	(%)
0	2	12.5	2	12.5
1	5	31.25	8	50
2	9	56.25	5	31.25
3	0	0	1	6.25
4	0	0	0	0
5	0	0	0	0
Total	16	100	16	100

Based on table 1.2 can be known that 16 respondents have pain level with scale 2 after the first warm compress, amount of 9 people (56,25%), while after second warm compress white scale 1 amount of 8 people (50%).

A warm compress is a method in use of local warm temperature which can cause physiological effect. Warm compress can be used on the pain treatment and relaxing strained muscles (Rahmadhayanti, 2017). Warm compress can be done by applying rubber bag which is filled warm water or a towel which have been soaked in the warm to the pain body. The physiological effect of warm compress is softening fibrosa cell. make the. muscle of body more relax, relieve the pain, and smoothing blood stream (Nida. 2016).

The result of this research shows that there is decreasing of pain level after being

given warm compress with scale 2 (a little more pain). In accordance with Oktaviana's research (2016), "Relieving dysmenorrhea with warm compress", by using t paired test gotten p-value 0,00, $p < 0,05$, so it can be concluded that there is an effect of warm compress to relieve pain level dysmenorrhea.

Table 3. Dysmenorrhea pre ginger compress

Score	compress 1		compress 2	
	n	(%)	n	(%)
0	0	0	0	0
1	0	0	0	0
2	1	6.25	3	18.75
3	13	81.25	12	75
4	2	12.5	1	6.25
5	0	0	0	0
Total	16	100	16	100

Based on the table 1.3 can be known that from 16 respondents have the pain level with scale 3 before the first ginger compress amount 13 people (81,25%), and before the second ginger compress with same scale amount of 12 people (75%).

Dysmenorrhea causes disturbance of daily activity and must be absent from school. Dysmenorrhea doesnot only cause disturbance of activity but also give impact of physical, psychological, social and economy toward women in all the world (Rahayuningrum, 2016).

The result of this research is the majority of respondents pain level on scale 3 (painer). Cakir, et al (2007), in his research found that dysmenorrhea is a disturbance of menstruation r=with the most prevalence (89,5%) followed by irregular menstruation (31,2%), as well as the length of menstruation duration (5,3%).

Table 4. Dysmenorrhea scale post ginger compress

Score	compress 1		compress 2	
	n	(%)	n	(%)
0	5	31.25	11	68.75
1	8	50	4	25
2	3	18.75	1	6.25
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
Total	16	100	16	100

Based on table 1.4 can be known that from 16 respondents have pain level with scale 1 after the ginger compress amount of 8 people (50%), while after the second ginger compress scale 1 amount of 11 people (68,75%).

Besides warm compress, another method of non pharmacology is ginger compress. Ginger contains a phenol which has proven having an effect of anti inflammation and known effective to expelling muscle strain so it can improve system of musculoskeletal reducing (Sriwiyati, 2018).

The result of this research shows that there is decreasing of the pain level after being given ginger compress on scale 0 (no pain). The research which is carried out by Samsudin (2016) about the effect of giving compress used scraped red ginger (*zingiber officinale roscoe var rubrum*) to decrease of the pain to sufferer gout arthritis in Tateli Dua village, Mandolang subdistrict, Minahasa regency trough wilcoxon test gotten p-value 0,000 , where p value $< 0,05$, meant that there was a significant effect of giving compress using scraped red ginger (*zingiber officinale rscoe var rubrum*) to decrease of pain scale to gout arthritis sufferer.

Table 5. Dysmenorrhea scale before and after warm compress and ginger compress

Compress	Pre N	Average pain scale	Post N	Average pain scale	<i>p value</i>
Warm	16	2,94	16	1,50	0,000
Ginger	16	3,06	16	0,88	0,000
Warm	16	2,94	16	1,31	0,000
Ginger	16	2,88	16	0,38	0,000

Based on table 1.5 with wilcoxon statistic test is found p -value $< 0,05$ to warm compress group and group ginger compress group with value asymp. sig. (2-tailed) each of them 0,000. It shew that all of experiment groups got relieving the pain after treatment.

