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THE EFFECT OF SLOW STROKE BACK MASSAGE (SSBM) TO THE CHANGE OF THE PAIN INTENSITY IN PATIENTS WITH ACUTE LOW BACK PAIN (LBP)

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Abstract

About 80% of population has experienced in low back pain (LBP). One of non-pharmacological intervention to overcome LBP is using Slow Stroke Back Massage (SSBM). The mechanism of SSBM in reducing the intensity of pain is using the principle of gate control theory. This study aims to determine the effect of SSBM to the change of pain intensity in patients with acute LBP. Pre-experimental study was conducted one group pre and post test without comparison group. The sample of study is 32 housewives experienced in acute LBP taken by purposively sampling. The technique of data collection is by measuring the pain intensity before and after SSBM using VAS. Based on the statistical analysis obtained the average of pain intensity before SSBM 4.913 ± 2.2441 with pain intensity range 0.6-8.2, median 4.950. The average of pain intensity after SSBM is 2.491 ± 1.6308 with pain intensity range 0-5.4, median 2.450. While the test paired t-test showed that p=0.0001 (p <0.05) which means there is a change in pain intensity before and after the SSBM. Therefore we can conclude that there is an effect of SSBM to the change of pain intensity in patients with acute LBP. We can conclude that nurse as a care provider can do SSBM for the non-pharmacological therapy of acute *LBP*.

Keywords: Slow-Stroke Back Massage (SSBM), the intensity of pain, Low Back Pain (LBP)

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INTRODUCTION

Each individual is inseparable from the activity or work to suffice life needs. Most of the activities and work requires large energy and muscle strength so that, it can cause a variety of complaints, one of them is lower back pain. Almost everyone has experienced low back pain. Approximately 80% of the population had experienced pain in the lower back area because of postural faults regardless of gender, social and employment levels. (Vas, et al, 2006)

Lower back pain (LBP) is a pain, aching, soreness in the lumbar region of lower back. (Vas, et al, 2006) LBP is not a disease but a symptom resulting from many causes. (Daniel, 2006) LBP is an important problem in health and social economy. LBP has a great influence on health financing, the number of visiting to health practitioners, working days left, and decreasing of work productivity. (Vas, et al, 2006)

Each year the prevalence of low back pain (LBP) was reported by 15-45%, while the incidence of lower back pain about 10-15%. (Daniel, 2006) The incidence of lower back pain ever obtained at age 35-55 years, and there was no difference in event rates between men and women. (Soeharso, 1978) About 90% of all cases of lower back pain, mechanical factors is the majority cause. Preliminary study found that in RT 4 RW XII Tlogosari Kulon as much as 50% of 126 people aged 20-55 years reported experiencing lower back pain. More than 55% of LBP patients are as housewife.

Currently, standard conventional therapy to LBP patients includes the provision of medical non-opioide analgesics, non-steroidal anti-inflammatory drugs (NSAIDs), myorelaxant and opioide. Research suggests that NSAIDs are only effective to overcome the symptoms of the respondents while acute LBP. There are types of NSAIDs have not been able to completely eliminate the symptoms of LBP. Myorelaxants expressed more effectively cope with LBP compared with analgesics and NSAIDs, but there are side effects that should be concerned for respondents (Vas, et al, 2006), so non-pharmacologic approaches to be one alternative to overcome the pain associated LBP.

Some examples of non pharmacological interventions are frequently used in nursing in managing pain are coetaneous stimulus, distraction, relaxation, guided imagination and hypnosis. A holistic health approach, hypnosis uses self suggestion and relaxed feeling. Meanwhile, the distraction is the act of diverting attention to other clients that may reduce awareness of pain and increase pain tolerance. (Potter & Perry, 2005)

From the non-pharmacological therapies which are available, coetaneous stimulus is one of the alternative therapies that can be done by the help from family at home. In addition, the working of coetaneous stimulus is straight forward and practical, so it does not need special skills to do.

