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Original Research Article

The Effect of Acupressure Techniques on Menstrual Pain (Dysmenorrhea) in Nursing Students of Poltekkes Kemenkes Aceh

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Abstract: Menstruation is normal bleeding as part of woman's monthly cycle, taking place when the egg released by the ovary is not fertilized. Menstrual problem which frequently occurs includes menstrual pain or dysmenorrhea. Menstrual pain can be reduced pharmacologically and non-pharmacologically, one of which is using acupressure techniques. This study aims to identify whether the application of acupressure techniques has an effect on menstrual pain (dysmenorrhea). This research is a quasi-experimental pretest-posttest with a control group design. The participants involved 32 nursing students at Poltekkes Kemenkes Aceh who experienced dysmenorrhea, consisting of 10 students from year 1, 14 students from year 2 and 8 students from year 3. The class was divided into two: class X1 as an experimental class comprising 16 students and class X2 as a control class consisting of 16 female students. A total sampling technique was used to select the samples. Data were collected using SOP and NRS questionnaire and analyzed by means of the Wilcoxon signed rank test. The results found the p-value of 0.002, smaller than alpha a (0.05). Thus, it can be concluded that there is an effect of acupressure on dysmenorrhoea in female students of Poltekkes Kemenkes Aceh.

Keywords: Acupressure, Menstrual Pain, Dysmenorrhea.

INTRODUCTION

Menstruation is the periodic shedding of the uterine lining from uterus, accompanied by the release (desquamation) of the endometrium (Lestari 2013 in Tyas, 2018). Menstruation usually begins between the ages of 10 to 16 years. Many women experience menstrual problems, including menstrual pain or dysmenorrhea (Murtiningsih, 2015). Menstrual pain is one of the gynaecological problems in women of all ages. Around 50% of women reported discomfort due to menstrual pain and about 15% reported that menstrual pain interfere their school and working activities (Hockenberry in Pangastuti, 2018). Moreover, menstrual pain can be reduced pharmacologically (drugs) and non-pharmacologically, such as relaxation techniques, one of which is known as acupressure techniques.

Acupressure is the development of massage therapy that goes hand in hand with the development of acupuncture since the acupressure massage technique is actually derived from the acupuncture field. The acupressure technique uses fingers instead of needles which is applied at the same points as those used in the acupuncture therapy (Hartono, 2012).

According to the World Health Organization, as stated in Ramli (2017), the rate of dysmenorrhea in the world is relatively high, in which the incidence of menstrual pain was 1,769,425 individuals with 10-15% experiencing severe dysmenorrhea. Furthermore, it is revealed that on average, more than 50% of women in every country experience menstrual pain. In addition, the incidence of menstrual pain in Indonesia is 107,673 individuals, consisting of 59,671 people experiencing primary menstrual pain and 9,496 people experiencing secondary menstrual pain.

Julianti (2014) conducted research on 80 respondents by applying acupressure at (SP 6) point during menstruation for three days. The results showed that respondents reduced pain. Another study conducted by Ariska (as cited in Ridwan, 2015) in the adolescent females at SMAN 1 Pekalongan found that out of 21 students who underwent acupressure techniques, 80.95% of them decreased pain levels.

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Based on the results of the preliminary survey obtained by the researchers, the number of nursing students at Poltekkes Kemenkes Aceh in year 1, year 2 and year 3 was 137, and only 32 students experienced dysmenorrhea consisting of 10 students from year 1, 14 students from year 2 and 14 students from year 3. Meanwhile, the rest did not experience any pain. This study aims to identify the effect of acupressure techniques on menstrual pain (dysmenorrhea) in nursing students at Poltekkes Kemenkes Aceh.

METODHOLOGY

This research is a quantitative study using a quasi-experimental approach which was conducted from September 20th to October 16th, 2021 with a total sampling of 32 female students who had dysmenorrhea. The measurement for acupressure technique used SOP (Standard Operating Procedure) and for dysmenorrhea employed the NRS *(*Numeric Rating Scale) questionnaire. This research has been approved by the Director and the Head of the Nursing Department of Poltekkes Kemenkes Aceh. The data were analyzed using (a) univariate analysis with frequency distribution, and (b) bivariate analysis using Wilcoxon signed rank statistic test with a p value < 0.05.

RESULTS

Univariate Analysis

a. Characteristics of Respondents

Table 1: Characteristics of Respondents

Characteristics of Respondents	Intervention Group		Control Group	
	Frequency	%	Frequency	%
Age				
17 years old	1	6.3	-	-
18 years old	6	37.5	8	50
19 years old	7	43.8	5	31.2
20 years old	2	12.5	3	18.8
Menarche				
11 years old	1	6.3	1	6.3
12 years old	11	68.8	10	62.5
13 years old	4	25.0	5	31.2

Among the 32 respondents, 16 of them are in the intervention group while another 16 students are in the control group. They are 19 years old (43.8%) and experienced menarche at the age of 12 years (68.8%).

b. Dysmenorrhea in the intervention group and control group

Table 2: Frequency Distribution of Dysmenorrhea in the Intervention and Control Groups

Dysmenorrhea	Intervention Group				Control Group			
	Pre test		Post test		Pre test		Post test	
	F	%	F	%	F	%	F	%
None (0)	-	-	6	37.5	-	-	1	6.3
Mild (1-3)	8	50	10	62.5	11	68.8	10	62.5
Moderate (4-6)	8	50	-	-	5	31.2	5	31.2
Severe (7-9)	-	-	-	-	-	-	-	-

Table 2 shows that in the pretest, eight respondents (50%) of the intervention group, experienced mild dysmenorrhea and other eight respondents (50%) suffered from moderate dysmenorrhea. In the posttest, it was found ten respondents (62.5%) with mild dysmenorrhea. Meanwhile, based on the pretest, 11 respondents (68.8%) of the control group were found to have mild dysmenorrhea and, in the post-test, ten respondents (62.5%) had mild dysmenorrhea.