Knowing the effective dysmenorrhea solution is something important for a female because menstruations is experienced by the female every month (Okoro et al, 2013). All sorts of efforts in the health field which can be done to help overcoming dysmenorrhea problem to adolescent are through management of pharmacology therapy or non pharmacology therapy. Pharmacology therapy for adolescent who get dysmenorrhea is by using medicine of anti inflammation non steroid (OAINS). The common side effects happens to category OAINS are queasy, dyspepsia, ulserasi gastrointestinal or hemorrhage, increasing liver enzyme, diarrhea, constipation, epistaksis, headache, dizzy, and hypertension (Tamsuri, 2007).

On this research uses solution of non pharmacology therapy. They are warm compress and ginger compress. The pain management of non pharmacology is safer used because it doesn't cause side effect (Muttaqin, 2011).

The result of this research show to all groups post treatment get relieving pain. As said by Kozier & Erb's (2010), that warm compress with temperature 50°C cause happening vasodilatation which can open blood circulation, make blood circulation smooth relaxation of muscle and make muscle contraction decrease so that the pain relieve.

Warm compress in one of non pharmacology methods which is regarded the most effective in relieving pain or muscle spasme. Hot energy can be circulated through conduction, convection and conversion. The pain which is caused by bruised, muscle spasme and arthritis responded well to increasing of temperature because it can widen blood vessel and improve local blood circulation (Price and Wilson, 2015).

The purpose of giving warm compress according to Nida (2016), is warm compress giving warmth to respondent by using liquid or a tool which create warmth on part of body need it, relieving pain intensity with benefit of giving warm compress biologically which cause dilatation of blood vessel making improvement of blood circulation.

Novadela's research (2019) about the comparison of mineral water and warm compress to dysmenorrhea with *t-test*, required average result of pain scale after being given mineral water therapy 3,00, while average of pain scale after being given warm compress 2,625. So, that it can be concluded that warm compress more efective to relieve menstruation pain.

Ginger compress is also regarded efective to relieve pain. There are some kinds of ginger. They are white ginger or rhinoceros ginger, small white ginger amd knob ginger or red ginger. In this research uses red ginger. Red ginger has effect of anti inflamed, so it can be used to overcome inflammation and relieve the pain. The effect of anti inflammation is caused by active component of red ginger which consists of gingerol, gingerdione, and zingeron that has function to hamper leukotrein and prostaglandin which is inflamed mediator (Herliana, 2013).

Black *et al* (2010), with his research result stated that ginger has same effectiveness with mefenamic acid and ibu proven in relieving the pain of primary dysmenorrhea. It can become alternative of safe option in reduction, deceleration, and prevention of pain while menstruating so that can minimize use of

OAINS group which can cause side effect that harming for body (Rahnama *et al*, 2012).

Sri Ningsih's research (2017), about the use of ginger therapy for queasy and vomit patient after chemotherapy to patient of serviks cancer gotten a result that ginger aromatherapy can relieve queasy and vomit to the patient post chemotherapy proven by *p-value* 0,005 for queasy, and *p-value* 0,013 for vomit ($p < 0,05$).

Table 6. Different test of warm compress and ginger compress effect to dysmenorrhea

Compress	Mean	
	Pre	Post
Warm	2.938	1.375
Ginger	2.969	0.625

From table 1.6 with statistic test manova known average of pain level on ginger compress (0,625), and warm compress (1,375). On test of between subject effects, a significant number that is gotten amount of $0,000 < 0,05$, it means there are intensity differences of relieving pain between warm compress and ginger compress. In this research, average pain level of ginger compress is lower than warm compress, so that can be concluded ginger compress is more effective to relieving of menstruation pain (dysmenorrhea).

