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Effectiveness of Slow Motion Back Massage on Reducing Dysmenorrhea Intensity: Literature Review

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ABSTRACT

A common problem faced by adolescents during menstruation is primary dysmenorrhea. Symptoms include pain in the lower abdomen that can radiate to the back, waist, and thighs and interfere with activities. There is an effective treatment method to reduce pain intensity and reduce anxiety levels, namely by giving Slow Stroke Back Massage. The purpose of this study was to determine the effect of Slow Stroke Back massage on dysmenorrhea intensity. The research method used by the author is a literature review. This research is based on a literature review using a PICO search in several databases such as Google Scholar, Pubmed, and ResearchGate. 5 journals meet the criteria and get reports that giving Slow Stroke back massage which is done every day with a duration of 20 minutes if the intensity still occurs. After undergoing the intervention, a significance value with a p-value <0.05 was obtained. It can be concluded that it shows significant results in reducing pain intensity. The implications of this study may provide guidelines for health practitioners, especially massage therapists or reproductive health professionals, in integrating SSBMs as part of the care of patients with dysmenorrhea. It can improve understanding and acceptance of nonpharmacological therapies and may form the basis for continued research in the field of nonpharmacological therapies for dysmenorrhea.

***Keywords**: Back Massage, Decrease in Dysmenorrhea Scale*

INTRODUCTION

According to the World Health Organization (WHO), the first menstruation medically called menarche is a dynamic process of growth and development in the lives of adolescent girls from puberty to adulthood. At this stage cognitive, emotional, social, and physical changes. Menstruation is the process of detachment of the uterine wall accompanied by bleeding, and common manifestations in menstruation are accompanied by pain (dysmenorrhea) and there are results without complaints because there are different manifestations (Hamdiah et al., 2016). Dysmenorrhea is caused by strong uterine muscle contractions resulting from prostaglandins that contract the uterine wall and inhibit (contract) blood flow, causing tissue ischemia or lack of oxygen and glucose needed for cell metabolism. In addition, this substance also stimulates pain nerves in the uterus so that it causes pain intensity, and disruption of activity (Maryunani, 2010). According to some international reports, the prevalence of dysmenorrhea is very high worldwide. On average, more than 50% of adolescent girls in every country experience pain during Menarche. In the United States, the reported prevalence is 60%. and epidemiological studies in Sweden also report as much as 80% at the age of 19-21 years (Wijanarko et

al., 2007). While in Indonesia the prevalence of pain reaches between 45%-95% among productive age who experience menstrual pain. Symptoms The intensity of dysmenorrhea causes stiffness, or cramping in the lower abdomen. If handled too late, the pain will radiate to the back, waist, and thighs. Dysmenorrhea is also associated with psychological disorders, resulting in irritability, irritability, nausea, vomiting, headaches, acne, lethargy, and depression. Factors that cause this are smoking, drinking ice or soda during menstruation, consuming fast food, and others (FUSE, 2018).

There are two types (dysmenorrhea), namely primary dysmenorrhea and secondary dysmenorrhea. Problematic pain that often occurs in adolescents at productive age is primary dysmenorrhea due to unstable hormonal cycles, resulting in impaired concentration, and activity. While dysmenorrhoea related to gynecological disorders or menstrual pain due to childbirth is problematic from secondary. (Junizar & Sulianingsih, 2001). Pharmacological treatment is often done by adolescents during dysmenorrhea by taking hormonal drugs or pain relievers (analgesics) such as acetaminophen (paracetamol), or mefenamic acid (ponstelax). In addition, before resting apply eucalyptus oil on the stomach or compress it with that water. Based on the description above, there are no significant results in decreasing the intensity of dysmenorrhea, and still cause symptoms (Azima et al., 2015).

Many studies have shown that nonpharmacological treatment with Slow Stroke Back Massage is effective in reducing the intensity of dysmenorrhea by stimulating the skin and using essential oil and baby oil media, this massage has many benefits such as reducing pain intensity, relaxing, reducing muscle tension and others (Syah et al., 2024). So the author is interested in researching the Effectiveness of Slow Stroke Back Massage Against Decreasing the Intensity of Dysmenorrhea. The purpose of this study was to analyze the advantages and disadvantages of articles related to SSBM therapy to relieve pain in Dysmenorrhea, based on the results of a literature review of several selected articles. The benefits of this study provide a deeper understanding of the role of Slow Stroke Back Massage (SSBM) as a nonpharmacological method in reducing the intensity of dysmenorrhea. This may provide new insights into menstrual pain management alternatives and The results of this study may help in the development of more effective nonpharmacological therapies to treat dysmenorrhea. This information can open the door to the development of other methods involving massage techniques and the use of essential oils. The implications of this study may provide guidelines for health practitioners, especially massage therapists or reproductive health professionals, in integrating SSBMs as part of the care of patients with dysmenorrhea. It can improve understanding and acceptance of nonpharmacological therapies and may form the basis for continued research in the field of nonpharmacological therapies for dysmenorrhea. Further research could test the effectiveness of SSBMs on a larger scale and in diverse populations to validate these findings.

