

# The Effect Of Back Massage Therapy On Sleep Quality Of The Elderly At The Puskesmas Tanjung Medan, Labuhan Batu Selatan Regency In 2021

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## ABSTRACT

Massage has many benefits on the human body system such as reducing muscle pain, on the cardiovascular system can increase circulation and stimulate blood flow throughout the body, can also stimulate skin cell regeneration and help in the body's barrier, as well as its effect on the nervous system can reduce the risk of impaired sleep quality. The purpose of this study was to determine the effect of back massage therapy on sleep quality in the elderly at the Tanjung Medan Health Center in 2022. This type of research is a quantitative study with pre-experimental research methods. The population in this study were all children who were circumcised in August in the Fathiyah Husada Medical Center. Sampling technique with purposive sampling, the number of samples as many as 15 people. The instrument used is the questionnaire sheet family sleep quality and observation sheets, namely SOP) Standard Operating Procedures. Data analysis was carried out with univariate and bivariate using the Wilcoxon test. The results of the study that Support System Good families reach 12 families (57.1%), therefore the majority in the Family Support System are "Good". Child's anxiety level mild majority as many as 9 respondents (42.9%). Statistical test results with Wilcoxon's test Back Massage Therapy on Sleep Quality in the Elderly in Tanjung Medan Health Center in 2022 value is obtained. of 0.05. The conclusions of the research are: The Effect of Back Massage Therapy on Sleep Quality in the Elderly at Tanjung Medan Health Center in 2022. It is hoped that the research site will further improve the quality of service and maintain it.

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## 1. Introduction

The increase in life expectancy occurs in both developed and developing countries, including Indonesia. Currently, worldwide the number of elderly people is estimated at 500 million with an average age of 60 years and it is estimated that by 2025 it will reach 1.2 billion. Developed countries such as the United States, the increase in elderly people is estimated at 1,000 people per day in 1985 and it is estimated that 50% of the population is over 50 years old, so the term Baby Boom in the past changed to "Elderly Population Explosion". (Wake Up, 2019).

Indonesia is a country that ranks fourth in the number of elderly people after China, India and America. In the 2010 population census, data on the number of elderly people increased significantly. If in the 1970s, the number of elderly people was only about four percent of the total population, now it has reached almost 10 percent of the total population (Coordinating Ministry for People's Welfare, 2014). The 2010 Central Statistics Agency (BPS) survey found that the number of elderly people in Indonesia was 23,992,553 (9.77 percent of the total population). It is predicted that the number of elderly people will increase to 28,833,879 people (11.34 percent of the total population) in 2020 (Padila, 2015). Wahyuningsih (2014) states that the five provinces with the highest number of elderly

people in Indonesia are: DI Yogyakarta, East Java, Central Java, Bali and West Java. East Java Province ranks second most after DI Yogyakarta with the percentage of the elderly, which is 9.36 percent of the total population. Jember Regency itself is a district in East Java Province is the second largest after Malang Regency according to the number of elderly people. Data from the Central Statistics Agency (2010) showed that in the 2002 population census in Jember Regency, the number of elderly people with an age range of 55-64 years was 5,469 people and the elderly with age > 65 years. of 3,682 people.

Problems for the elderly in health care: only 5% are managed by institutions, 25% of all prescription drugs are for the elderly (Akhriansyah, 2019). In 2011 the Coordinating Ministry for People's Welfare stated that the large number of elderly people in Indonesia must be handled as a whole by taking into account the needs of the elderly. The basic physiological needs of humans, including the elderly that must be met, are hygiene, nutrition, comfort, oxygenation, electrolyte fluids, urinary elimination, faecal elimination, and sleep. The basic needs that are often not realized are the need for rest and sleep.

The aging process makes it easier for the elderly to experience sleep disorders, in addition to causing normal changes in the elderly's sleep and rest patterns (SUWANDA, 2020). Individually, the influence of the aging process also causes various problems, both physically, biologically, mentally and socio-economically (Rahmani & Rosidin, 2020). This causes the elderly to easily experience stress and depression, which will have an impact on the elderly's sleep. The elderly are more easily awake by internal or external stimulation, changes in the circadian cycle and changes in hormonal conditions also cause the biological clock of the elderly to be shorter, the sleep phase is more advanced, so that the elderly start sleeping earlier and wake up earlier too. (Khoironi, 2020).

