Effectiveness of Finger Hold Technique and Guided Imagery on Reducing Primary Dysmenorrhoea Pain Intensity

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ABSTRACT

An important phase of adolescent growth is puberty. It is identified in women with the onset of menstruation. Dysmenorrhoea is one of the discomforts that some women experience during menstruation. Among the non-pharmacological methods for pain management are Guided Imagery and finger holding. The aim of this study was to ascertain how well the Finger Holding and Guided Imagery approaches work to reduce the severity of primary dysmenorrhoea discomfort. Approach. Randomised Pretest-Posttest Control Group Design was used in this study as the real experimental design, and random sample methodology was used as the sampling method. 34 respondents formed the sample size of the study, with 17 respondents in each of the intervention and control groups. The data analysis used to assess the difference in levels used the Wilcoxon test. To assess differences in differences using the Mann Whitney test. According to the data, the pain scale had dropped to 5.117 before the intervention, falling into the moderate discomfort category. 3.058 was the value in the mild group after the intervention. Additional examination of the decrease in pain scale after finger holding and Guided Imagery showed a difference of 0.000 in the decrease in pain scale, with a p value of 0.000. As a result, the use of finger holding and guided imagery had an impact on the decrease of dysmenorrhoea pain scale.

INTRODUCTION

Dysmenorrhoea is one of the common health problems experienced by adolescent girls during menstruation, characterised by abdominal pain that interferes with daily activities. During menstruation, (Intan Putri Utami, 2019) . Journal of Work Environment reported that primary dysmenorrhoea (54.98%) and secondary dysmenorrhoea (9.36%) are the most common types of dysmenorrhoea in Indonesia. (Fitria, F., & Haqqattiba'ah, 2020) . In 2018 in West Java, there were 56,598 adolescent girls aged between 10 and 24 years who had reached the reproductive period. Of these, 11,565 experienced dysmenorrhoea and sought help at a health facility. The percentage of total adolescent girls who came to health

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facilities due to Dysmenorrhoea was 1.31% (Data and Information Centre of the Ministry of Health of the Republic of Indonesia, 2020) . Conventional approaches in the management of Dysmenorrhoea pain often involve the use of non-steroidal anti-inflammatory drugs or analgesics, which can have certain side effects and do not always provide satisfactory effects for all individuals. Therefore, there is a need to identify and explore other alternatives that may be effective in reducing menstrual pain without causing serious side effects.

Based on the results of a preliminary study conducted on 4 March 2024 at 'Aisyiyah University Bandung on Midwifery Students Year III semester 6, they usually experience dysmenorrhoea when approaching menstruation, the first day of the second and when menstruation will stop on the fifth or sixth day, they do treatments such as warm compresses, finding a comfortable position such as prostration, drinking sour turmeric herbs and pain relievers such as paracetamol. However, there are also other female students who choose to leave it alone. From the results of this interview, it can be seen that many midwifery undergraduate students experience dysmenorrhoea but none of them try to do non-pharmacological treatments as a form of physical activity to overcome pain during dysmenorrhoea. One of the non-pharmacological pain relief methods is the *Finger Hold* relaxation technique. Anyone can use this method independently and with great ease.

The *Finger Hold* method combines the technique of grasping fingers for a short period of time with deep breathing relaxation. When using this approach, one will feel increased contentment and relaxation. which can help reduce mental and physical tension due to stress. Thus, this technique can increase tolerance to pain (Hasaini, 2019) . On the other hand, *Guided Imagery* is a method of using imagination that aims to provide positive effects. By imagining a comfortable scenario. there can be modifications in motor activity that cause tense muscles to become more relaxed, and responses to mental images to become clearer. This process occurs because imagined stimuli from pleasant situations will be processed by a part of

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the brain called the brain stem, then channelled to the thalamus sensor for further processing (Ajuan, Ona., Maria, Lilla., & Susanti, 2022) . Previous studies have shown that these two methods can be beneficial in managing pain in other conditions, such as chronic pain and acute pain. However, their use in the context of Dysmenorrhoea pain is not fully well understood and still requires further research. The novelty of this study lies in combining two techniques namely *Finger Hold* and *Guided Imagery* to reduce pain intensity in primary Dysmenorrhoea. If proven effective, *Finger Hold* and *Guided Imagery* can be an accessible non-pharmacological treatment option that can be applied by individuals experiencing Primary Dysmenorrhoea to reduce discomfort and improve quality of life.

