

# Effectiveness of the Finger Handheld Relaxation and the Self-Tapping Relaxation Technique on Dysmenorrhea Pain in Nursing Students

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**Abstract-**Management of dysmenorrhea pain is very important. One of them is using non-pharmacological techniques, which are finger handheld relaxation pain sensations and deliver the transmission of pain impulses to the brain. Self-tapping is tapping touch which is done independently. Self-tapping can apply basic touch techniques to yourself and doesn't require a lot of money. The purpose of this study was to determine the effectiveness of hand-held relaxation techniques against dysmenorrhea pain in the second semester Nursing Students of Harapan Bangsa University. Design This study was a quasi-pretestposttest experimental design with control groups using a sample of 72 respondents divided into 3 groups, 24 respondents used Self Tapping, 24 respondents used Finger Handheld Relaxation technique and a control group of 24 respondents. To find out the decrease in pain scale in the treatment group, the researchers used the Paired T test and to find out the effectiveness of hand-held relaxation technique towards dysmenorrhea pain in the second semester Nursing students of Harapan Bangsa University, Independent Sample T Test was employed. Self- Tapping effectively reduces dysmenorrhea pain in Semester II Nursing students with p-value 0.00. Finger Handheld Relaxation Technique was effective to reduce dysmenorrhea pain in the second semester Nursing students with a p-value of 0.00

**Keywords:** finger handheld relaxation, self-tapping dysmenorrhea

## I. INTRODUCTION

When dysmenorrhea occurs, women will feel pain and the impact of pain will result in limited mobilization, Activity of Daily Living (ADL) is disrupted due to increased pain intensity when moving. The incidence of dysmenorrhea in adolescents in Asia is 74, 5%. Hispanic teenage girls have a prevalence of dysmenorrhea of 85%, while the incidence in Indonesia is 55%. Seeing these data can be interpreted that almost all women have experienced dysmenorrhea [1]

Efforts to manage pain in dysmenorrhea are using pharmacological and non-pharmacological methods.

Pharmacological pain control is effective for moderate and severe pain. Pharmacology is not intended to improve the ability of the client to control his pain, so a pharmacological combination is needed to control pain with non-pharmacology so that pain sensation can be reduced and the recovery period does not extend[2]

Non-pharmacological treatment that can reduce pain, can also start from simple, such as compressing with hot temperatures to hypnosis. One nonpharmacological treatment that can reduce pain is selftapping therapy. Self-tapping is tapping touch which is done independently. Self-tapping can apply basic touch techniques to yourself and doesn't require a lot of money. Tapping Touch is a holistic treatment technique using touch and rhythm. Although it was made easy to learn and simple to do, Tapping Touch was developed through the integration of therapeutic elements which proved to be effective through clinical and research use [3].

Finger Handheld relaxation technique is an easy way to manage emotions and develop emotional intelligence. Along our fingers there are energy channels or meridians connected to various organs and emotions [4]. Grasping a finger while breathing deeply (relaxation) can reduce and heal physical and emotional tension, because the grip of the finger will warm the points of entry and entry of energy to the meridians (energy channels) located on our fingers [5].

Harapan Bangsa University has also been used as a place for research on the reduction of dysmenorrhea pain such as drinking turmeric acid, Ar Rahman murotal therapy, yoga, progressive muscle relaxation & aromatherapy, deep back massage, hypno-analgesia and Mozart classical music therapy, but for complementary self-tapping and relaxation therapy Finger Handheld Relaxation have never been done.

Based on pre-survey on level I Nursing DIII students and SI Nursing, 120 female students had dysmenorrhea. In addition, the female students did not know about self-tapping therapy and Finger Handheld

Relaxation when experiencing dysmenorrhea. Thus, researchers are very interested and want to know more about the effect of Self-Tapping and Finger-Grip Relaxation on Primary Dysmenorrhea Pain in the second semester Nursing students at Harapan Bangsa University.

**II. METHOD**

The independent variable in this study was the hand-held relaxation technique and self-tapping. The dependent variable of dysmenorrhea pain was the parameter used to assess unpleasant sensory and emotional experiences related to contractions obtained during menstruation in the second semester students at Harapan Bangsa University. How to measure using the Numeric Rating Scale Pain Scale was measured 3 times, with the assessment results in the form of an average of the measurement results and the measurement scale was a ratio.

