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**EFFECTIVENESS OF BACK ENDORPHIN MASSAGE AGAINST DECREASED
DYSMENORRHEA IN STUDENTS OF THE FACULTY OF NURSING,
UNIVERSITAS SUMATERA UTARA**

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ABSTRACT

Dysmenorrhea is pain that occurs during menstruation accompanied by severe pain and cramps in the lower abdomen and spreads to the back. The pain that occurs interferes with daily activities, forcing women to rest. Actions that can be taken for the management of dysmenorrhea include relaxation techniques, exercise, massage, distraction, and rest. Back endorphins massage is a gentle massage technique on the back area which is done for 30 minutes to reduce menstrual pain. The purpose of this study was to identify the effectiveness of back endorphin massage on reducing dysmenorrhea in students of the Universitas Sumatera Utara. The research design used was a quasi-experimental approach with a pretest-posttest control group design approach. Sampling using purposive sampling. Data was collected using a demographic data questionnaire and a numerical rating scale (NRS) pain scale sheet. The collected data were analyzed using a paired t-test statistic with $p < 0.05$. The results showed that the value of $p = 0.00$ [WU2] which means that there is an effect of back endorphins massage on the reduction of dysmenorrhea. Back endorphin massage has been shown to be effective in reducing menstrual pain. Health workers are advised to massage back endorphins as a non-pharmacological treatment for women who experience dysmenorrhea.

Keyword: Dysmenorrhea, Menstruation, Relaxation Therapy, Abdomen, Endorphins

INTRODUCTION

Dysmenorrhea or menstrual pain is a gynecological complaint caused by uterine muscle spasms and an increase in prostaglandin hormones, which causes more contractions of the uterine muscles resulting in decreased uterine blood flow accompanied by a decrease in uterine muscle oxygen which results in cramps and pain in the lower abdomen to the back. Complaints of dysmenorrhea or menstrual pain vary from mild to severe. The severity of dysmenorrhea is directly related to the duration and amount of menstrual blood (Prawirohardjo, 2011). Increased pain occurs at age 25 years and reduced after the age of 30 to 35 years or after the woman becomes pregnant and gives birth. Dysmenorrhea is divided into two, namely primary dysmenorrhea and secondary dysmenorrhea. Primary dysmenorrhea is menstrual pain in the absence of noticeable abnormalities in the genital apparatus, usually occurring from the sixth month to the second year after menarche While secondary dysmenorrhea is menstrual pain that has a clear cause or gynecological abnormalities such as endometriosis, pelvic inflammatory disease, cervical stenosis, ovarian or uterine neoplasms and uterine polyps (Reeder, 2011).

According to WHO (2012) 1,769,425 people (90%) of women who experience dysmenorrhea 10-15% have severe dysmenorrhea. The prevalence of women who experience dysmenorrhea

in indonesia is 10-15% experiencing severe dysmenorrhea which causes them to be unable to carry out any activities or activities. The incidence rate of dysmenorrhea was 64.25% consisting of 54.89% primary dysmenorrhea and 9.36% secondary dysmenorrhea. It is said that 90% of women have experienced menstrual pain or dysmenorrhea (Gumangsari, 2014). Dysmenorrhea can be above in several ways, namely pharmacologically and non-pharmacologically. Non pharmacological management it is safer to use because it does not cause side effects such as drugs.

Non-pharmacological management that can be done to reduce dysmenorrhea pain is warm compresses, distractions, relaxation, rest, dysmenorrhea gymnastics, exercise and masase (Kumalasari, 2017). Endorphin massage is one of the non-pharmacological ways that can be done to relieve menstrual pain. Endorphin massage is done by providing a light touch / massage that can increase relaxation by increasing blood flow to the affected area, stimulating sensory receptors in the skin and brain below, providing a sense of comfort, increasing local circulation, stimulating the release of endorphins, decreasing endogenous catecholamine stimulation of efferent fibers that cause block to excitatory pain. Research proves that this endorphin massage technique can increase the release of endorphins and oxytocin (Elvira & Tulkhair, 2018). Endorphins are natural hormones produced by the body so that endorphins can be the best painkillers. Septianingrum & Netty (2019) stated that giving endorphin massage for 30 minutes there was a significant difference between before and after endorphin massage.

METHODS

The research design used in this study is a quasi-experiment with a pretest- posttest control group design approach. The population in the study was 60 usu faculty of nursing students who experienced dysmenorrhea. The division of samples in both groups was determined using purposive sampling techniques Furthermore, the study subjects were divided into two groups consisting of 30 control group respondents and 30 intervention group respondents. The data has been collected and then processed with spss using a paired t-test. The purpose of this study was to determine the effectiveness of back endorphin massage against decreased dysmenorrhea in usu nursing faculty students.