Thus, the study on the effectiveness of *Finger Hold* and *Guided Imagery* for Dysmenorrhoea pain aims to evaluate the effectiveness, safety, and clinical feasibility of these two methods in reducing primary Dysmenorrhoea pain intensity. This study may also help in understanding the mechanism of action underlying the pain-reducing effects of both methods, as well as gaining insights on how best to apply them in clinical practice. Furthermore, with the increasing public interest in alternative and holistic medicine, this study may also provide stronger scientific support for the use of *Finger Hold* and *Guided Imagery* as part of an integrated approach in Dysmenorrhoea pain management.

RESEARCH METHODS

This study used a real experimental design with two groups of respondents through the use of *Randomised Pretest-Posttest Control Group Design*: group I (experimental group) received *Finger Hold* and *Guided Imagery* techniques, while group II (control group) received rest and warm compresses. The researcher invited prospective respondents to sign an *informed consent* sheet as proof that they were willing to participate as research respondents, then explained how to fill in the pain level measurement sheet and asked respondents to fill in the pain scale. In the intervention group, measurements were taken before and after the administration of *Finger Hold and Guided Imagery*. The intervention was conducted on the first day of

menstruation for 30 minutes. During the session, the *Finger Hold* technique was applied by holding the finger for 3 minutes starting from the thumb. After 15 minutes, the technique was applied to the other hand, while the *Guided Imagery* technique directed respondents to imagine calming and pleasant situations to reduce pain perception. By completing the menstrual pain measurement observation sheet using the *Numeric Rating Scale (NRS)*, *pre-test* is an observation made before treatment, and *post-test* is an observation made after treatment.

In this study, a randomised sampling method was used, where the researcher would draw an envelope containing either the experimental or control writing. The study sample size consisted of 34 respondents in total, with 17 respondents in each of the control and intervention groups obtained from the two-group mean difference formula with a pooled standard deviation of 0.863. To account for possible study failure, two respondents were added to each group

The samples in this study were adolescents who experienced primary dysmenorrhoea and met the inclusion criteria and exclusion criteria. Inclusion criteria in this study include adolescents who do not use painkillers, warm compresses, and traditional medicine, do not exercise or exercise regularly and adolescents who experience secondary dysmenorrhoea. The exclusion criteria were adolescents other than undergraduate midwifery students at 'Aisyiyah University Bandung, adolescents who drank herbal medicine or painkillers during menstruation, and adolescents who had a long menstrual cycle ≥ 35 days.

This research has passed the ethical review of 'Aisyiyah University Bandung with ethical approval letter No.1013/KEP.01/UNISA-BANDUNG/VII/2024.

RESULTS AND DISCUSSION

Results

This study was conducted on undergraduate midwifery students at 'Aisyiyah University Bandung, there were 52 respondents at the beginning of the study. Figure 1 shows the flow of the study.

