MJMR

PATCH CAPSICUM OLEORESIN FOR REDUCING DYSMENORRHEA

Erika Agung Mulyaningsih*, Pepin Nahariani, Rodiyah Rodiyah

Pemkab Jombang of Institute Health Science, Indonesia

**Corresponding Authors Email: rieka22@gmail.com*

ABSTRACT

The incidence of dysmenorrhea was 90% among teens and 50% among women adding to more than 59.2% decline in productivity among Indonesians. Most of the interventions used the drug Non-steroidal Anti-Inflammatory Drugs (NSAIDs), whereas these drugs were reported to be increasing the risk of complications. The purpose of this study was to determine the effectiveness of a Capsicum oleoresin patch to decrease low back pain of dysmenorrhea. The researchers used one group pre-post design. The population was the students of Diploma Midwifery Program who had dysmenorrhea. The intervention of Capsicum oleoresin patch was evaluated in the lower back during 6-8 hours on the first 3 days of menstruation period. The results were significant, reflecting the effectiveness of pain dysmenorrhea reduction before and after using patches which was evaluated by the pain scale measurement. The data analysis was carried out in a statistical test with p=0.000 with significant value α=0.05. Therefore, it should be recommended that intervention of patch of Capsicum oleoresin in dysmenorrhea is a natural and safe treatment for patient.

Keywords: Dysmenorrhea, Low back pain, Effectiveness, Capsicum oleoresin patch

INTRODUCTION

Menstruation is a vaginal bleeding that occurs periodically due to release of the endometrial lining of the uterus. It causes many problems among women, related to the cycle, pain during menstruation. Dysmenorrheais is one of the menstrual disorders most often found in reproductive age. Dysmenorrhea is pain that occurs during menstruation, both before and during menstruation, pain occurs at the low back or lower abdomen and spread to the inner abdomen. Based on researches at the 178 studies with 459975 participants, collected from 148 articles founded in 106 studies with 124259 participants experienced dysmenorrhea, while 54 studies (35973 participants) experienced dispereunia, the remaining 18 or 301756 study participants without periodic pain. From these studies it is known that the incidence of dysmenorrhea is as much as 16.8% to 81% (Latthe *et al*., 2006). Another study said 16%-91% of women of reproductive age experienced dysmenorhea, although only a few cases of 2%-29% develop severe dysmenorrhea (Ju, Jones & Mishra, 2013). In addition, 90% of adolescents experienced dysmenorrhea and about 50% of women of reproductive age experienced dysmenorrhea Baron & Jean (2007).

The kind of dysmenorrhea is divided into primary and secondary and the categories include mild, moderate and severe, respectively. The pain experienced by teenagers in general is pain due to primary dysmenorrhea. However, the common dysmenorrhea is a normal dysmenorrhea (not accompanied by gynecological abnormalities). This dysmenorrhea occurs before menstruation until about 2 days of menstruation, this is due to the pressure on the cervical canal (Dysmenorrhea: Painful Periods, 2015).

The treatment of dysmenorrhea includes phamacotherapy, non-pharmacologic and surgical methods. For primary dysmenorrhea which has level of mild to moderate pain, it can be treated by pharmacotherapy, non-pharmacological or a combination of both. Pharmacologic therapies include NSAIDs (Non-Steroidal Anti-Inflammatory Drugs) group of or the hormonal contraceptive pill. For the non-pharmacological therapies, it may include warm compresses, diet, vitamin and herbal therapy along withsports. Warm compresses comprise of a bottle filled with warm water and pillows as well. Patch heaters are placed on the lower abdomen or low back in a warm compress and the recommended temperature should be around 40°C (Akin *et al*., 2001).

One non-pharmacologic therapy includes warm compresses which can be applied at the center of low back pain. The study, reported in the Cochrane Collaboration Convey that heat therapy can be used in mild to moderate pain in cases of lower back pain and also found that heat therapy was as effective as the use of Ibuprofen on dysmenorrhea case. Basically, the

working of a patch containing Capsicum oleoresin is similar of a warm compress. However, to date there has been no empirical studies that proved the influence of Capsicum oleoresin in reducing dysmenorrhea. There are various kinds of patches among which one is a patch containing Capsicum oleoresin. Reactions of Capsicum oleoresin gives relief from pain (pain relief). The endorphin filled with blood flow after the nerve cells of the central nervous system receptors triggers endorphin-producing ordered to remove pain resulted in relief (Mulyadi, 2010).

