

EFFECT OF CUTANEOUS SLOW STROKE BACK MASSAGE STIMULUS TO DECREASE PAIN INTENSITY IN LOW BACK PAIN PATIENTS IN PUSKESBUN DIVISION II OF PT. SUCFINDO MATAPAO SERDANG BEDAGAI

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Abstract

Low back pain (LBP) is pain, aching, stiffness that occurs in the lower back. Lower back pain is not a disease but a symptom resulting from very diverse causes. The pain can also spread to other areas such as the upper back and groin. One non-pharmacologic measure to overcome this pain is to use stimulus cutaneous slow stroke back massage. Mechanism of action of cutaneous stimulus of slow stroke back massage in reducing pain intensity is by using the principle of gate control theory and the theory of endorphins. This study aims to determine the effect of cutaneous stimulus slow-stroke back massage on pain intensity in patients with low back pain. Thus, the design of this study using quasi-experimental design with Pre and Post test Without Control. Analysis of the data by using a paired t-test at 95% confidence level. Samples were patients with LBP in puskesmas Division II PT. Sucfindo Mata Pao Bedagai Serdang, as many as seven people taken by accidental sampling. The technique of collecting data by interview and observation. Based on the analysis using a paired t-test values obtained average (mean) the intensity of pain before administration of cutaneous stimulus slow-stroke back massage 4.7 (SD = 0.76), whereas the cutaneous stimulus after the slow-stroke back massage decrease with a value of 3.3 (SD = 0.49). In addition, test results obtained by value $p = 0,000$ ($p \leq 0,05$) which shows the significant difference between before and after the intervention, with a confidence level of 95% obtained the value $t = 7.071$ ($t > 1.96$), which means that the difference can be received with an average value difference (mean) of 1.43 (SD = 0.53), in which region the difference is in the range 0.93 to 1.92. It can be concluded that the stimulus cutaneous slow stroke back massage affects the intensity of low back pain sufferers pain (LBP). Thus, nurses can use this stimulus to overcome pain as non-pharmacological measures.

Keyword: *Slow-Stroke Back Massage, Pain Intensity, Low Back Pain (LBP)*

BACKGROUND

Each individual is inseparable from the activity or work to make ends meet. Most of the activities and the work requires energy and muscle strength are large enough to cause a variety of complaints, one of which is lower back pain. Lower back pain or low back pain (LBP) is a pain, aching, stiffness that occurs below the waist area (Ismiyati, 2007). Lower back pain is not a disease but a symptom resulting from very diverse causes (Hakim, 2006).

Almost everyone has experienced low back pain. Approximately 80% of everyone in his life has experienced pain in the lower back area due to postural faults regardless of

gender, social and employment level (Cailiet, 2004).

The incidence of low back pain (LBP), almost the same in all populations throughout the world, both in developed countries and in developing countries (Shocker, 2008). From the research of Cropcord Indonesia (2004) showed that patients with LBP on male gender prevalence was 18.2% and 13.6% in women. While the population had experienced lower back pain once and more during his life between 60% to 90% (Setyohadi, 2005). According to Rice (2002) in Shocker (2008) mentions the most common causes that can lead to LBP is back muscle stiffness and spasms due to poor body activity and tense

posture. In addition, various diseases can also cause LBP such as osteoarthritis, osteoporosis, fibromyalgia, scoliosis, and rheumatism. Ismiyati (2007) stated that there was an error postural or disproportionate body movements for a long time and continuously on the muscle and fascia will cause pain ensued lumbar muscle spasm and will undergo ischemic muscle.

According to Setiawan (2008) that about 90% of all cases of LBP caused by mechanical factors, namely LBP on normal anatomic structures are overused or secondary to trauma or deformities, which cause stress or strain on the muscles, tendons and ligaments. Moreover, in terms of anatomical and functional, LBP also can be caused by abnormalities in the spine, where the spine is the support structure of the body and the head is always involved in various postures and motions so easy to crash. The absence of pain sufferers are often afraid to make a move that disrupts daily activities and can reduce productivity. In addition, the experience of pain, is enough to make the patient's frustrating to live a daily life that can interfere with the quality of life of patients. Therefore, the primary therapy is directed to deal with this pain (Potter & Perry, 2005). Pain management can be performed with pharmacological treatment and non-pharmacological therapy. Pharmacological therapy using inhibitors of cyclooxygenase (COX inhibitors) often causes side effects, namely gastrointestinal disorders (Kozier, 2004). In addition, long-term use can lead to bleeding in the gastrointestinal tract, peptic ulcer, perforation and renal impairment (Daniel, 2006). Did you mean: Guidelines AHCPR (Agency for Healthcare Policy and Research) for acute pain penatalaksanaan (1992) mentions that non-pharmacological intervention is appropriate intervention for patients who do not want to use drug therapy to overcome the pain and patients who feel anxious because they feel pain after using pharmacological therapy. Cutaneous stimulation, distraction, relaxation, guided imagery and hypnosis are examples of non-pharmacological interventions that are often used in nursing in managing pain (Potter & Perry, 2005). Stimulus cutaneous stimulation of the skin is done to relieve the pain on a scale of 6 or moderate pain by doing