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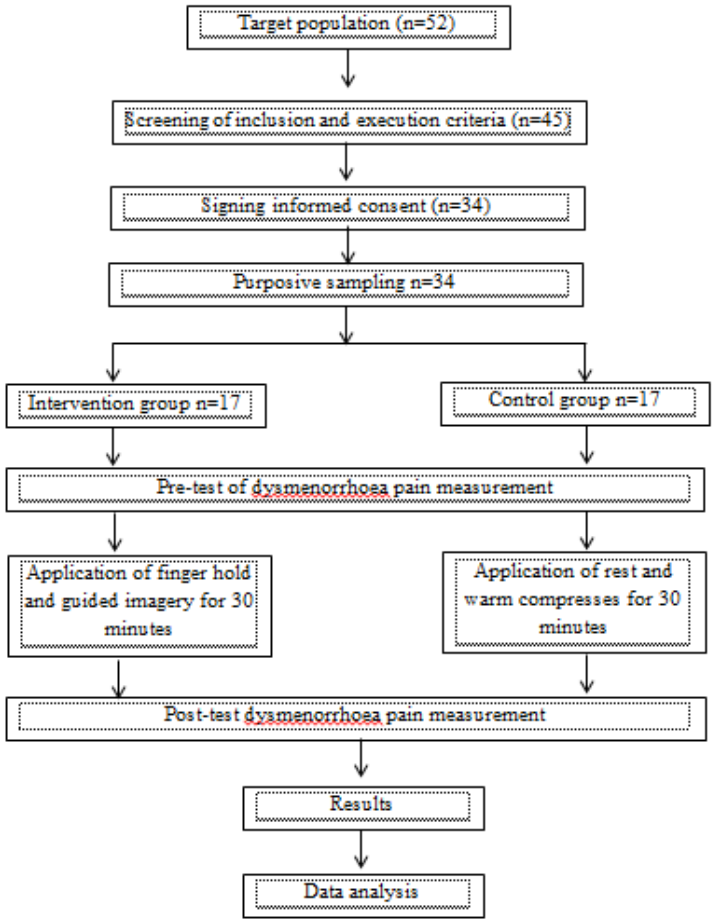

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Figure 1: Research flow

Data Normality Test

In this study, the normality test used was Kolmogorov-Smirnov. Based on the data results, the pretest alpha value is 0.004, the pre-test data distribution can be said to be normally distributed because the pre-test score shows that the alpha value is smaller than 0.05, namely 0.004> 0.05. While the posttest alpha value is 0.010, the post-test data distribution can be said to be distributed abnormally because the post-test score shows that the alpha value is greater than 0.05, namely 0.010> 0.05. So the conclusion of this distribution is that the pre-test and post-test data scores of the experimental group and control group are not normally distributed.

Analysis of Results

The following findings are based on a study investigating the efficacy of *Finger Hold* and *Guided Imagery* in reducing primary dysmenorrhoea pain

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severity in undergraduate midwifery students at 'Aisyiyah University, Bandung.

Table 1. Frequency Distribution of Respondents Based on Age, *Menarche* Age, Menstrual Cycle, and Duration of *Dysmenorrhoea*

No.	Characteristics	F	%
1	Age (Year)		
	18	3	8,9
	19	8	23,5
	20	15	44,1
	21	6	17,7
	22	2	5,9
2	Age of Menarche (Years)		
	12	15	44,1
	13	8	23,5
	14	9	26,5
	15	2	5,9
3	Menstrual Cycle		
	Regular	34	100
	Irregular	0	0
4	Duration of *Dysmenorhea*		
	1 day	24	70,5
	2 days	10	29,50
	> 2days	0	0
	Total	34	100

Based on Table 1, out of 34 respondents, 3 people (8.9%) were 18 years old, 8 people (23.5%) were 19 years old, 15 people (44.1%) were mostly 20 years old, 6 people (17.7%) were 21 years old, and about 2 people (5.9%) were above 22 years old. A total of 15 respondents (44.1%) were 12 years old, 8 respondents (23.5%) were 13 years old, 9 respondents (26.5%) were 14 years old, and only 2 respondents (5.9%) were 15 years old which was the least common age of menarche. All respondents experienced regular menstrual cycles. *Dysmenorhea* mostly occurred for 1 day, 24 respondents (70.5%), and some occurred for 2 days as many as 10 respondents (29.5%).