The American Academy of Neurology stated that Capsicum oleresin can reduce pain (AAN Evidence-Based Guideline Summary for Clinicians Treatment of Post Therapeutic neuralgia, (2011). A systematic review of studies on herbal therapy in non-specific low back pain showed Capsicum oleores administration in the form of a cream or plaster can reduce mild to moderate pain (Gagnier *et al*., 2006). From the various studies above, the researcher proved the effect of Capsicum oleoresin in the form of a patch in the lower levels of pain among women with Dysmenorrhea.

Problem Statement

Effect of using patch Capsicum oleoresin for pain reduction in dysmenorrhea

Purpose of Study

a. Identify the number of female students who experienced dysmenorhoe
b. Identify the level of pain of female students who have dysmenorrhea
c. Giving Capsicum oleoresin in patch form to female students as management of dysmenorrhea
d. Analyze the effect of Capsicum oleoresin on dysmenorrhea

Benefits

- Lowering the level of dysmenorrhea pain
- Knowing the effectiveness of Capsicum oleoresin in reducing the level of pain in dysmenorrhea

Novelty of Research

This research has never been done before. The decrease of pain among dysmenorrhea patients is more effective with the pharmacological therapy i.e. the use of drugs, while non-pharmacological therapy is very rarely used, because with non-pharmacological therapy such as warm compress, does not allow patients to be able to perform activities outside the home, for example, at the school.

METHODOLOGY

This research used one group pre post design, it measured level of pain before and after taking treatment. The treatment is given by attaching patch containing Capsicum oleresin in to decrease the lower back pain. The samples were all students of Diploma Midwifery Program at Pemkab Jombang of Institute Health Science.The total samples were 21 students by sampling technique. The dependent variable was the response of dysmenorrhea that defines sensory and emotional experience, quite unpleasant, arising from painful menstruation. The independent variable was the treatment using a patch containing Capsicum oleresin. Measuring instrument is the VAS (Visual Analogue Scale) with the following categories 1-3: mild pain, 4-6: moderate pain, 7-9: severe pain,10: most severe pain. The procedures in this research used patch that contains Capsicum oleoresin and is then attached in the area around the lumbar, taped a sheet of Oleoresin capsicum patch for 6-8 hours and once every 24 hours. The study was conducted for 3 months i.e. from November 2016 to January 2017. Researchers did coding, scoring and tabulating of the gauges that have been collected by respondents. The data was analyzed by Wilcoxon Sign Rank Test. This study implemented the principles ethic of benificience to the respondent that pain was reduced after the intervention by patch Capsicum oleoresin.

RESULTS

The respondents were the students of DIII Midwifery STIKES Jombang regency level 2nd and 3rd. The number of respondents were 21 students who experience lower back pain due to Dysmenorrhea. In the study 5 respondents dropped out, while 16 respondents collected research questionnaire. Overall (100%) the percentage of respondents who dropped out were those with a scale of mild pain, when they experienced lower back pain due to dysmenorrhea with a scale of mild pain, respondents were unable to accept the effects of the heat generated from the patch Capsicum oleoresin,

so the patch is released before the 4 hours karean use of heat/burning.

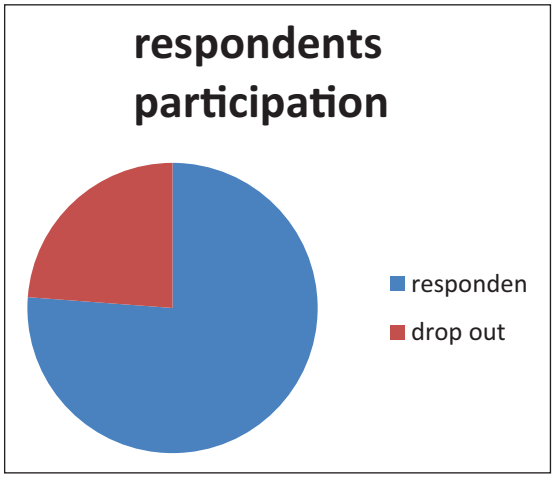

Figure 1: Respondents Participation

Table 1: Distribution frekuensi of respondents

No	Characteristics	Category	f	%
1	Menarch	Less than 9 year old	0	0
		9 to 17 year old	14	87,5
		More than 17 year old	2	12,5
2	Part body of dysmenorhea	Low abdominal	3	18,8
		Low back	4	25
		Inner thigh	0	0
		More of one location	9	56,3
3	Period of dysmenorhea	1-3 previous of period	14	87,5
		First to last period	2	12,5
4	Disability (activity daily) during dysmenorhea	Yes (usually)	3	18,8
		No	3	18,8
		Seldom	10	62,5
5	History of alergy during interventin patch capsicum oleoresin	Yes	0	0
		NO	16	100
6	Treatment during dysmenorhea	Farmakology therapy	9	56,3
		Non farmakology Therapy	3	18,8
		No Treatment	6	37,5