Bivariate Analysis

The effect of the acupressure technique on menstrual pain (dysmenorrhea) in nursing female students of Poltekkes Kemenkes Aceh was tested using the Wilcoxon Signed Ranks, as presented in the following table:

Table 3: Statistical Test Results on the Intervention and Control Groups

Variable	Intervention Group		Control Group	
	z	P- value	z	P-value
Dysmenorrhea Pretest –Posttest	-3.071	0.002	-1.265	0.205

Based on Table 3, the statistical test on the intervention group revealed a p-value of 0.002 less than alpha a (0.05), meaning that there is a difference in the dysmenorrhea scale between the pre-test and post-test in the intervention group. As such, one may conclude that there is an effect of acupressure on dysmenorrhea in nursing female students of Poltekkes Kemenkes Aceh. On the other hand, the control group obtained a p-value of 0.206 greater than alpha a (0.05). Therefore, there is no difference in the dysmenorrhea scale between the pre-test and post-test in the control group.

DISCUSSION

The current study found that 16 nursing students of Poltekkes Kemenkes Aceh in the intervention group experienced dysmenorrhoea. The finding showed that the dysmenorrhoea scale in the pretest and posttest had changed. In the pretest, eight respondents (50%) had mild dysmenorrhoea, and similarly eight respondents (50%) experienced moderate dysmenorrhoea. Meanwhile, in the posttest, six respondents (37.5%) had no pain and ten respondents (62.5%) suffered from mild dysmenorrhoea after acupressure. These findings indicate a decrease in the scale from mild to no pain in six respondents and from moderate to mild pain in ten respondents. Data analysis using the Wilcoxon signed ranks in the intervention group reported that the average score has decreased on the dysmenorrhoea scale. It suggests that there is a decrease in the level of pain experienced by respondents after acupressure. The statistical test results a p-value of 0.002 < (0.05), which implies that there is a difference in the dysmenorrhoea scale between the pretest and posttest in the intervention group. Thus, there is an effect of acupressure on dysmenorrhea in nursing female students of Poltekkes Kemenkes Aceh.

Dysmenorrhea is menstrual pain that consists of complex symptoms, including lower abdominal cramps that radiate to the back or legs and are usually accompanied by gastrointestinal and neurological symptoms such as general weakness (Dewi, 2012). This pain can be constant, usually in the pelvis or lower back, and may radiate to the groin or lower leg. Dysmenorrhea can be treated with pharmacological and non-pharmacological therapy. Pharmacological therapy includes analgesic drug administration and hormonal therapy. While non-pharmacological therapy comprises warm compresses, exercise, acupressure, and others.

Acupressure is a Chinese medicine that has been recognized for thousands of years. It is applied by giving pressure or massage and stimulating certain points on the body. Basically, acupressure therapy is a development of acupuncture techniques, but the media used is a finger or a blunt object instead of a needle (Ali in Renityas, 2017). It aims to stimulate body's natural ability to heal by restoring the body's positive energy balance (Fengge in Julianti, 2014). Acupressure techniques can reduce pain sensations by increasing endorphins–hormones that are able to naturally relax the body, blocking pain receptors to the brain (Aprillia in Ridwan, 2015).

Mohamed *et al*., (2015) study revealed that acupressure at the SP6 point effectively reduces dysmenorrhea. Besides, Charandabi *et al*., (2011) who conducted a study in Iran pointed out that acupressure at the SP6 point has a significant effect on reducing the severity of menstrual symptoms. This point is located about four fingers above the internal malleolus, exactly at the end of the shinbone (Hartono, 2012). Those studies suggest that acupressure therapy can decrease the intensity of menstrual pain.

Moreover, by doing massage at the Hegu point, Kostania (2019) found that acupressure had an effect on reducing menstrual pain, with a p-value of 0.001 ($p<0.05$) or t-count> t-table (5,680>2 ,0040). In another pervious study, Yati (2019) employed a quasi-experimental research design with a one group pre-posttest approach aiming to investigate the effect of acupressure techniques on reducing pain levels in tenth-grade students of Senior High School 2 Sungai Penuh City, who experienced dysmenorrhea before and after the intervention. The study used a purposive sampling technique by choosing a sample among the population with predetermined inclusion and exclusion criteria, thereby involving a sample of 31 people. The study reported three important findings: less than half of female students (48%) obtained a score of 4 to 6 before receiving the acupressure therapy; less than half of female students (32%) gained a score of 1 to 3 and 4 to 6 after the acupressure therapy; and there is an effect of acupressure on menstrual pain before and after treatment with a significant value of 0.000, and the average difference (before and after) of 0.645.

Aprillia (2010) suggests that acupressure techniques can alleviate pain sensations by increasing endorphins, which are hormones that naturally relax the body, blocking pain receptors to the brain. Several acupressure points to reduce menstrual pain include the Hegu point which serves to provide energy intake to the reproductive organs and relieve common pain (Widyaningrum, 2013). Similarly, Hartono (2012) explains that acupressure therapy was empirically proven to help the production of endorphins in the brain which naturally relieve menstrual pain.

CONCLUSION

In general, acupressure techniques help reduce pain in dysmenorrhea by applying a massage at certain points of the body. It results in a sense of relaxation and increasing blood flow in the body, thereby relieving painful sensations that arise. Besides, it is necessary to measure the pain scale before and after acupressure to assess the intensity of the pain experienced by the respondents.

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