Table 2 Pre and post pain scale measurements in the intervention group and control group

Pain Scale Measurement	Group				*P-value*[b]
	Intervention		Control		
	Mean ±SD	Min-Max	Mean ±SD	Min-Max	
Before	5,117±1,116	4-7	5,411±1,277	4-8	0,529
After	3,058±1,434	1-6	5,235±1,393	3-8	0,000
P-value[a]		0,000		0,083	
Difference	2,058±0,826		0,176±0,392		0,000

a. Wilcoxon test
b. : Mann Whitney U

Based on table 2, the results of measuring the pain scale before the intervention group showed an average of 5.117 and in the control group the

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pain scale averaged 5.411. The results of measuring the pain scale after intervention in the intervention group decreased by an average of 3.058 while in the control group the pain scale decreased by an average of 5.235. The standard deviation value of the decrease in pain scale before and after intervention in the intervention group was 1.116, while the standard deviation value of the decrease in pain scale before and after treatment in the control group was 1.277.

There was a statistically significant impact on the pain scale after the administration of Finger Hold and *Guided Imagery*, based on the results of the Wilcoxon test comparing the pain scale before and after the intervention (p value = 0.000). There was no significant difference between pre- and post-test scores on the pain scale for the control group (p = 0.083). Data analysis showed that the intervention group had a significant reduction in pain compared to the control group, and there was a statistically significant change in the pain scale after the test (p = 0.000).

Discussion

Everyone has varying levels of pain, because pain is a subjective experience (Hidayati et al., 2022) . Individual responses to pain perception are also not the same. The level of pain experienced by each individual is different, depending on their ability to respond and perceive the pain felt (Hidayati et al., 2022) . Based on the results of the study, 34 respondents were more than 11 years old when they experienced menstruation, with 15 respondents (44.1%) experiencing menstruation at the age of 12 years. Because the main ovarian follicles are still small at the age of less than eleven years, the estrogen produced is also small. This is because the cervix is still narrowed and the reproductive organs are not ready to undergo changes, so menstrual pain will occur. (Sari & Nurazizah, 2023) .

The research findings showed that each of the 34 respondents had a normal menstrual cycle. In accordance with the finding that primary dysmenorrhoea is often associated with regular ovulation, which occurs in women with regular menstrual cycles, the research findings showed that the respondents who experienced dysmenorrhoea had more regular menstrual periods. This ovulation causes an increase in prostaglandin

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production in the body, which triggers stronger uterine contractions and, ultimately, leads to more severe pain during menstruation.

According to the research findings, the respondents' pain scores after the intervention dropped between 1 (mild pain) and 6 (severe pain). There is a theory that *Finger Hold* is accompanied by relaxation techniques that involve creating calming and positive mental images. Physical and emotional stress can be reduced by warming the entry and exit points of energy in the meridians, which are the pathways that connect the organs of the body. (Kardiatun et al., 2020) . And *Guided Imagery* techniques help individuals distract from pain and improve psychological well-being. Using this technique, individuals are directed to imagine a calming or pleasant experience. This can reduce physical and emotional tension, and assist in coping with pain (Ramli, Hera Wati, 2019) .

By increasing self-confidence and self-control and decreasing tension, Finger Hold relaxation technique and *Guided Imagery* work well together to reduce pain. According to research, these methods can increase the synthesis of endorphin chemicals in the body, which act as organic painkillers and promote relaxation. (Utari et al., 2024) . In the context of treatment, this technique has been shown to be effective in reducing post-operative pain, such as in patients after sectio caesarea, where the results of the study showed a significant reduction in pain levels after the application of this technique (Indriyanti et al., 2022) .