Sleep is a state when the recovery process occurs for the body and brain and is very important for achieving optimal health (Rizkiana, 2019). The need for sleep is a primary need that is a basic requirement for human survival (Asmadi, 2016). The need for sleep at the age of 60 years is six and a half hours and at the age of 80 years is 6 hours (Ainun et al., 2020). Normal sleep involves two phases, namely rapid eye movement (REM) and non-rapid eye movement (NREM) sleep. During NREM, a person goes through four stages during the sleep cycle. Stages one and two are characteristic of shallow sleep and a person wakes up more easily. Stages three and four are deep sleep and difficult to wake up (Maryaningsih & Sulaiman, 2020).

Changes in normal sleep in the elderly is that there is a decrease in NREM three and four, the elderly have almost no stage four or deep sleep. Changes in the sleep pattern of the elderly are caused by changes in the neurological system which physiologically will decrease the number and size of neurons in the central nervous system. This causes the function of neurotransmitters in the neurological system to decrease, so that the distribution of norepinephrine which is a substance to stimulate sleep will also decrease. The elderly who experience physiological changes in the neurological system cause sleep disturbances (Vera et al., 2020).

Based on the results of a preliminary study conducted by researchers, information was obtained from clinical health workers at the Jember Social Institution for the Elderly (PSLU) who said that the elderly in the Jember PSLU numbered 140 elderly people with an age range of 60-90 years. The characteristics of the elderly at UPT PSLU Jember are divided into three namely independent care, partial care, and total care. The number of elderly with self-care is 70 elderly. Problem Health problems that occur in the elderly are not only physical problems but also psychological problems. Physical health problems experienced by the elderly such as hypertension, rheumatoid arthritis, itching, and stroke. Psychological problems that occur in the elderly include dementia, stress, loneliness and sleep quality disorders.

These changes are normal as long as the sleep quality of the elderly is good, but on the contrary if the sleep quality of the elderly is disturbed it will cause other health problems that are dangerous for the elderly. (Gustiyaditi, 2020). The effects of poor sleep quality in the elderly are causing frequent sleepiness during the day, forgetting quickly and having trouble remembering things, not concentrating on doing something, not concentrating on doing a job, lack of enthusiasm, often getting angry and irritable, puffy eyes, and easily distracted. suffer from disease (Krisnayanti, 2020).

Management of poor sleep quality can be divided into two, namely pharmacological and non-pharmacological. Pharmacologically, by giving sleeping pills from the benzodizepine, chloral hydrate, and Promethazine (Phenergen) class. These hypnotic drugs are very effective in speeding up the

onset of sleep onset, prolonging sleep, and reducing the frequency of waking. However, this drug causes negative effects, including leaving residual effects of the drug, namely nausea and drowsiness during the day, and causing people with sleep disorders to become addicted to drugs so that good sleep quality will not be achieved. For this reason, this drug should be given in the smallest possible dose, in the shortest possible time (Lotu, 2020).

Non-pharmacological management is currently highly recommended, because it does not cause side effects and can make the elderly to be able to take care of their own health. Some independent actions that can be taken by nurses are reducing environmental distractions, providing activities during the day as indicated, teaching deep breathing relaxation techniques or progressive muscle relaxation, and doing back massage (Lanywati, 2014). According to the National Institute of Health (NIH), complementary therapies to treat sleep disorders in the elderly are categorized into 5, namely 1.) Biological Based Practice: herbs, vitamins and other supplements. 2.) Mind body techniques: meditation. 3.) Manipulative and body based practice: Massage (Massage). 4.) Energy therapies: magnetic field therapy. 5.) Ancient medical systems: traditional chinese medicine, ayurvedic, acupuncture (Nugroho, 2020).

*Massage* Massage can be interpreted as a massage that has been perfected with the sciences of the human body or mechanical hand movements against the human body by using various forms of grip or techniques. (Suriyani, 2018). Back massage therapy is a healing effort that is safe, effective, and without side effects, and can be done by health workers or other people who have been equipped with back massage knowledge. Back massage is a technique that has long been used in nursing to promote relaxation and rest. Research shows that back massage has the ability to produce a relaxation response (Oktiviani Shinta et al., 2019).

## 2. Research methods

### 2.1 Types of Research and Research Design

This type of research is a quantitative research with pre-experimental research methods according to (Sugiono, 2010) the results are the dependent variable not solely influenced by the independent variable. The design of this study used a Pre-Experiment with One Group Pre-Post test design.