A total of 14 respondents (87.5%) had menarch at age 9 to less than 17 years, and the remaining first menstruated at the age of 17 years. Basically, both of these conditions were still within the normal ranges, only the most menarch occurred at age of 10-11 years. If viewed from the pain perspective, as much as 18.8% (3 respondents) experienced pain in the lower abdomen, 25% (4 respondents) experienced pain in the lower back, and the balance of 56% (9 respondents) experienced pain in more than one parts, including pain in the lower back and lower abdomen. Indeed, not all of these symptoms appeard in dysmenorhea, but people could have experienced one or more symptoms.

As appears from the results, that more than half of respondents experiencing pain in more than one section. The pain was mainly in the lower abdomen and lower back pain occurs because of the contraction of the uterus during menstruation. A total of 87.5% (14 respondents) had painful menstruation for 1-3 days and the rest had pain persistings more than the 3rd day of menstruation. It was understandable because on day 3 of menstruation, uterus sheds the endometrium. As a result, menstrual blood count is more, and then after the third day, the amount excreted menstrual blood was not too much, because the endometrium was not too thick during this period. Therefore uterine contractions were not as strong after 1-3 days of menstruation.

The total respondents, 18.8% (3 respondents) who need relief when subjected to Dysmenorrhea, 18.8% (3 respondents) did not require rest and 62.5% (10 respondents) sometimes take a break. In cases of severe pain, respondents needed time to rest, and this makes the respondent to take permission to listen to the lectures related to this topic. Some of them can take the classes of pharmacological therapy aid, used to relieve pain. All respondents involved in this study did not have a history of allergy to the use of Capsicum oleresin patch. Of the total respondents, there were 6 people who use pharmacological therapy to reduce pain, two people practiced non-pharmacological therapy that includes warm compresses and a lot of drinking, 2 respondents combined pharmacological therapy and non-pharmacological therapy, and 6 respondents reported that that they did not use any treatment for Dysmenorrhea.

There were two kinds therapy of dysmenorhea, i.e. non-pharmacological therapy and pharmacologic therapy. For pharmacological therapy, acetaminophen, mefenamic acid, oral contraceptives, hormone pro-gesterone administration, and the administration of multivitamins can be used. In the non-pharmacological therapies, including massage, exercise, a hot bath, warm compresses and giving the sensation of heat patch affixed to the abdomen or in the lower back. In

addition to these therapies, there are also a few cases of surgical therapy that can not be resolved by the above treatment. Of course, each treatment has advantages and disadvantages of their own. As for heat therapy itself, criteria must be met, namely: injection or invasive procedure, interaction with other regimens cannot be used during treatment. This may damage tissues. However, smoking is a potential diagnosis without no contradictions, overall, the therapy does not have any aesthetic issues, systemic effects. In addition, it is easy to carry, does not cause dermatitis on the skin Baron & Jean (2007).

The results of this study, were significant by comparing the initial pain scores and pain scores after treatment. The total of 3 respondents (18.8%) experienced a decrease in pain, became severe to mild in pain scale range. On the other hand, 4 respondents (25%), turned to moderate from severe scale. 7 respondents (43.8%) became mild and 2 respondents (12.5%) remained in the range of moderate scales respectively. However, the overall score of the pain went down significantly changing from 6 to score 4. Thus it can be said that all respondents experienced a decrease in pain after attachment of the patch, although fewer respondents did not experience any noticeable changes in the scale, but the pain was reduced overall.