The *Finger Hold* stimulation method can generate impulses that travel through afferent nerve fibres that are not nociceptors. By closing the pain "gate", this procedure reduces the severity of the pain felt. According to research, when pressure is applied to specific points on the hand, the signals generated can compete with pain signals, resulting in a reduction of pain perception in the brain. This technique also relates to the concept of Gate Control Theory, which states that impulses from non-nociceptor nerve fibres can block pain signals transmitted through nociceptor fibres. Thus, this technique is effective for reducing pain in various conditions, including dysmenorrhoea and postoperative

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discomfort. In accordance with previous research, this study found that the Finger Grip Relaxation Technique was effective in reducing pain levels in patients at Sidoarjo Regional Hospital who underwent caesarean section. The results showed that both the obstetric ward of Pariaman Hospital and Sidoarjo Hospital experienced a decrease in post-cesarean section pain. (Tyas, 2020) . The findings of this study support the hypothesis that pharmacological and nonpharmacological methods can be used to treat dysmenorrhoea. Pharmacologically, NSAIDs (nonsteroidal anti-inflammatory drugs) including diclofenac, naproxen, and ibuprofen are often used to treat pain. These drugs work by reducing inflammation and pain caused by uterine muscle contractions during menstruation (Lestari et al., 2023) . This can be achieved in a nonpharmacological way, namely by using *Finger Hold* techniques, relaxation, hypnosis, warm water compresses, and distraction techniques, such as reading, watching television, and listening to music or radio. (Lestari et al., 2023) .

The results showed that the application of *Finger Hold* and *Guided Imagery* techniques has a positive impact in reducing dysmenorrhoea pain. However, to achieve optimal results, these interventions need to be performed under conditions of concentration and relaxation, as well as following established procedures. Thus, this method can be considered effective for pain relief, and *Finger Hold* technique can be recommended as one of the alternatives to reduce pain experienced by individuals.

Finger Hold and *Guided Imagery* are non-pharmacological methods that are easy to apply, inexpensive, and have minimal side effects, so they can be an alternative to managing dysmenorrhoea pain in adolescents. However, the limitations of this study include limited population coverage, namely only in undergraduate midwifery students at 'Aisyiyah University Bandung, so the results cannot be widely generalised. In addition, the relatively short duration of the intervention may not reflect the long-term effectiveness of these two techniques. Therefore, further research is needed involving a more diverse population and using a longitudinal design to strengthen the validity of the results.

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It is expected that the use of *guided imagery and* finger-holding techniques will help reduce the number of female students who are absent from class due to menstrual pain and abdominal pain. This method has a beneficial effect in improving learning achievement because it can be used anywhere and anytime.

CONCLUSIONS

Based on a study entitled "Effectiveness of *Finger Hold* and *Guided Imagery* Techniques on Decreasing Primary Dysmenorrhoea Pain Intensity," it can be concluded that *Finger Hold* and *Guided Imagery* techniques can provide practical benefits in reducing primary dysmenorrhoea pain intensity significantly. Both methods can be implemented as safe, simple, and practical non-pharmacological alternatives in pain management in adolescents and young women. In addition, these techniques have the potential to improve respondents' quality of life by reducing stress, increasing relaxation, and providing control over pain. The results showed that these two techniques can be widely applied, both in clinical settings by health workers and independently by respondents after receiving education.

As a follow-up to this study, further research with larger samples is recommended to strengthen the validity of the results, as well as exploration of the mechanism of action and long-term effects of both methods. The development of practical guidelines for health workers is also needed so that this method can be widely applied in health services.

LITERATURE

Ajuan, Ona., Maria, Lilla., & Susanti, N. (2022). Literature Review Method: The Effectiveness of *Guided Imagery* Treatment to Reduce Anxiety Levels in Schizophrenia Mental Disorder Patients. *Professional Health Journal, .4*

Arnett, J. J. (2019). *Adolescence and Emerging Adulthood: A Cultural Approach* (6th ed.). MA: Pearson.

Berndt, T. J., & Savin-Williams, R. C. (2017). *Handbook of Adolescent Psychology: Individual Bases of Adolescent Development* (2nd ed). Psychology Press.

Data and Information Centre of the Ministry of Health of the Republic of Indonesia. (2020). *The situation of adolescent*

Available Online at https://journal.ibrahimy.ac.id/index.php/oksitosin
p-ISSN: 2354-9653| e-ISSN: 2597-6524

reproductive health. Indonesian Ministry of Health.