The design in this study was a quasi-pre-test with control group. The samples used in this study were female students with primary dysmenorrhea pain, 24 female students in the self-tapping group and 24 female students in the hand-held relaxation group and 24 female students as the control group. Thus, the samples the researchers took were 72 female students. The sampling technique used in this study was purposive sampling, by determining the sample based on the wishes of the researcher based on criteria established during the study. Data collection techniques used in this study were the assessment of the pain scale in dysmenorrhea before and after the treatment of Finger Handheld Relaxation and selftapping using the Numeric Rating Scale pain scale. At the time of data collection, the researcher only intervened the respondent, the respondent under study was given the understanding not to use pain medication during the study, whereas to measure the Numeric Rating Scale both before and after the treatment, it was carried out by the research assistants. The research assistants consisted of University of Harapan Bangsa students. Pain scale measurement was carried out by research assistants aimed to avoid the subjectivity of the researchers. Therefore, before the research was carried out, it would be conducted first on the similarity of perception with research assistants including SOP of Handheld Relaxation and self-tapping, and how to measure pain scale as well as research work procedures that would be carried out. Data analysis method used in this study include univariate analysis and bivariate analysis. Univariate analysis to get a description / descriptive of each research variable. Univariate analysis includes the mean, mode, median, minimum and maximum values, standard deviations, variants and the distribution and proportion of patient characteristics as well as pre-test and post-test.

The bivariate analysis used in this study was to find out the difference in pain scale in the control and intervention groups, if the data were normally

distributed then using the Paired T test. To find out the difference in pain scale between the control group, with the intervention group if the data distribution was normal using the Independent T test. To find out the difference in pain scale between the control group, with the intervention group 1, 2 using One Way ANOVA.

**III. RESULT AND DISCUSSION**

Characteristics of Respondents in general, the characteristics of respondents described in this study were age and information about RGJ (*finger handheld relaxation*) and self-tapping

Characteristic s		RGJ		Self-Tapping		Control	
		F	%	f	%	F	%
Age	17 year	1	4.2	1	4.2	0	0
	18 year	12	50	12	50	7	29.2
	19 year	10	41.6	10	41.6	13	54.1
	20 year	1	4.2	1	4.2	4	16.7
	Total	24	100	24	100	24	100
Infor mation about RGJ and Self Tapping	Neve r	0	0	0	0	0	0
	Yet	24	100	24	100	24	100
	Total	24	100	24	100	24	100

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(I) Treatment	(J) Treatment	Std. Error	p value
Control	Self-Tapping	0,516	0,07
	FHR	0,500	0,00
Self-Tapping	Control	0,516	0,03
	FHR	0,500	0,07
finger handheld relaxation (FHR)	Control	0,516	0,00
	Self-Tapping	0,500	0,07

Based on table, it can be seen that the result of the ANOVA test obtained was the value of  $\rho$ -value of self-tapping techniques with *finger handheld relaxation* technique of 0.07,  $\rho$ -value of self-tapping technique with control of 0.03 and  $\rho$ -values between *finger handheld relaxation* technique finger with control was 0.00.

Based on the above results, it can be concluded that there was an influence between self-tapping on dysmenorrhea pain with a value of  $\rho$ -value 0.03 and

there was an influence between *finger handheld relaxation* techniques on dysmenorrhea pain with a value of  $p$ -value of 0,000. Based on the ANOVA test results, it can also be seen that the *finger handheld relaxation* technique was not more effective than self-tapping towards dysmenorrhea pain due to the  $p$ -value of 0.07 or ( $0.07 > 0.05$ ).