massage and touch in the lower back. Massage and touch a sensory integration techniques that affect the activity of the autonomic nervous system (Mook, 2004). If people perceive touch as a stimulus to relax, then you will see the relaxation response. Relaxation is crucial in helping clients to improve comfort and free themselves from fear and stress due to illness and pain experienced are not resolved. Additionally relax also helps reduce anxiety, thereby preventing *menghebatnya* painful stimulus (Long, 2006). One type of cutaneous stimulus is massage (swabs) slowly lower back is to perform Slow-Stroke Back Massage (SSBM) for approximately 15 minutes at a speed of 60 times per minute and repeated smears every 4 hours. This massage is an act of giving comfort, which can ease the tension, relaxes the patient and improves circulation. The workings of SSBM causes the release of endorphins, thus blocking the transmission of pain stimuli (Potter & Perry, 2005). The technique for doing SSBM can be done by several approaches, one method is by rubbing the skin gently and rhythmically clients by hand, with a sweep speed of 60 times per minute. Long and soft sweep can provide peace and comfort for the patient, while the short and circular sweep tends to be more menstimulas This technique is simple and easy to do, so that every nurse and health institutions can apply to overcome the problem of pain, particularly in patients with LBP.

(Caldwell & Hegner, 2003) Advantages of SSBM is this action can be done at home, allowing patients and families to make efforts in controlling pain. This can help the independence of clients and families in managing pain, particularly for patients who are difficult to obtain medical care facilities or patients who do not want to cope with the pain by using pharmacological therapy. Besides the cutaneous stimulus SSBM no need to use special tools that require huge costs that this stimulus can be provided to the community began with the economic level on up to the public under the economic (Potter & Perry, 2005). As in plantations PT. Sucfindo Mata Pao Bedagai Serdang area that has as many as five division, based on data puskesbun 2014, the number of people in the plantation of 800 heads of households, 650 of them work as employees of the plantation workers. The interview with the Head of Mata Pao

PT.Sucfindo Puskesmas Serdang Bedagai conducted by researchers on January 6, 2014, of the total population of as many as 65 people often come for treatment to puskesmas with complaints of experiencing pain in the lower back and the more pain when doing activities such as mendodos palm.

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Results of direct observations conducted by researchers during one week in puskesmas PT.Sucfindo Mata Pao Serdang Bedagai of from 6 s / January 11, 2014 the average number of visits per day as many as 50 people and 10% of them experienced low back pain with pain scale 6 or pain being. This number does not include those who did not check into Puskesmas for several reasons, such as the condition Puskesmas far from the settlement, did not want to take medicine or work that requires them to work every day so there is no time for treatment. During this time the employee has been receiving treatment from a doctor but could not overcome the perceived low back pain, it is caused by factors not taking medication as directed by your doctor on a regular basis and the fear of chemical drugs. Accordingly the researchers wanted to examine the provision

of SSBM to decrease the intensity of pain in patients with LBP in Puskesmas Division II PT.Sucfindo Mata Pao Bedagai Serdang.

METHODOLOGY

This research is a quasi experiment (quasi-experimental), with the draft Pre and Post Test Without Control (Control yourself sendiri) that this study only intervene on a group without comparison. This research was conducted in Puskesmas Division II PT.Sucfindo Mata Pao Serdang Bedagai in January to October 2014. The population in this study were all employees in Puskesmas PT.Sucfindo Mata Pao Serdang Bedagai many as 650 people working as plantation laborers. Of the total number of employees is 65 people often come for treatment to Puskesmas with complaints experiencing lower back pain and more pain during activity mendados oil. The sample size in this study was 10% of the population are already experiencing lower back pain so that the number of samples obtained as many as seven people.

Collecting data in this study include primary data and secondary data. Primary data obtained by direct interviews with respondents using questionnaire containing questions about the experience back pain. Secondary data were obtained from medical record puskesmas PT.Sucfindo Mata Pao Serdang Bedagai such as the number of visits kepuskesmas treatment of employees, the data diseases suffered by employees and Puskesmas profile data. The data was then analyzed using univariate analysis to analyze the dependent variable LBP pain intensity before and after the intervention and bivariate analysis is a continuation of the univariate analysis to analyze the influence between two variables by conducting the tabulation and analysis of data by using a paired t-test (Dependent T-test) at the level of 95%.