Fitria, F., & Haqqattiba'ah, A. (2020). The Effect of Acupressure with Tuina Technique on Reducing Menstrual Pain (Dysminorrhoea) in Adolescent Girls. *Journal of Ners and Midwifery*.

Hasaini, A. (2019). Effectiveness of *Finger Hold* Relaxation on Pain Reduction in Patients. *Health Dynamics Journal of Midwifery and Nursing*, *1*, 1.

Hidayati, H. B., Amelia, E. G. F., Turchan, A., Rehatta, N. M., Atika, & Hamdan, M. (2022). Effect of Age and Gender on Pain Scale of Trigeminal Neuralgia Patients. *Aksona*,*1* (2), 53-56. https://doi.org/10.20473/aksona.v1i2.149

Indriyanti, I., Sariaty, S., & Ferina, F. (2022). The Effect of *Finger Hold* Relaxation Techniques on Reducing Pain Intensity in Post Sectio Caesarea Mothers. *Siliwangi Health Journal*,*2* (3), 751-761. https://doi.org/10.34011/jks.v2i3.785

Intan Putri Utami, I. U. (2019). The Effect of Pelvic Rocking Exercise on the Pain Level of Primary Dysmenorhea in Junior High School Students Ma'arif Gamping Yogyakarta. *Scientific Journal of Nursing*, *7*(2).

Kardiatun, T., Pratama, K., Khair, F., Hartono, H., & Astuti, D. (2020). Test the Effectiveness of *Finger Hold* and Deep Breath Relaxation Techniques on Reducing the Intensity of Dysminorrhoea Degree in Adolescent Girls at SMA Negeri 10 Pontianak. *Journal of Nursing and Health*,*11* (2), 33-42. https://doi.org/10.54630/jk2.v11i2.125

Karout, S., Soubra, L., Rahme, D., Karout, L., Khojah, H. M. J., & Itani, R. (2021). Prevalence, risk factors, and management practices of primary dysmenorrhea among young females. *BMC Women's Health*,*21* (1), 1-14. https://doi.org/10.1186/s12905-021-01532-w

Laurence Steinberg. (n.d.). *Adolescence* (11th ed). McGraw-Hill Education.

Lestari, K. P., Fauziah, F., Kardela, W., & Ramadhani, P. (2023). The Effect of Pharmacological and Non Pharmacological Treatments on Menstrual Pain in STIFARM Padang Students. *Higea Pharmacy Journal*,*15* (1), 21. https://doi.org/10.52689/higea.v15i1.512

Putri, N. E., Wilson, & Putri, E. A. (2020). Relationship between Emotion Regulation and Menstrual Pain Intensity (Dysmenorrhoea) in Junior High School Students of State 8 Pontianak. *National Journal of Health Sciences*, *3*(2), 51–61.

Ramli, Hera Wati, N. R. (2019). The Effect of *Guided Imagery* on Reducing Dysmenorrhoea Pain. *Journal of Health Phenomena*, *.2*

Sari, D. I., & Nurazizah, N. (2023). Effleurage Massage on the Intensity of Dismenorrhea in Adolescent Women; Literature Review. *Journal of Smart Nursing and Health Science*,*1* (1), 24-28. https://doi.org/10.36743/josnhs.v1i1.382

Tyas, D. A. (2020). The Effect of *Finger Hold* Relaxation Technique on Reducing Pain Levels in Postoperative Sectio Caesarea Patients. *Journal of Community Midwives*,*3* (2). https://doi.org/10.33085/jbk.v3i2.4616.

Utari, A. A., Jerita, D., Sari, E., & Fitrianur, W. (2024). *Effect of Finger Hold Relaxation Technique on Reducing Intravenous Insertion Pain Level*. *5*(1), 48–54.

Available Online at https://journal.ibrahimy.ac.id/index.php/oksitosin
p-ISSN: 2354-9653| e-ISSN: 2597-6524