The treatment of herb ingredient can be done to relieve the pain. Therapy of herb ingredient is done by using traditional medicine which come from planting ingredients. Some planting ingredients that are trusted can relive the pain are sweet wood, soybean, clove, turmeric, ginger, china herb (Anurogo, 2011). The planting herb that is used I this research is red ginger.

Red ginger has many superiorities compared with kind of other gingers mainly if it is reviewed from the aspect of chemical content in its rhizome. In the rhizome of red ginger contains high gingerol, oleoresin, and volatile oil, so that more used as medicine ingredient (Lentera tim, 2002). The volatile oil contains bisabolena, sineol, phellan-drena, sitral, borneol, sitronellol, geranial, linalool,

limonene, zingiberol, zingiberena, and kamfena (Mardiansyah, 2010). A report of the research result stated that component of carrying hot taste of ginger are gingerol, shogaol, and zingeron having activity of anti inflamed (Herliana, 2013).

Some studies stated that warm compress has beneficial effect to prevention of cancer, queasy, and vomit to chemotherapy patient, and queasy vomit post operation. Ginger with anti inflamed function hampers producing of prostaglandin. Ginger is a safe therapy to relieve to the female having primary dysmenorrhea at the first menstruation till the third menstruation day (Rahnama *et al*, 2012).

Lakhan's research (2015), who researched about extract of zingiberaceae for the pain, shew that zingiberaceae extract is an agent of analgesic effective clinically and available data shew that safety profile is better than medicine of inflamed non steroid (OAINS).

The research is similar by Khayat (2014), that ginger is effective in relieving seriousness of mood and physical symptom and behavior of PMS (Pre menstruation Syndrom). We suggested ginger as therapy for PMS.

Another research by Tohma (2017), shew that ginger extract has effective anti oxide and can reduce or postpone development of disease and reduce stress.

Giving ginger compress is more effective than warm compress because red ginger contains many high volatile component (volatile oil) and non volatile (oleoresin) and it can be used as medicine of catching a cold, digestion, disorder, as analgesic, antipyretic, anti inflammation, reducing amount of cholesterol, preventing depression and impotence. The content of gingerol, shogaol, paradol, zingeron, and some gingerdione can hamper siklooksigenase and lipoksigenase, so that hamper biosynthetic prostaglandin and leukotrien (Black *et al*, 2010). Reducing of forming this prostaglandin and leukotrien will relieve the pain. At an experiment which is carried out to a mouse in testing the effect of anti inflammation of red ginger shew the result

that red ginger rhizome extract has anti inflammation which is same with OAINS (Ozgoli, 2009).

CONCLUSION AND SUGGESTION

Based on the result of analysis and discussion, it can be concluded that there is intensity difference of menstruation pain before and after warm compress treatment to the female students of SMK 2 Al-Hikmah 1 Sirampog with the result p -value amount $0,000 < \alpha (0,05)$.

There is intensity difference of menstruation pain before and after ginger compress to the female students of SMK 2 Al-Hikmah 1 Sirampog with the result p -value amount $0,000 < \alpha (0,05)$.

There is the difference in the effectiveness of warm and ginger compresses to the menstruation pain toward the students of SMK 2 Al-Hikmah 1 Sirampog with the result p -value amount $0,000 < \alpha (0,05)$. Average the pain level to ginger compress (0,625) and warm compress (1,375), so it can be concluded that ginger compress is more effective to relieve menstruation pain.

Suggestion : In order to the school play role actively in overcoming the students problem who get dysmenorrhea, in order to the students can always apply warm compress and ginger compress while getting menstruation as therapy of non pharmacology in relieving the pain, so it can reducing the use of medicines and keep comfortable when menstruating, in order to be input for the development of health science, especially in dysmenorrhea management, in order to be information source for academic staffs and students in the frame work of developing non pharmacology therapy for management of dysmenorrhea.

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