Primary dysmenorrhea pain levels before and after self-tapping, according to the theory, pain is an unpleasant sensory and emotional experience and is associated with tissue damage, both actual and potential damage. It is very subjective because the feeling of pain is different in each person in terms of scale or level and only that person can explain or evaluate the pain they experience [6]

Generally, dysmenorrhea pain arises due to endometrium producing prostaglandin F<sub>2</sub> which causes movement of smooth muscles. If an excessive amount of prostaglandin is released into the bloodstream, it will cause pain during menstruation [7] In line with research conducted by Sirait (2018), it shows that dysmenorrhea sufferers with mild pain scale were 8 people (32.0%) and dysmenorrhea sufferers with moderate pain scale were 17 people (68.0%), while patients with severe dysmenorrhea were nothing. Research conducted by researchers, began by interviewing respondents about the experience of perceived dysmenorrhea pain, then the researcher gave a sheet of procedures for implementing self-tapping techniques and demonstrated them and provided a coherent explanation. Then the researchers asked respondents to measure the scale of dysmenorrhea pain felt by the respondent before (pretest) self-tapping technique was done by using the Numeric Rating Scale (NRS). In theory, self-tapping therapy is beneficial for reducing pain. Because being comfortable is basic, so choose the rhythm and location to knock comfortably[3]

According to research conducted by Sirait (2018) shows that the number of respondents' pain scales after self-tapping was a mild pain scale of 25 people (100%) and the pain scale was nothing. Respondents with moderate pain scale were respondents with severe pain before self-tapping. After self-tapping technique, respondents stated a decrease in the level of pain felt. The lower abdomen that was previously cramping became more relaxed.

The *finger handheld relaxation* technique is an easy way to manage emotions and develop emotional intelligence. Emotions are like waves of energy flowing in the body, mind and soul. When we feel excessive feelings, the flow of energy in our body becomes blocked or blocked, so that it will produce pain or congestion. Along our fingers there are energy channels or meridians connected to various organs and emotions [4]. Grasping a finger while breathing deeply (relaxation) can reduce and heal physical and emotional tension, because the grip of the finger will warm the

points of entry and entry of energy to the meridians (energy channels) located on our fingers [5]. The relaxation response is part of a general decline in cognitive, physiological, and / or behavioral stimulation. The relaxation process also involves a decrease in pain stimulation.

According to the theory of acupuncture, each finger is a pathway for the entry of energy and is associated with certain emotions. there are many points around the fingers and palms. Based on the concept of Gate Control Theory, tactile fiber stimulation of the skin can inhibit pain signals from the same area of the body or other areas. Finger Handheld Relaxation is a light touch and massage technique, which can normalize heart rate and blood pressure, and improve the condition of relat in the body by triggering comfortable feeling through the acupuncture points on the surface of the fingers. This technique facilitates distraction and decreases sensory transmission of stimulation from the abdominal wall thereby reducing discomfort in the affected area. According to the theory, there are several ways to deal with dysmenorrhea pain where by pharmacological and non-pharmacological therapies. The way to overcome dysmenorrhea is by resting, sleeping, drinking herbal medicine, taking medicine, and there are also those who treat dysmenorrhea by drinking warm tea, smeared with eucalyptus, tailbone stretches and compressed with hot water [8] and [1].

Most of the research respondents in the control group in dealing with dysmenorrhea in accordance with the theory. Before given pain relief, most respondents mentioned that the pain felt was sometimes quite severe. Respondents felt a contraction in the lower abdomen.

In this study, the control group was not given an intervention or there was no treatment at all. Thus, respondents who usually use pain-reducing, in the control group did not use pain-reducing at the time the dysmenorrhea appeared.

The purpose of self-tapping is to eliminate physical tension, provide a feeling of comfort and new energy, reduction of physical pain and fatigue, reduction of physical stress symptoms, the activation of the parasympathetic nervous system and an increase in the hormone serotonin [3]. Self-Tapping mechanism in order that the pain can reduce because according to recent research conducted at Toho University in Japan about the effect of tapping therapy on the hormone serotonin shows the results of tapping therapy can increase the hormone serotonin. Serotonergic (5-HT) neurons are known to play a role in relieving anxiety, pain, tension and depressive symptoms in humans [9]. Self-Tapping or Tapping Touch is a therapy that involves rhythmic behavior, namely by doing rhythmic touch using the right and left fingers pads in turn. The presence of these rhythmic movements causes an increase in serotonin secretion.

The effect of self-tapping on decreasing the level of dysmenorrhea pain, where pain level measurements were made before and after doing self-tapping. Based on the Wilcoxon test result, there is a significant effect of self-tapping on the decrease in the level of dysmenorrhea pain.