### 2.2 Research Location and Time

The location of the research was carried out at the Tanjung Medan Health Center, the reason was that it had never been studied about "The Effect of Back Massage Teragi on Sleep Quality in the Elderly at Tanjung Medan Health Center", there were problems with sleep pattern disorders in the elderly, had respondents, met the criteria for the problem and could be reached. by researchers. The time of this research will be carried out from February to April 2022.

### 2.3 Population and Research Sample

The population is a generalization area consisting of objects/subjects that have certain qualities and characteristics that are applied by researchers to be studied and then drawn conclusions (Sugiyono, 2014). represent the entire population (Notoatmodjo, 2012). The population of this study was the number of elderly with self-care who participated in the activities of the puskesmas for the elderly, namely 107 elderly and this data was obtained from the results of data recording by the Tanjung Medan Health Center in 2021. Sample That is, if the subject is less than 100, it is better to take all of them so that the research is a population study, but also with a large population, 10-15% or 20-25% or more can be taken. So to determine the number of samples in this study, the percentage formula for 10% of 107 elderly who did self-care and participated in the activities of the puskesmas was used, the number of samples in this study was 15 elderly.

## 3. Results and Discussion

### 3.1 Research Results

#### 1. Demographic Data

Demographic data in this study include gender, age and occupation. The demographic characteristics of the research respondents were obtained as follows:

TABLE 1  
CHARACTERISTICS OF RESPONDENTS AT TANJUNG MEDAN PUSKESMAS, LABUHAN BATU SELATAN REGENCY IN 2022

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No	Characteristics of Respondents	Frequency	Percentage (%)
1	<b>Age</b>		
	60 -70	1	6.7
	71 -80	3	20
	81-90	11	73.3
	Amount	15	100
2	<b>Gender</b>		
	Man	15	100
	Woman	-	
	Amount	15	100
3	<b>Education</b>		
	SD	5	33.3
	JUNIOR HIGH SCHOOL	6	40.0
	SENIOR HIGH SCHOOL	3	20
	S1	1	6.7
	Amount	15	100
4	<b>Work</b>		
	Retired	4	26.7
	Laborer	-	-
	Farmer	3	20.0
	Doesn't work	8	53.3
	Amount	15	100

Based on the table, it is known that the characteristics of the research respondents based on the age of the majority aged 81-90 years amounted to 11 people with a percentage of 73.3%, the gender of the majority was male as many as 15 people (100%), and for elementary level education 5 people (33.3%), junior high school 6 people (40.0%) and for bachelor degree amounted to 1 person (6.3%), while for work the majority of the elderly at the Tanjung Medan Public Health Center no longer work. Meanwhile, in this study, demographic data is only used to fill in respondent's data and not to be studied.

## 2. Univariate Analysis

TABLE 2  
FREQUENCY DISTRIBUTION OF PRE-TEST SLEEP QUALITY OF THE ELDERLY AT PUSKESMAS TANJUNG MEDAN

		Pre-Test			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very good	4	26.7	26.7	26.7
	Pretty good	2	13.3	13.3	40.0
	Bad Enough	6	40.0	40.0	80.0
	Very bad	3	20.0	20.0	100.0
	Total	15	100.0	100.0	

Based on the table above, it is known that the Pre-Test frequency distribution of elderly sleep quality for the Very Good category is 4 people (26.7%), Good Enough 2 people (13.3%), Bad Enough 6 (40.0%) and Very Bad 3 people (20.0%).

TABLE 3  
POST TEST FREQUENCY DISTRIBUTION OF SLEEP QUALITY IN THE ELDERLY AT TANJUNG MEDAN PUSKESMAS

		Post Test			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very good	11	73.3	73.3	73.3
	Pretty good	3	20.0	20.0	93.3
	Bad Enough	1	6.7	6.7	100.0
	Total	15	100.0	100.0	

Based on the table above, it is known that the distribution of the Post Test frequency of elderly sleep quality for the Very Good category is 11 people (73.3%), Good Enough 3 people (20.0%), and Bad Enough 1 person (6.7%).

TABLE 4  
THE EFFECT OF BACK MASSAGE THERAPY ON SLEEP QUALITY OF THE ELDERLY AT TANJUNG MEDAN PUSKESMAS, LABUHAN BATU SELATAN REGENCY

No	Respondent	mean	Std deviation	P value
1	Before the Back Massage	2.53	1.125	= 0.05
2	After doing the back massage	1.33	,617	

From the table above, it shows that from the results of tests carried out on back massage, a P Value of 0.05 was obtained which means sig value, <0.05 then H1 is accepted, meaning that there is a significant difference between before being given the intervention and after being given back massage on sleep quality. respondents, it can be said that there is an effect of back massage on the sleep quality of the elderly at the Tanjung Medan Health Center, Labuhan Batu Selatan Regency.