RESULTS

From the results of the study, researchers discussed the effectiveness of back endorphin massage against decreasing dysmenorrhea by presenting data on the demographic characteristics of respondents, the intensity of dysmenorrhea pain before the intervention, the intensity of dysmenorrhea pain after the intervention and the effectiveness of back endorphin massage against decreasing dysmenorrheal.

Table 1 Demographic Data Characteristics

No	Characteristic Respondents	Intervension Group		Control Group	
		F	%	F	%
1	Age				
	18 Years	2	6.7	0	0
	19 Years	4	13.3	5	16.7
	20 Years	5	16.7	11	36.7
	21 Years	8	26.7	7	23.3
	22 Years	11	3.7	7	23.3

2	Menstrual cycle				
	25 day	2	6.7	2	6.7
	26 day	1	3.3	1	3.3
	28 day	22	73.3	20	66.7
	30 day	4	13.3	5	16.7
	35 day	1	3.3	2	6.7
3	Ethnic groups				
	Batak	16	53.3	14	46.7
	Javanese	14	46.7	16	53.3
4	Religion				
	Islam	23	76.7	23	76.7
	Protestan	7	23.3	7	23.3
	Christianity				

Based on table 1, it can be concluded that the majority of respondents who experienced dysmenorrhea in the intervention group were 22 years old as much as 11 people (36.7%) in the majority control group aged 20 years as many as 11 people (36.7%), all respondents in this study had a normal menstrual cycle (22-35 days) with the majority menstrual cycle in the 28-day intervention group as much as 22 people (73.3%), and in the 28-day majority control group as many as 20 people (66.7%) the majority of respondents were batak in the intervention group of 16 people (53.3%) in the javanese tribal majority control group as many as 16 people (53.3%), and the majority of respondents in the Muslim religious intervention group were 23 people (76.7%) in the muslim majority control group as many as 23 people (76.7%).

Table 2 Intensity of Dysmenorrhea Pain Before Back Endorphin Massage Intervention

Pain Intensity Dysmenorrhea	Intervention Group		Control Group	
	F	%	F	%
No pain	0	0	0	0
Mild Pain	0	0	6	20.0
Moderate Pain	16	53.6	21	70.0
Controlled severe pain	14	46.4	3	10.0
Total	30	100	30	100

Based on table 2 the intensity of menstrual pain in the intervention group before endorphin massage was performed, none of the respondents experienced mild pain, the respondents who experienced moderate pain as many as 16 people (53.6%) and severe controlled pain as many as 14 people (46.4%). Then in the control group before being given treatment, respondents who experienced mild pain were 6 people (20.0%), who experienced moderate pain as many as 21 people (70%) and who experienced severe controlled pain as many as 4 people (10%).

Table 3 Intensity of Dysmenorrhea Pain After Back Endorphin Massage Intervention

Pain Intensity Dysmenorrhea	Intervention Group		Control Group	
	F	%	F	%
No pain	0	0	0	0
Mild Pain	9	30.0	9	30.0
Moderate Pain	21	70.0	19	63.3
Controlled severe pain	0	0	2	6.7
Total	30	100	30	100

Based on table 3 the intensity of menstrual pain in the intervention group after back endorphin massage was obtained by respondents who experienced mild pain as many as 9 people (30.0%), respondents who experienced moderate pain as many as 21 people (70.0%) and none of the respondents who experienced severe pain were controlled. then in the control group after being given treatment respondents who experienced mild pain as many as 9 people (30.0%), who experienced moderate pain as many as 19 people (63.3%) and who experienced severe controlled pain as many as 2 people (6.7%).

Table 4 Differences in Menstrual Pain Intensity Before and After Back Endorphin Massage Intervention

Variabel	Pre-test		Post-test		<i>p-value</i>	Mean difference
	Mean	SD	Mean	SD		
Intervention group	6.2333	8.1720	4.3000	1.05536	0.000	1.93333
Control Intervention	4.7000	1.23596	4.667	1.25212	0.006	2.3333

Based on Table 1.4 of the statistical test results obtained the average value of menstrual pain intensity during pre-intervention endorphin massage back was 6.2333 with SD 8.172, while when carried out Post intervention endorphin massage back the average value of menstrual pain became 4.3000 with SD 1.05536. Statistically, the average value of the difference between pre-intervention and post-intervention endorphin massage is 1.93333 with a p value of 0.000, so it can be concluded that the value of $P < 0.05$. The values in the back endorphin massage intervention showed a significant difference between the average menstrual pain before and after the back endorphin massage intervention. Thus, it can be concluded that menstrual pain decreases after the intervention of endorphin massage of the back. Differences in the intensity of menstrual pain before and after treatment in the control group statistically the average value of the difference between pre and post was 2.3333 with a p value of 0.006. based on the average value, it can be concluded that there is an influence of the act of reading leaflets while resting on the decrease in dysmenorrhea.