METHOD

The research method used by the author is a literature review. A literature review is a research methodology used to collect analysis in several journals as a source of data, by summarizing the essence that covers the relevant topic and objectives of the author (Yoyoh & Zuhrotunida, 2023)

Research questions follow the PICO format: (P = Population) Young women who experience dysmenorrhoea intensity, (I = Intervention) Slow Stroke Back Massage, (C = Comparison) no

comparison, (O = Outcome) Slow Stroke Back Massage can effectively reduce pain intensity and increased activity in adolescent girls. The author gets information based on databases such as Google Scholar, PubMed, and Research Gate with a period for the last 10 years (2013-2023)

The research journal articles reviewed are limited by inclusion and exclusion criteria. The inclusion criteria are as follows: (i) The article contains an explanation of Disminore, (ii) The subject of the study is Young Women who experience Disminore Intensity or other conditions related to Disminore in the productive age range of 12 – >30 years. Research articles will be rejected if they have the following exclusion criteria (i) research with systematic review methods, (ii) research journals under 2013, and (iii) subjects refuse to participate. To overcome research bias, the author will accept every intervention influence from each article, whether there is an influence or not on the research sample. For data synthesis, the authors summarized the article based on the research subject, age, participants, type of intervention given (both from frequency, duration, and tools to measure the effectiveness of the intervention), intervention effectiveness, and conclusion. Research instruments used. The Mankoski Pain Scale (MPS): This scale is used to measure pain intensity systematically, from 12 female student respondents aged 15-17 years there are different manifestations of pain intensity, specifically the group who feel moderate pain n = 7 and 58.2% the result is 25.0 with n = 3, while the result is 16.7 with n = 2 who experience severe pain. The results showed a total number of n=12 with a score of 100.0% of adolescents experiencing severe dysmenorrhea (6.5%), so adolescents reported severe pain that could reduce concentration ability. (Vetty Priscilla, 2017). Numeric Rating Scale (NRS): This scale is most commonly used to measure the intensity of pain in dysmenorrhoea found (Downieet et al. 1978) and this scale is used by researchers in making observations or direct observations of research subjects. The assessment uses an observation sheet and the pain level is measured on a scale of 0-10 with a response of 0 meaning no pain. In addition, values 1-3 (mild pain level), values 4-6 (moderate pain level), and values 7-9 (severe pain level) while the scale value 10 represents the level of severe pain that cannot be controlled (Potter and Perry, 2006).

Massage techniques used include Kutaneus Stimulus, Slow Stroke Back Massage (SSBM), and Effleurage Massage. SSBM aims to reduce the intensity of dysmenorrhoea by gently rubbing the skin of the back on respondents, starting from the middle of the lower back and then towards the left and right hemispheres from the head to the sacrum area with a circular motion at high speed, while Effleurance Massage can increase endorphin levels in connective tissue, a neurotransmitter, and neuromodulator, which inhibits transmission, by applying pressure and rubbing slowly and gently on the surface of the skin by using pressing fingertips. Both methods are recommended to increase functional activity even during menstruation and reduce the intensity of dysmenorrhea.

RESULTS AND DISCUSSION

Of the 5 journals studied after passing the screening, eligibility, and inclusion stages. Slow Stroke Back Massage is a complementary and alternative treatment, that has been used as an effective treatment method for Decreasing the Intensity of Dysmenorrhea, according to the results of the article obtained and analyzed by the author, we got the results that Back Massage provides significant results in decreasing intensity in patients with Dysmenorrhea.