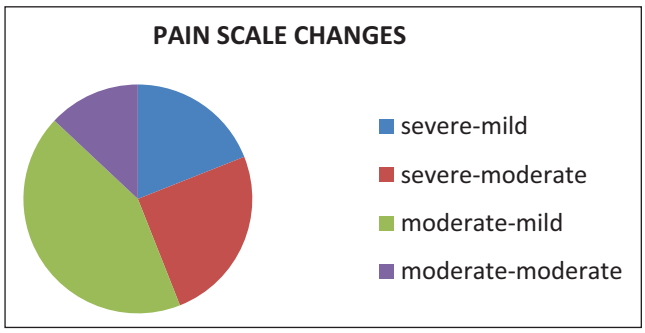

Figure 2: Pain Scale after Application of Patch Capsicum

DISCUSSION

From the results of the statistical tests, it can be seen a significant influence on the reduction of pain due to dysmenorhea after attachment of Capsicum oleresin patch for 4-8 hours. This patch has several advantages, namely portability, low cost, easy to obtain, to name a few. It did not require invasive procedures, did not disturb the aesthetic, at the same time, did not require the process of absorption as used in the pharmacological therapy. When compared with the provision of a hot compress with a bottle filled with water, it will probably have the same effect in reducing pain, but certainly it is complicated carrying bottles everywhere and compress on the back. Likewise, massage does give a sense of comfort and relieve pain, but it can not be done alone, but requires the help of others in doing the massage. In addition, it is easy to carry and use the patch also it gives a distinct advantage as the patch can be easily attached or removed. Moreover, the flexibility of use gives a distinct advantage to adjusts the level of pain experienced by, for example, on a pain scale of light, 1 sheet of Capsicum oleresin patch will be felt with burning sensation, but in cases of moderate to severe pain, this led to a sense of comfort. Therefore, its use can be adjusted, for example by attaching a portion of the patch.

Therefore, presumably Capsicum oleresin patch was the right choice to reduce pain. Recommendations issued by the American College of Physicians (2017) that in cases of acute low back pain, can be overcome by using heat therapy, massage or acupuncture. The strong recommendation on a descriptive study conducted by Midilli, Yasar & Baysal (2015) explained that 7 out of 10 students who had dysmenorrhea used alternative medicine therapies, and the most widely used heat therapy. It has been known by almost all the students, and only in very severe pain, they used pharmacological therapy.

CONCLUSION

There were 21 students at the 2th and 3th level who experienced dysmenorhea. There was a significant difference between the use of a patch containing capsicum oleoresin to decrease in pain as dymenorhea.

RECOMMENDATIONS

The Implications of Capsicum oleresin patch should not be used in pain with mild scale because it creates a feeling of excessive heat. The use of Capsicum oleresin patch was proven effective in reducing the pain due to dysmenorhea, easy and flexible use can be adjusted to the needs, for example, attaching a portion of the patch on the pain scale light.

REFERENCES

Akin, M.D., Weingand, K.W., Hengehold, D.A., Goodale, M.B., Hinkle, R.T. & Smith R.P. (2001). Continuous Low-Level Topical Heat in the Treatment of Dysmenorrheal *Obstetrics Gynecology*, 97(3), pp 343-9.

American Academy of Neorology (2011). AAN *Evidence-Based Guideline Summary for Clinicians: Treatment of Posttherpethic Neuralgia*. Retrieved from: http://tools.aan.com/professionals/practice/pdfs/pn_guideline_physicians.pdf.

Baron, M. F. & Jean, S. K. (2007). Moist Heat Therapy for Natural Pain Relief. University of Southern California School of Pharmacy, USA

Dysmenorrhea: Painful Periods (2015). *The American Congress of Obstetricians and Gynecologists*. Retrieved from:https://www.acog.org/Patients/FAQs/Dysmenorrhea-Painful-Periods.

Gagnier, J.J., Van, Tulder M.W., Berman, B.M. & Bombardier, C. (2006). Herbal Medicine for Low Back Pain. *Cochrane database Systematic Review,* 32(1), pp 82-92.

Ju, H., Jones, M. & Mishra, G. (2013). The Prevalence an Risk Factors of Dysmenorrea*. Epidemiologic Reviews*, 36, pp 104-13

Latthe, P., Latthe, M., Say, L., Gulmezoglu, M. & Khan, K.S. (2006). WHO Systematic Review of Prevalence of Chronic Pelvic pa in: A Neglected Reproductive Health Morbidity. *BMC Public Health,* 6, pages 7.

Midilli, T.S., Yasar, E. & Baysal E. (2015). Dysmenorhhea Characteristic of Female Students of Health School and Affecting factors and Their Knowledge and use of Complementary and Alternative Medicine Methods. *Holistic Nursing Practice,* 29(4), pp 194-20

Mulyadi, A. (2010). *Food review Indonesia* Vol V/ No 3 Maret. Retrieved from: http://elibrary.putra indonesiamalang.or.id/main/index.php?pg=detail_katalog&id=743