The results of this study are supported by the results of research conducted by Arita at the Toho University Medical Department, that there was a significant increase in serotonin levels between before and after self-tapping therapy. In addition, to assess psychological effects, measurements were carried out using the *Profile of Mood States* (POMS) and *Visual Analog Scale* (VAS) parameters. The results showed that there was a reduction in anxiety, fatigue, confusion, stress, and pain [3]

According to research conducted by Akbar, Lismidiati & Santi (2017), it showed that there was a significant difference for pain scores before and after self-tapping with  $p$ -value  $<0.01$ . On the other hand, the results of other studies that support as conducted by Sirait (2018) revealed that self-tapping effectively reduced the level of dysmenorrhea with  $p$ -value = 0,000. In this study, because the  $p$  value was 0,000 less than  $<0.05$ , it could be concluded that "Ha was accepted", meaning that there was difference before and after self-tapping. Therefore, it can be concluded also that there was an effect of self-tapping on reducing the level of primary dysmenorrhea pain in nursing students at Harapan Bangsa University. Difference in levels of primary dysmenorrhea pain before and after Finger Handheld Relaxation was carried out in Nursing Students at Harapan Bangsa University.

Based on research, the value of  $p$ -value was 0.00 to reduce pain. The Finger-Grip Relaxation Technique is effective in reducing sharp pain and providing pleasant sensations that counteract discomfort during contractions or between contractions [10]. That way this pain impulse can be blocked by giving a stimulus to a large diameter nerve that causes the Gate Control to be closed and the pain stimulus cannot be transmitted to the cerebral cortex. Statistical test results showed that there was a significant difference in the reduction in pain levels before the intervention between the treatment and control groups with a  $p$  value of 0,000. The treatment group produced a mean rank of 2.43 and the control group produced a mean rank of 4.67. Thus, it can be concluded that there was a significant difference in the level of dysmenorrhea pain prior to intervention between the treatment group and the control group, where in the treatment group the pain level was higher than the group control. According to the theory, there are eleven steps in self-tapping technique: jaw tapping, cheek pat, temple tapping (temple), forehead clap, head tapping, tapping the back of the head, tapping on the neck and shoulders, tapping the collarbone and chest, tapping the stomach, tapping

the lower part of the back and placing the hand on the lower abdomen [3]

Research conducted by Akbar, Lismidiati & Santi (2017), to compare pain reduction in the intervention group and the control group, showed the results that self-tapping intervention was more effective in reducing the level of primary dysmenorrhea pain in female students of PSIK FK UGM with a  $p$ -value  $<0.01$ . In addition, research conducted by Ulaa (2017) stated that statistically yoga and self-tapping were equally effective in reducing the intensity of primary dysmenorrhea pain with  $p$ -values of 0,000 and 0.003, respectively. From this study it can be concluded that there is a significant difference between the treatment group and the control group in decreasing the level of pain dysmenorrhea, where the treatment group is more effective in reducing pain than in the control group. The Effectiveness of Self Tapping and *finger handheld relaxation* Technique towards dysmenorrhea pain in the second semester Nursing Students at Harapan Bangsa University. Based on the research  $p$ -value (0.28), both have differences with the control group in reducing pain. *finger handheld relaxation* technique and self-tapping were found to be equally effective towards dysmenorrhea pain. Direct forms of massage such as counter pressure are very effective in dealing with abdominal pain during dysmenorrhea. Counter pressure can overcome sharp pain and provide pleasant sensations that fight discomfort during contractions or between contractions [10]. That way this pain impulse can be blocked by providing stimulation to large diameter nerves which causes the Gate Control to be closed and pain stimulation cannot be transmitted to the cerebral cortex [11]

#### IV. CONCLUSION

The mean score of dysmenorrhea pain in Nursing students in the second semester before was 5.42 and decreased after self-tapping to 2.46 with a  $p$  value of 0.00. The mean score of dysmenorrhea pain in Nursing students of the second semester before was 4.50 and decreased after the *finger handeld relaxation* technique was 2.33. with a  $p$ -value of 0.00. SelfTapping effectively reduced dysmenorrhea pain in Semester II Nursing students with a value of  $p$ -value 0.00. Finger Handheld Relaxation Technique is effective to reduce dysmenorrhea pain in the second semester Nursing students with a  $p$ -value of 0.00. *finger handheld relaxation* Technique and self-tapping were found to be equally effective towards dysmenorrheal pain.

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