

The Effect of Cutaneous Stimulation: Slow Stroke Back Massage on Sleep Quality Improvement in Elderly

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Abstract--- *The elderly are susceptible to declining sleep quality. There are several causes of decreased sleep qualities such as; increasing sleep latency, decreasing sleep efficiency, waking up earlier, and unable to back to sleep. One of the non-pharmacological methods, Cutaneous Stimulation: Slow Stroke Back Massage, helps the patient to increase their sleep quality. Moreover, it represents a positive experience of the individual to improve relaxation and sleep quality. This research used a quasi-experimental design. There were 32 elderly who have sleep disorders, become object research of this study. These object research were categorized into two groups (treatment & control). This researches used Total Sampling's data collection method. Moreover, it used cutaneous stimulation: Slow Stroke Back Massage as an independent variable and improvement of sleep quality as the dependent variable. Besides that, this research uses the Pittsburgh Sleep Quality Index (PSQI) questionnaire to collect the data. Furthermore, it used the Wilcoxon Sign Rank Test and Mann Whitney Test to analyze significance level $\alpha \leq 0.05$. The result of statistic obtains value $p=0.001$ ($0.001 < 0.05$) in Wilcoxon Sign Rank Test and value $a=0.000$ ($0.000 < 0.05$) in Mann Whitney Test. The final analysis shows that cutaneous stimulation: Slow Stroke Back Massage affects the improvement of sleep quality an elderly.*

Keywords--- *cutaneous stimulation, elderly, sleep quality, slow stroke back massage*

I. INTRODUCTION

The process of aging is a natural process that cannot be avoided and runs continuously. Everyone will experience the process of growing old [1]. Old age is a period of life in which a person will suffer a setback physical, mental, and social gradually characterized by a decrease in the body's ability to adapt to environmental stress decreased ability of various organs, functions, and body systems [2].

As long as we age experience, some changes in sleep patterns are typical. Sleep complaints are generally in the form of bedtime less so awake at night, waking up early, drowsiness during the day, and often sleep for a while [3]. Sleep problems include insomnia, hypersomnia, narcolepsy, sleep apnea, snoring, and delirious [4]. Many factors affect the quality of sleep. Physical factors include pain, and psychological factors include depression, anxiety, fear, and mental stress. Environmental factors include noise, population, reduction in personal freedoms and too crowded [5].

Based on the research from Rosmalawati, 12,459 respondents, it is as much as 7,220 people, or 58.18% have sleep disorders. Elderly people complain more difficult to initiate sleep. A total of 40% often wake up at night, as many as 30% is difficult to start the bed, and the rest are other sleep disorders [6]. Indonesia is a country that entered the era of the population aged over 60 years, amounted to about 7.18%. Approximately 20% to 50% of older adults report sleep disturbance, and about 17% have serious sleep disorders each year [7].

The results of observations of 120 there are 50 people who experience sleep problems were done by referring to

complaints of insomnia. Several therapies have been applied is foot reflexology therapy using tools, light therapy with a bed SOQI bed massage tables that combine three far infrared rays with Chi machine. The results obtained are less satisfactory because there are many elderly people who still have trouble sleeping at night.

The sleep cycle in the body is regulated by a special mechanism called the circadian rhythm. Circadian rhythm literally interpreted as a cycle that lasts about 24 hours. Circadian rhythm acts as the human biological clock. Circadian rhythm located in Supra Chiasmatic Nucleus (SCN), which functions as a regulator circadian rhythms in the body. Changes in sleep patterns in the elderly due to CSN changes that affect the sleeping arrangements. Aging can reduce the sensitivity to time maintain the rhythm circadian [8].

Several hormones and neurotransmitters in charge to control the rhythm of circadian and set bedtime. Physically, the sleep cycle influenced by hormones such as cortisol and melatonin. In elderly melatonin, secretion decreases. The melatonin hormone controls the circadian rhythm, secretions especially at night associated with drowsiness. A decline in the elderly circadian cycles that promote the biological clock is a shorter and more advanced sleep phase [9].

Complementary therapies can be used as a nursing intervention that can affect sleep and woke up the elderly who experience some sleep disturbance [10]. This form of therapy is complementary, which includes exercise, light therapy, massage therapy, and dietary supplements [11]. One non-pharmacologic therapy that can be used to increase comfort and improve sleep quality is Cutaneous Stimulation: Slow- Stroke Back Massage [12]. Cutaneous Stimulation: Slow-Stroke Back Massage is a back massage action with swabs gently for 3-10 minutes. Massage and touch, sensory integration techniques that affect the activity of the autonomic nervous system [8]. Touch directly with Cutaneous Stimulation: Slow-Stroke Back Massage is perceived as a pleasant experience to promote relaxation and sleep [12].

Based on the sensory integration mechanism that affects nerve autonomy, the author interested in conducting research on Cutaneous Stimulation intervention: Slow-Stroke Back Massage to see improved quality of sleep of the elderly.