RESULT

Univariate Analysis

Based on the research that has been conducted on 7 patients who had experienced lower back pain, based on the known age of the respondents who experienced low back pain an average age of 49 years with more than half are in the age range 45-48 years (57.1 %), with the sex of the respondent approximately two-thirds were women

(71.4%), all respondents have tribes Java (100%) and 100% Muslim. Approximately two thirds of respondents (71.4%) had a primary education level, and all (100%) working as employees of a plantation in Serdang PT.Sucfindo Mata Pao Bedagai.

Bivariate Analysis

Bivariate analysis aims to determine whether there is influence cutaneous stimulus Slow Stroke Back Massage to decrease the intensity of pain in patients with low back pain in Division II PT.Sucfindo Puskesmas Mata Pao Bedagai Serdang.

Pain intensity respondents before granting intervention cutaneous stimulus slow-stroke back massage measured using a scale Bourbanis for 3 days in a row every afternoon 1 times measurement. The results showed that the respondents perceived pain intensity before administration of the intervention (100%) reported moderate pain scale level 6. After respondents were given intervention cutaneous stimulus slow-stroke back massage for 15 minutes, immediately re-measurement of pain intensity using a scale Bourbanis.

The results showed that pain intensity after administration of the intervention respondents cutaneous stimulus slow-stroke back massage obtained by about two-thirds of respondents (71.4%) reported mild pain level and more than a quarter (28.6%) in moderate pain. Based on the analysis found that pain intensity score respondent before giving cutaneous stimulus slow-stroke back massage was 4.7 with SD = 0.76. While the cutaneous stimulus after a slow-stroke back massage was 3.3 with SD = 0.49. This showed a decrease in the value of pain intensity after administration of cutaneous stimulus slow-stroke back massage. To determine differences in pain intensity before and after the intervention (pre-post), researchers used statistical analysis paired t-test. Results of the analysis obtained by value $p = 0,000$ ($p \leq 0,05$) which shows the significant difference between before and after the intervention, with a confidence level of 95% obtained the value $t = 7.071$ ($t > 1.96$), which means that these differences can be accepted by value difference average (mean) of 1.43 (SD = 0.53), in which region the difference is in the range 0.93 to 1.92.

DISCUSSION

1. Intensity Pain Low Back Pain (LBP) Before Provision intervention Slow cutaneous stimulus-Stroke Back Massage Based on the survey results revealed that prior to the administration of cutaneous stimulation of slow-stroke back massage on pain of low back pain to see its effect on pain intensity, pain intensity was measured by using a pain scale Bourbanis on all respondents. The result showed that all respondents (100%) felt pain at the medium level.

Based on the results of research on demographic data of respondents found that the average age of respondents was 49 years with more than half (57.1%) were in the age range 45-48 years. Long (1996) mentions that in adulthood easier to perceive the pain of the elderly. This is due to the advanced age there is a decrease in feeling and perceiving pain caused by degenerative decline in dealer path of pain and atrophy of nerve endings, so that the elderly needed more stimulus to evoke response from the pain in adulthood. Gender approximately two-thirds of respondents (71.4%) were female. This shows that women feel pain more easily than men. Indeed mechanism of pain in each gender are equal (Long, 1996). However, Potter & Perry (2005) mentions that the man expected to be more daring and resistant to pain than women despite the situation that causes pain is the same.

All respondents (100%) working as an employee (farm workers) who use more power and a lot of activity, so it is easy to experience pain in the lower back. Bimariotejo (2009) mentions that the mechanical trauma and disruption caused because the muscles do work or perform activities with a heavy load can cause lower back pain. In addition, a job that requires standing and sitting for a long time can cause low back pain (Klooch 2006 in Shocker, 2008).

2. Pain Intensity Low Back Pain (LBP) After cutaneous administration of intervention Slow Stimulus-Stroke Back Massage After this is done stimulus cutaneous administration of slow-stroke back massage for 15 minutes immediately back pain intensity was measured using a scale Bourbanis. The results obtained are

approximately two-thirds of respondents (71.4%) experienced a decrease in pain at mild levels and more than a quarter of respondents (28.6%) experienced pain at a moderate level. These results indicate that the reduction in pain intensity value of each individual is different although given the same stimulus. This difference is due to the subjective nature of pain and very individual (Mahon, 1994 in Potter & Perry, 2005), so the response provided between an individual and the other individual is not the same, depending on the factors that influence such as age, gender, past experience and (Smeltzer & Bare, 2002) as well as the meaning of pain and coping style (Potter & Perry, 2005).