### 3.2 Discussion

In In this study, the characteristics of 15 respondents based on gender were the majority of the total male as many as 15 respondents (100%), from the age of the majority of respondents aged 81-90 years as many as 11 respondents (73.3%), and for the level of education the majority of junior high school as many as 6 people (40.0%) while for the elderly many do not work.

However, in this study, the characteristics of the respondents were not examined for their influence on the research variables, so it cannot be explained whether the characteristics of these respondents had any influence in this study.

#### 1. Quality of sleep for the elderly at the Tanjung Medan Health Center, South Labuhan Batu Regency before being given back massage

The results of the frequency distribution before being given back massage to the elderly at the Tanjung Medan Health Center, Labuhan Batu Selatan Regency, it was found that for the sleep quality of the elderly in the Very Good category as many as 4 people (26.7%), Good Enough 2 people (13.3%), Fairly Bad 6 (40.0%) and Very Bad 3 people (20.0%), therefore the elderly who experience quite bad sleep quality are still more than good,

In the elderly there is also a change in sleep quality due to sleep disorders in the form of insomnia due to a decrease in the production of the hormone melatonin, where the function of the hormone melatonin is to cause changes in sleep patterns which result in decreased sleep quality in the elderly. related to the decreased ability of organs in the body, such as the heart, lungs, and kidneys. This decrease causes the body's resistance and immunity to also have an effect.

This is also in line with the opinion (Maas, 2011) The aging process makes it easier for the elderly to experience sleep disturbances, in addition to causing normal changes in the elderly's sleep and rest patterns. Individually, the influence of the aging process also causes various problems, both physically, biologically, mentally and socio-economically.

(Prayitno, 2012). also stated that the elderly are very easy to experience stress and depression, which will have an impact on the sleep of the elderly. Elderly is easier to wake up by internal or external stimulation, changes in the circadian cycle and changes in hormonal conditions also cause the biological clock of the elderly to be shorter, the sleep phase to be more advanced, so that the elderly start sleeping earlier and wake up earlier.

From the results of observations made by researchers on the elderly in the working area of the Tanjung Medan Public Health Center, Labuhan Batu Selatan Regency, that the elderly The elderly

claimed to experience sleep quality disorders which made it difficult to sleep at night. The elderly claimed that they often slept at night and woke up too early, the elderly also stated that they did not feel refreshed when they woke up in the morning. The average sleep quality of the elderly who experience quality disturbances is about 5 hours every day, if the elderly have experienced sleep disorders, they tend to feel unmotivated in carrying out activities.

## **2. Quality of sleep for the elderly at the Tanjung Medan Health Center, South Labuhan Batu Regency after being given a back massage**

Based on table 4.2 above, it is known that the Post Test frequency distribution of elderly sleep quality for the Very Good category is 11 people (73.3%), Good Enough 3 people (20.0%), and Bad Enough 1 person (6.7%) . Based on the analysis of the research data obtained a significant increase in the elderly studied. Giving back massage treatment has an effect on the sleep patterns of the elderly at the Tanjung Medan Health Center, Labuhan Batu Selatan Regency. The results of the Wilcoxon test showed that there was an effect of back massage on the sleep quality of the elderly at the Tanjung Medan Health Center, Labuhan Batu Selatan Regency.

The results of the study on the degree of sleep quality of the elderly before being given back massage therapy in the elderly, the elderly who experienced poor sleep quality than the elderly who had good sleep quality and after being given back massage the elderly who experienced poor sleep quality improved their sleep quality. There is a change in the quality of good sleep due to back massage therapy which can provide comfort during sleep, marked by the statement of respondents stating that back massage makes a difference in their sleep quality, so that sleep disorders such as insomnia can be reduced.

According to Triyadini, (2014), one of the direct benefits of back massage is complete relaxation and calm that can provide comfort while sleeping. Back massage can also trigger the release of endorphins, brain chemicals (neurotransmitters) that produce feelings of well-being.