Table 1. Comparison of Experimental Groups and Control Groups

Reviewer	Participant		Intervention		Measurement	Results	Design Study
	Intervention Group	Control Group	Experimental Group	Control Group			
Vetty Priscilla (2017)	n= 12 15 - 17 tahun	-	Stimulus Kutaneus, Slow Stroke Back Massage (SSBM)	-	The Mankoski Pain Scale (MPS)	p<0,05	Quasy Eksperiment
Wiwin Rohmawati (2019)	n=14 unknown	-	SSBM	-	Numeric Rating Scale	p<0,005	Pre Experiment Designs
Mukhoirotin (2020)	n=15 13 - 18 tahun	n=15 13 - 18 tahun	Stimulasi Kutaneus (Slow Stroke Back Massage)	Routine Educations	Numeric Rating Scale	P<0,05	Quasi Eksperimen Posttest
Sri Dewi (2022)	n= 12 12 - 17 tahun	n= 13 12 - 17 tahun	SSBM	Routine Educations	Numerik Rating Scale	P< 0,008	Quasy experiment
Hamdiah (2016)	n= 16 18 - 21 tahun	n= 16 18 – 21 tahun	SSBM	Rountine Educations	Numerik Rating Scale	p < 0,001	Quasy Eksperimen

Based on a literature review study, the authors found that of the 82 sample results, the average sample was dominated by the elderly with the age of >/= 21 years. Of the literature found, most literature uses RCT research design and measurement CAS, CQLS, and Defection Diary with p<0.05, Experimental group used Kutaneus Stimulus intervention Slow Stroke Back Massage while the control group no intervention.

Table 2. Dose Therapy Intervensia Slow Stroke Back Massage

Reviewer	Type of Intervention	Therapeutic Dosage				Duration Therapy
		F	I	T	T	
Vetty Priscilla (2017)	SSBM	Every Day	Slight pressure	SSBM	10 minutes	5 months,
Iiwin Rohmawati (2019)	SSBM	1 time	Slight pressure	SSBM	3-5 minutes	1 day
Mukhoirotin (2020)	Slow Stroke Back Massage terhadap kadar β-endorfin, IL-6, TNF-α dan intensitas nyeri haid (MPI).	60 times/minute	Slight pressure	SSBM	20 minutes	once on the first day of dysmenorrhea
Sri Dewi (2022)	SSBM	1 time/2day	Slight pressure	SSBM + Warm Compresses	unknown	1kali/2hari
Hamdiah (2016)	SSBM + Effleurage Massage	Every day	Slight pressure and rhythmically on the back by covering an area of 5 cm on both sides of the spinal protrusion starting from the head to the sacrum area.	SSBM + Effleurage Massage	5 minutes	2 months

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Based on research that has been done, researchers found that there are types of massage movements that can be applied to adolescent girls with dysmenorrhea such as effleurage, and SSBM with a frequency of every day/menstrual period if experiencing dysmenorrhea, Intensity of Slight Pressure and rhythmic with a duration of 20 minutes and carried out 5 months if there is an intensity of dysmenorrhoea.

Table 3. Mean of Study Characteristics

Reviewer	Measurement	Group experiment		Control group		Significant
		Pre	Post	Pre	Post	
Vetty Priscilla (2017)	MPS	1,67 ± 1,44	1,67 ± 1,44	-	-	P<0,002
Wiwin Rohmawati (2019)	NRS	42,4 ± 33,3	27,3 ± 6,1	-	-	p<0,000
Mukhoirotin (2020)	NRS	5,25 ± 1,62	2,65 ± 1,27	5,95 ± 1,23	5,45 ± 1,54	ρ<0.05
Sri Dewi (2022)	NRS	5,42 ± 1.37	3,08±1,24	2,77 ± 0,72	3,08 ± 1,24	p<0.749
Hamdiah (2016)	NRS	1,50 ± 0,25	2,25 ± 0,38	0,803	0,129	p<0,001

Based on the table above, when compared with the control group, the intervention group showed a good and significant improvement.

The number of articles evaluated includes 5 related articles about Slow Stroke Back Massage. The results of this study have the same goal, which is to reduce the intensity of pain. However, some literature combines SSBM with Effleurage Massage and warm compress methods. The difference between various articles lies in the timing and technique of their implementation (Priscilla & Afriyanti, 2017).

The research (Rohmawati, 2019) was conducted at the Putri Aisyah Tonggalan Klaten Orphanage on November 21, 2018, with study pre-experiment designs and formed a pretest-posttest group. The study sample amounted to 14 respondents (42.4%) on a scale of 2 and 3 had a mild level of pain after Kutaneus Slow Stroke Back Massage stimulation with a duration of 3-5 minutes became a scale of 0 which means there is no pain. The results (42.4±33.3 to 27.3±6.1) that there was a decrease in pain intensity and there were results Data analysis using the Wilcoxon statistical test signed rank test was obtained (pvalue<0.05) and obtained sig value. (2-tailed) of 0.000 which means that there is a significant effect so that there can be a decrease in the intensity of the pain scale.