A decrease in pain intensity was associated with a reduction mechanism of gate control theory of pain, which is decreasing the intensity of pain occurs because the transmission of pain impulses are blocked by activating the A-beta fibers are abundant in the skin (Kenworthy, 2002 in Potter & Perry, 2005). These fibers will respond when performing massage on the skin gently (Guyton & Hall, 1997), so that after administration of cutaneous stimulus slow-stroke back massage decreased pain intensity. Slow-stroke back massage works by encouraging the release of endorphins, thus blocking the transmission of pain stimuli (Potter & Perry, 2005). But the endorphin levels in each individual is different so the same stimuli perceived differently by different people. These levels are controlled by genes (Guyton & Hall, 1997; Potter & Perry, 2005). This causes all the respondents experienced a decrease in pain after the stimulus cutaneous administration of slow-stroke back massage.

3. Effect of Stimulus cutaneous Slow-Stroke Back Massage Against Pain Intensity in Patients with Low Back Pain (LBP) Based on the results of statistical tests with paired t-test, found the difference in pain intensity between before and after administration of cutaneous stimulus slow-stroke back massage, where the value of the intensity of pain before administration of cutaneous stimulus slow-stroke back massage was 4.7 with SD = 0,76, while the cutaneous stimulus after the slow-stroke back massage decrease in pain intensity with a value of 3.3 with SD = 0.49.

Based on the test results of the statistical analysis paired t-test showed a significant difference, as evidenced by the value of $p = 0.000$ ($p \leq 0,05$). Based on the 95% confidence level is obtained the value $t = 7.071$ ($t > 1.96$), which means that these differences can be accepted with an average difference value (mean) of 1.43 (SD = 0.53), in which region the difference is in the range of 0.93 to 1.92. It shows that the stimulus cutaneous administration of slow-stroke back massage affects the intensity of pain in patients with low back pain (LBP). Reduction in pain intensity and a significant difference is due to the effect of stimulus cutaneous slow-stroke back massage, in the form of massage action on the back with a sweep gently for 15 minutes. With cutaneous stimulus slow-stroke back massage, can stimulate the fibers A beta are numerous in the skin and responds to a light massage on the skin so that the impulse delivered more quickly. This stimulation makes the input comes from the dominant impulse A beta fibers so that the gate closes and pain impulses can not be passed on to the cortex. The incidence of low back pain (LBP), almost the same in all population throughout the world, both in developed countries and in developing countries (Shocker, 2008). From the research Cropcord Indonesia (2004) showed that patients with LBP on male gender prevalence was 18.2% and 13.6% in women. While the population had experienced lower back pain once and more during his life between 60% to 90% (Setyohadi, 2005). According to Rice (2002) in Shocker (2008) mention the most common cause that can lead to LBP is back muscle stiffness and spasms due to poor body activity and tense posture. In addition, various diseases can also cause LBP such as osteoarthritis, osteoporosis, fibromyalgia, scoliosis, and rheumatism. Ismiyati (2007) stated that people perceive touch as a stimulus to relax, then you will see the relaxation response. Relaxation is crucial in helping clients to improve comfort and free themselves from fear and stress due to illness and pain experienced are not resolved. Additionally relax also helps reduce anxiety, thereby preventing *menghebatnya* painful stimulus (Long, 2006). One type of cutaneous stimulus is massage

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continuation of the univariate analysis to analyze the influence between two variables by conducting the tabulation and analysis of data by using a paired t-test (Dependent).

CONCLUSIONS AND SUGGESTIONS

Conclusion

The conclusion that can be drawn from this study are:

1. The results of measurements of pain intensity respondents using Bourbanis Scale (0-10) prior to the administration of cutaneous stimulation of slow-stroke back massage was found that all respondents experiencing pain at a moderate level.
2. The results of the measurement of pain intensity respondents using Bourbonais Scale (0-10) after stimulation of cutaneous slow-stroke back massage obtained by about two-thirds of respondents reported pain in mild level and more than a quarter in moderate pain.
3. Based on the software analysis using computerized statistical analysis found that there were differences in the intensity of pain before and after the administration of cutaneous stimulus slow-stroke back massage, where the value of pain intensity after administration stimulus respondents cutaneous slow-stroke back massage lower than during the prior administration Cutaneous stimulus slow-stroke back massage. In addition, test results of statistical analysis paired t test showed a significant difference, so it can be concluded that the stimulus cutaneous slow stroke back massage affects the intensity of low back pain sufferers pain (LBP).

Suggestion

1. In the implementation of nursing care to pain, especially low back pain (LBP) nurses can provide stimulus cutaneous with the technique of slow-stroke back massage as an alternative to nursing as a non-pharmacological intervention for nurses / health professionals
2. For additional information in developing knowledge in the health institution that aims to improve the ability (skill) to overcome the pain for healthcare institutions.
3. The sample in this study perform work activities (not in a state of rest / bed rest), so that after administration of cutaneous stimulus of slow stroke back massage, there are several samples that have increased the intensity of

back pain. For the expected characteristics of the sample in the next study is that the sample does not perform work activities, to be more visible how the effect of cutaneous stimulus slow stroke back massage on pain of low back pain (LBP).

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