II. METHODS

This research method was a quasi-experimental approach to the control group pre-posttest design with the target population of elderly who have a sleep disorder. Samples were obtained as many as 32 respondents, using total sampling with a sample set of criteria. Respondents were divided into two groups with their respective distribution of 16 respondents in the intervention group and 16 respondents in the control group.

Variables included in the study was the quality of sleep as an independent variable and Cutaneous Stimulation: Slow-Stroke Back Massage as the dependent variable. The research instrument used Pittsburgh Sleeping Quality Index (PSQI) questionnaire Indonesian version. This study has implemented the ethical principle and received consent from participants.

III. RESULTS

Following is the result of sleep quality before and after the Cutaneous intervention Stimulation: Slow-Stroke Back Massage.

Table 1. Elderly PSQI scores before and after cutaneous stimulation: slow-stroke back massage.

Criteria	Treatment				Control			
	Before		After		Before		After	
	n	%	n	%	n	%	n	%
Good	0	0	11	69	0	0	0	0
Less	16	100	5	31	16	100	16	100
n	16	100	16	100	16	100	16	100
<i>Wilcoxon Signed Rank Test</i> p = 0.001					<i>Wilcoxon Signed Rank Test</i> p = 1.000			
<i>pre control -pre Intervention</i>					<i>Post control -pre Intervention</i>			
<i>Mann Whitney Test</i> p = 0.000								

Based on Table 1 note that all treatment groups had poor sleep quality before being given Cutaneous Stimulation:

Slow-Stroke Back Massage, After being given a cutaneous stimulation: Slow-Stroke Back Massage before going to sleep at night, sleep quality percentage change for the better treatment groups 69% and less than 31%. There is no change in the quality of sleep in the control group that was not given Cutaneous Stimulation: Slow-Stroke Back Massage before bedtime.

IV. DISCUSSION

After being given a cutaneous stimulation: Slow-Stroke Back Massage before sleeping three times every two days a week earned sleep quality changes in the treatment group from a lack of sleep quality to be good, 11 respondents from 16 respondents. Male respondents who experience changes in sleep quality be good quality sleep as many as five people and female respondent's as many as six people. Whereas the control group did not change the quality of sleep after the intervention, with details of the treatment group of 16 respondents, have poor-quality sleep.

Most respondents decreased scores PSQI and feel satisfied with his both quantitatively and qualitatively. Having given Cutaneous Stimulation: Slow-Stroke Back Massage respondents were able to start to sleep early and largely able to maintain sleep until 05.00 pm. Another positive impact of this therapy is the reduced habit of going to the toilet and wake up at night, while the control group showed that there was no significant change [13].

Researchers found an increase in sleep quality in the elderly is affected by cutaneous stimulation: Slow-Stroke Back Massage as an application of one type of complementary therapies that can improve the sleep quality of the elderly. The control group did not experience changes in sleep quality to be good because it was not given the cutaneous intervention Stimulation: Slow-Stroke Back Massage. Respondent characteristics such as gender, age, duration of living in mobile homes, and habits before bedtime did not affect sleep quality changes in the treatment group and the control group because researchers have selected two study groups that are homogeneous.

Respondents who obtained cutaneous stimulation interventions: Slow-Stroke Back Massage feel more comfortable and relaxed after the therapy. They could feel the impact of interventions persist, in this case, changes in sleep patterns and the quality of their sleep. The majority of respondents who initially had very less quality sleep and less experienced improvement be of good quality. Difficulty to start to sleep more than 30 minutes is reduced to be faster or can immediately begin to sleep after a given intervention. Sleep duration responder increased to 5 to 6 hours. Better sleep efficiency, sleep disturbances diminished night, no use of drugs, and be able to do activities during the day better. The sleep quality is important because it will affect your mood. Support families and people around also affect the quality of sleep of the elderly [14].

Cutaneous Stimulation scientifically: Slow-Stroke Back Massage acts in the mediation process to physical and psychological stress. Cutaneous Stimulation: Slow-Stroke Back Massage can be interpreted as a positive experience for individuals to increase relaxation and improved sleep [15]. This therapy stimulates the organ tissue is sent to the receptor, which then forwarded to the peripheral nerves leading to the HPA axis. HPA axis (hypothalamus-Pituitary-Adrenal) will provide a response to CRF (Corticotropin-Releasing Factors) so that simultaneous stress-related hormones such as cortisol and catecholamine secretion will decrease. Adrenal Medulla delta waves influence the release of neurotransmitters that stimulate the β endorphins. Ascending path Reticular Activating System to accelerate the process of NREM sleep stages, which implies the increase in perceived convenience that REM sleep stages more optimal effect on improving the quality of sleep in the elderly [16].

V. CONCLUSION

Before given Stimulation Cutaneous: Slow Stroke Back Massage majority of respondents in the fulfillment of the criteria sleepless. Respondents have subjective disturbances in sleep, impaired sleep latency, sleep disorders night, and disruption of activity in the daytime. After given Stimulation Cutaneous: Slow Stroke Back Massage majority sleep

quality score fulfillment of respondents increased to meet the needs of good sleep. Cutaneous Stimulation: Slow Stroke Back Massage can improve sleep quality in the elderly for causing relaxation and cause drowsiness.

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