The provision of slow stroke back massage can also be done with Warm Compresses massage media in research (Sri et al., 2020) with the Quasy Experiment method with 25 adolescent girls aged 12-17 years to compare the effectiveness of SSBM with Warm Compresses. Grouping will be done based on 1:1 Informed consent. Where the intervention is done once on the first day of the menstrual cycle or up to 2 days after menstruation. The instrument used in this study was an observation sheet with a pain intensity scale (Numerical Rating Scales) with categories 0=no pain, 1-3=mild pain, and 4-6=moderate pain. 7-9 = severe pain and 10 = severe pain. Data on pain scales before and after intervention were collected by interviewing adolescent respondents related to pain scale instruments. The results showed that the average score in the SBBM group decreased (5.15 ± 0.89 to 2.77±0.72) with (value = 0.008) compared to the Warm Compresses group (5.42 ± 1.37 to 3.08±1.24), (p-value = 0.000). Based on the results of statistical tests, the difference between the two groups obtained a value of P = 0.749, it can be concluded that there is no difference in the pain scale. Based on sources (Hamdiah, 2016). This journal explains that SSBM administration can also be done with effleurage massage. Of the 32 respondents aged 18-21 years, the total sample was divided into 2 groups. Group 1 with therapeutic effleurage massage while Group 2 with SSBM therapy (Dewi Anggadini et al., 2022). This study used the quasi-experimental method with a two-group pretest-posttest design and pain scale measurement with a numerical scale. Each experimental group in this study was given a duration of therapy of 5 minutes. After receiving effleurage massage by stimulating the skin can deliver sensory to the cerebral cortex through A-δ fibers not to receive pain signals and effleurage massage delivers the warmth felt. However, the results showed with effleurage massage the average score was from (3.94±0.38) to (2.25±0.38). While SSBM scores mean (3.81±0.35) to (1.50±0.25) because SSBM can activate the transmission of A-beta sensory nerve fibers and reduce the transmission of pain through C and A-delta fibers that are small in diameter for the transmission of pain impulses resulting in significant in decreasing the intensity of dysmenorrhea (Taylor et al., 2006), (Harris et al., 2009)

Journal opinion (Mukhoirotin et al., 2020) SBBM can stimulate the release of β-endorphins levels and reduce proinflammatory cytokines (IL-6 and TNFα). This research method uses quasi-posttest experiments with 40 respondents divided into 2 groups, where the control group aged 13-18 years is given treatment 60 times per minute of therapy duration for 20 minutes. Some results show the effect of SSBM on MPI or changes between levels of β-endorphins (p = 0.000), IL-6 (p = 0.034), TNFα (p = 0.049), and the SSBM group produces (p < 0.05) So it can be concluded that SSBM is an effective nonpharmacological action in primary dysmenorrhea.

CONCLUSION

Adolescents in productive age often experience primary dysmenorrhoea due to cycles of hormonal instability. The results of synthetic data showed that Slow Stroke Back Massage provided a significant effectiveness of $p<0.05$, in dealing with symptoms of dysmenorrhea intensity, in addition, it was found that SSBM can stimulate the release of β-endorphin levels and reduce proinflammatory cytokines (namely IL-6 and TNFα). Thus, SSBM is an effective nonpharmacological intervention for primary dysmenorrhea and SBBM can also be combined with Warm Compresses and Effleurage Massage media. Stroke Back Massage (SSBM) has been shown to be effective in reducing the intensity of dysmenorrhea in adolescent girls. Dysmenorrhea is a common condition in more than 50% of adolescent girls worldwide, with symptoms such as pain, irritability, nausea, vomiting, headaches, acne, weakness, and depression. In this study, SSBM was used as a nonpharmacological treatment method and was shown to provide significant results in reducing the pain intensity of dysmenorrhea. SSBM works by stimulating the skin through slow massaging movements using essential oils and baby oils. This method has a variety of benefits, including reducing pain intensity, providing a sense of relaxation, and reducing muscle tension. The results showed that SSBM can be used as an effective intervention to reduce the intensity of dysmenorrhea in adolescent girls. Some studies suggest that SSBMs may work by stimulating the release of β-endorphins and reducing levels of proinflammatory cytokines such as IL-6 and TNFα. Therefore, SSBMs not only help reduce pain symptoms, but also have a positive effect on the biochemical aspects associated with dysmenorrhea. Overall, the study concluded that SSBM is an effective nonpharmacological intervention and may be an option for treating dysmenorrhea in adolescent girls. In addition, SSBM can be combined with other methods such as Warm Compresses and Effleurage Massage to provide optimal results.

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