DISCUSSION

a. Intensity of Dysmenorrhea Pain Before Back Endorphin Massage Intervention

Dysmenorrhea is pain during menstruation caused by increased production of prostaglandins that cause ischemic and stimulate myometrial contractions that cause pain that is felt in the lower abdomen and radiates to the back can be in the form of sharp, dull or painful pain.

(Reeder, 2011). The results showed that the age group of respondents who experienced dysmenorrhea was 18-22 years old. Andrews (2010) in Narsih (2017) states that 50% of women who have dysmenorrhea are between 15- 24 years old. According to the World Health Organization (WHO) in 2016, 1,769,425 people (90%) of women in the world experience severe dysmenorrhea. According to Herawati, 2017 The incidence of dysmenorrhea in the United States is 30% - 50% of women of reproductive age. About 10% - 15% of them are forced to lose employment, school, and family life opportunities. The intensity of pain felt by respondents before the back endorphin massage was different. The intensity of pain in the majority intervention group was moderate pain, which was 16 people (53.6%) and in the control group the majority of moderate pain was 21 people (70%). Respondents reported that the characteristics of the pain felt were cramps in the lower abdomen, back and interfered with daily activities that were usually done. The difference in the level of pain felt by respondents was due to differences in response and perception to pain.

b. Intensity of Dysmenorrhea Pain After Back Endorphin Massage Intervention

One of the actions that can be done to reduce pain during menstruation is the massage of endorphins. Back endorphin massage is a massage or light touch performed on the back area that aims to provide a relaxing effect, a feeling of comfort so as to reduce the perception of pain felt. The results of the study found that the intensity of menstrual pain after the back endorphin massage intervention in the intervention group obtained the majority experienced moderate pain, namely 21 people and in the control group obtained the majority of moderate pain as many as 19 people Based on the results of interviews with several respondents, respondents said they enjoyed the massage given and felt more relaxed and comfortable when the intervention was carried out. Stimulation of the skin causes the release of endorphins, endorphins are neurotransmitters that inhibit the delivery of painkicks so as to block the transmission of pain stimuli. The results of the research by Harahap, et al (2022) explained that before endorphin massage, respondents experienced as much intensity as mild pain as 2 people with moderate pain as many as 13 people with severe pain as much as 1 person After the intervention of endorphin massage respondents who experienced mild pain as many as 11 people moderate pain as many as 5 people and severe pain did not exist so that it could be interpreted that there was a decrease in the intensity of pain before and after endorphin massage. This research is also in line with research conducted by Rachmawati & Safriana (2020) explained that of the 15 respondents who experienced dysmenorrhea after being given endorphin massage for 30 minutes, all respondents experienced a decrease in menstrual pain. Effectiveness of Back Endorphin Massage Against Dysmenorrhea Reduction in USU Faculty of Nursing Students.

Based on the results of statistical tests obtained the average value of menstrual pain intensity during pre-intervention of back endorphin massage was 6.23 with SD 8.17 while when performed Post intervention endorphin back massage the average value of menstrual pain became 4.30 with SD 1.05 Statistically the average value of the difference between Pre intervention and Post intervention endorphin back massage was 1.93 studies in the intervention group showed the results of all respondents reported that after being done back endorphin massage during 30 minutes at the time of dysmenorrhea respondents experienced a decrease in the intensity of pain. The results of the statistical test of the value of $p = 0.000$ when viewed from the average of the mean values it is said that massage back endorphins are effective in lowering the scale of dysmenorrhea pain.

Based on research in the control group when viewed from the results of statistical tests, the average value of menstrual pain intensity during pre-intervention was 4.70 with SD 1.23 while when carried out post-intervention the average value of menstrual pain became 4.46

with SD 1.25. Statistically, the average value of the difference between Pre intervention and Post intervention was 2.33 so it can be concluded that the control group also experienced a decrease in the intensity of menstrual pain. This is because the control group was also given the intervention they rested while reading the leaflet. The statement is in line with the theory presented by Melzak and Wall this theory explains the transmission and perception of pain that pain is a subjective male experience influenced by culture, one's perception, attention, and other psychological variables that interferes with sustained behavior and motivates a person to stop the pain. This statement is also in line with the theory presented by Rakhma (2012) that pain management can be done with non-pharmacological therapies such as regulating positions, resting, environmental management, music distractions, cold water compresses and herbal plants. The pain felt by the control group varied from mild pain, moderate pain and controlled severe pain. Dysmenorrhea can cause respondents to be disturbed in carrying out their activities and reduce learning concentration so that treatment is needed to reduce the degree of dysmenorrhea pain so as not to interfere with respondents' activities.