According to Sudoyo, (2017). In the elderly there are also changes in sleep, namely sleep disorders in the form of insomnia which causes decreased sleep quality due to a decrease in the production of the hormone melatonin, where the function of the hormone melatonin is to cause drowsiness and sleep.

Basically, back massage provides stimulation to the motor nerves, causing reflexes. Massage is also activating when given with rapid stimulation in a short time. Back massage with moderate speed for a longer time can eliminate or reduce pain or provide recovery to the organs used after doing activities or sports. Gentle back massage provides a calming effect, besides that it can also maintain the condition of the nerves. Especially the big message on the recovery of peripheral nerve conditions.

*Massage* in this case it is a manipulation of soft tissue structures that can calm and reduce psychological stress by increasing endogenous morphine hormones such as endorphins, enkephalins, and dynorphins while reducing stress hormone levels such as cortisol, norepinephrine, and dopamine (Best et.al., 2018). . Physiologically, massage has been shown to reduce heart rate, increase blood pressure, increase blood and lymph circulation, reduce muscle tension, increase joint range of motion and reduce pain.

## **3. Quality of sleep for the elderly at the Tanjung Medan Health Center, Labuhan Batu Selatan Regency before and after being given back massage**

The results showed that there was a significant difference between the average back massage on the sleep quality of the elderly before and after the intervention on the respondents.2.53) and SD (1.125), whereas after back massage in the elderly: mean (1.33) and SD (.617) so that the difference in Mean - 1.20, from this brief explanation we can conclude that from giving back massage to the sleep quality of the elderly, there is a decrease in the number of poor sleep quality in the elderly to good sleep quality, so there is a significant effect of back massage on the quality of sleep. elderly sleep.

In the respondents studied for the quality of sleep in the elderly, Wilcoxon statistical tests have been carried out on the quality of sleep in the elderly with a significance level of (a) (0.05) with a (p) value obtained of 0.005, because the (p) value is smaller than the (a) value. then H1 is accepted, which means that there is a significant effect of back massage on the sleep quality of the elderly at the Tanjung Medan Health Center, Labuhan Batu Selatan Regency in 2022.

This research is in line with that conducted by Aziz (2014), with the title the effect of back massage therapy on the sleep quality of the elderly in the Pucang Gadaning Social Rehabilitation Unit,

Semarang. The population in this study amounted to 115 elderly, side taking technique is purposive sampling with a sample of 34 respondents. Analysis using t-test, the results showed that the mean in the post-treatment was 0.429, while the post-treatment group was .6.00. By using an independent post-treatment t-test, the results obtained p value of 0.030, when compared with 0.05, it means that there is an influence between the two variables.

The results of the bivariate analysis of research from Ariska (2020), using the Wilcoxon test, obtained a Z value of -3.739 and a significance value of 0.001 ( $p < 0.05$ ). The results of this statistical test can be concluded that there is an effect of back massage on sleep quality in the elderly in the gender village of Tumenggung district, Temanggung district, Central Java.

Basically massage provides stimulation to the motor nerves, causing reflexes. Massage is also activating when given with rapid stimulation in a short time. Massage at medium speed with a longer time can eliminate or reduce pain or provide recovery to the organs used after activities or sports.

*Massagewhich* gently provides a calming effect, in addition it can also maintain the condition of the nerves. Especially the big message on the recovery of peripheral nerve conditions. Massage in this case is a manipulation of soft tissue structures that can calm and reduce psychological stress by increasing endogenous morphine hormones such as endorphins, enkephalins, and dynorphins while reducing stress hormone levels such as cortisol, norepinephrine, and dopamine (Best et al., 2018). ). Physiologically, massage has been shown to reduce heart rate, increase blood pressure, increase blood and lymph circulation, reduce muscle tension, increase joint range of motion and reduce pain.

#### 4. Conclusion

Based on the results of the study entitled the effect of back massage on the sleep quality of the elderly at the Tanjung Medan Health Center, Labuhan Batu Selatan District by using the Wilcoxon test and obtained a significant influence which shows that there is an influence between back massage on the sleep quality of the elderly and answers the research objectives. The quality of sleep for the elderly at the Tanjung Medan Health Center, Labuhan Batu Selatan Regency is quite bad, before being given a back massage. The quality of sleep for the elderly at the Tanjung Medan Health Center, Labuhan Batu Selatan Regency is very good, after being given a back massage. There was a change in the quality of sleep for the elderly at the Tanjung Medan Health Center, Labuhan Batu Selatan Regency after being given a back massage, with a p value of 0.05.

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