CONCLUSIONS AND SUGGESTIONS

Based on the results of research on the effectiveness of back endorphin massage against dysmenorrhea reduction, there was a decrease in the intensity of menstrual pain before and after the intervention was carried out to respondents. It can be seen from the statistical test in the intervention group with the paired t-test obtained a value of $p = 0.000$ which means $p < 0.05$, it can be concluded that there is an influence of endorphin massage back on the decrease in dysmenorrhea. In the control group, a value of $p = 0.06$ was obtained, so it was concluded that there was an effect of giving rest interventions while reading leaflets on the decrease in dysmenorrhea. It is recommended for women who have dysmenorrhea to do back endorphin massage as a non-pharmacological therapy to reduce pain when experiencing dysmenorrhea.

REFERENCE

- [1] Andrews, G (2010). Buku Ajar Kesehatan Reproduksi Wanita. Edisi 2. Jakarta: EGC.
- [2] Elvira, M., & Tulkhair, A. (2018). Pengaruh Pijat Endorphine Terhadap Skala Nyeri Pada Siswi SMA Yang Mengalami Disminore. *Jurnal IPTEK Terapan*. 12(2), 155–166.
- [3] Gumangsari, Ni Made Gita. (2014). Pengaruh Massage Counterpressure Terhadap Penurunan Tingkat Nyeri Haid Pada Remaja Putri di SMA N 2 Ungaran Kabupaten Semarang, Terdapat dalam <http://perpusnwu.web.id/karyailmiah/documen ts/3637>
- [4] Harahap, L. K. S., Asriwati, A., & Sibero, J. T. (2022). Efektivitas Pijat Endorphin Dan Pijat Tekanan Terhadap Intensitas Nyeri Haid Pada Remaja Putri. *Femina: Jurnal Ilmiah Kebidanan*, 2(1), 64-73.
- [5] Herawati Rika (2017). Factors Influencing The Incidence Of Menstrual Pain Of Dysmenorrhea On Students Madrasah Aliyah Negeri Pasir Pengaraian. Universitas Pasir Pengairan.
- [6] Kumalasari, M.L.F. (2017). Efektivitas Senam Dismenore Sebagai Terapi Alternatif Menurunkan Tingkat Nyeri Haid Tinjauan Sistematis Penelitian Tahun 2011-2016. The Effectiveness of Dysmenorrhea Gymnastics as an Alternative Therapy in Reducing Menstrual Pain A Systematic Research *Revi*, 1 (1), pp. 10–14.
- [7] Melzack and Wall (1999). *Teori Gerbang Nyeri*. Cetakan Ketiga :Jakarta Narsih, Umi dkk (2017). Efektivitas Penanganan Dismenore dengan Kompres Hangat dan Obat Anti Nyeri pada Remaja Putri. *Jurnal Saun Med*, Vol.9. No 1.
- [8] Prawirohardjo (2011). *Ilmu Kandungan*. Edisi Ketiga. Jakarta: Bina Pustaka Rachmawati, A., & Safriana, R. E. (2020). Efektivitas Endorphin Massage dan Senam

- Dismenore dalam Menurunkan Dismenore Primer. *Media Publikasi Promosi Kesehatan Indonesia (MPPKI)*, 3(3), 192-196.
- [9] Rakhma, Astrida (2012). Gambaran Derajat Dismenore dan Upaya Penanganannya pada Siswi Sekolah Menengah Kejurusan Arjuna Depok Jawa Barat. <http://www.repository.uinjkt.ac.id> Reeder, S. J., Martin, L. L., & Koniak-
- [10] Griffin, D. (2011). *Keperawatan Marernitas Kesehatan Wanita, Bayi & Keluarga*. Volume 1, edisi 18. Jakarta: EGC.
- [11] Septianingrum & netty (2019). Pengaruh Endorphin Massage Terhadap Nyeri Haid Mahasiwi Tingkat Akhir S1 Keperawatan Universitas Nadhlatul Ulama Surabaya. *Jurnal Keperawatan Muhammadiyah*, Vol.4. No. 2.