Coetaneous stimulus is the stimulation of skin to relieve pain. One simple step to reduce pain by using a coetaneous stimulus is by doing a massage and touch. Massage and touch are sensory integration techniques that affect the autonomic nervous system activity. If the individual perceives the touch as a stimulus to relax, then you will see a relaxation response. Relaxation is very important in helping clients to improve comfort and release from fear and stress. (Potter & Perry, 2005)

Coetaneous stimulus that can be used to overcome the LBP is a slow massage to the back (Slow-Stroke Back Massage). This massage is an act of comfort, which can ease tension, relax respondents and improve blood circulation. Techniques for 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 gentle strokes give pleasure and comfort to the respondents, while the stroke is short and circular. (Potter & Perry, 2005)

The working of slow stroke back massage (SSBM) releases endorphins, and blocks the transmission of pain stimulus. (Potter & Perry, 2005) However, a study on the use of massage therapy for low back pain of menstruation, showed no significant result to the decrease of the pain intensity. (Maher & Pellino, 2002)

Based on interviews with 18 patients with LBP in RW XII Tlogosari Kulon, obtained the data that most of them do not want to go to the doctor or hospital because of the compulsion to take medicine or no time to seek treatment because busy working. They do not want to take medication because the pain was so easy to relapse when the medication is stopped. SSBM is one of non pharmacologic treatment options that can be done at home, allowing the respondent and the family makes an effort to pain control. (Potter & Perry, 2005) This can help the client and family to be independent in managing pain, particularly for respondents that are difficult to get medical care facility or a respondent who does not want to overcome the pain with pharmacological therapy. SSBM does not need to use a special tools so that, this stimulus can be given to the public with lower economic.

Based on the above background, it is necessary to know about the effect of coetaneous stimulus slow-stroke back massage on pain intensity in patients with Low Back Pain (LBP) in RW XII Tlogosari Kulon Semarang.

METHOD

Pre-experimental study was conducted without comparison groups one group pre and post test. The population in this study was housewives with acute LBP in RW XII Tlogosari Kulon Semarang who included in the inclusion criteria. The sample number was 32 people taken by purposive sampling technique. (Mook & Chin, 2004)

Independent variable in this study is SSBM while the dependent variable is the intensity of pain. SSBM therapy was done once by the researcher by visiting the homes of respondents (27 people) and respondents who visited the home of researcher (5 people). The data collected by measuring the intensity of pain before and after the SSBM with VAS. Normality test used Shapiro-Wilk then, processed using paired t-test statistic test ($\alpha = 0.05$) with the aim of knowing the change of pain intensity before and after the SSBM.

RESEARCH RESULTS

The research was conducted at RW XII Tlogosari Kulon from April 1th to April 30th 2012 to 32 housewives who experienced acute LBP. The test for normality using the Shapiro-Wilk produce $p = 0.113$ ($p > 0.05$) which means that the data are normally distributed.

Table 1. Distribution of Pain Intensity of Housewives in RW XII Tlogosari Kulon before and after SSBM therapy in April 2012 (n = 32)

Variabel	Min-Max	Mean	SD	Median	p value
Pre	0.6-8.2	4.913	2.2441	4.950	0.0001
post	0.0-5.4	2.491	1.6308	2.450	

Table 1 shows the pain intensity average before SSBM 4.913 (SD = 2.2441) in pain intensity ranging from 0.6-8.2, while the median 4.950. The pain intensity average after SSBM 2.491 (SD=1.6308) in pain intensity ranging from 0.0-5.4, while the median 2.450. While the test paired t-test showed that $p=0.0001$ ($p <0.05$) which means there is a change in intensity pain before and after the SSBM.

DISCUSSION

Pain Intensity before SSBM

Low back pain (LBP) is a pain in the back between the bottom corner of the costal (rib) to the lumbosacral (around the tail bone). Pain can also spread to other areas like the upper back

and base of thigh. (Potter & Perry, 2005) LBP is a musculoskeletal disorder caused by a lack of body activity. (Maher & Pellino, 2002)

The occurrence of pain consists of three phases; namely reception, perception and reaction. The stimulus that produces pain sends impulses through the peripheral nerve fibers. Pain fibers enter the spinal cord and through the one of several routes to the nerves and finally to the mass of gray in the spinal cord. Pain messages can interact with cells inhibitor, prevent pain stimulus that does not reach the brain or transmitted without the barriers to the cerebral cortex, the brain interprets pain quality and process of information about past experience and knowledge as well as cultural associations in order to perceive pain. (Potter & Perry, 2005)

The results in Table 1 shows that the average of pain intensity 4.913 (SD = 2.2441) and pain intensity range 0.6-8.2, median 4950. The average pain intensity is mild to severe pain intensity. This is in accordance with the theory that acute LBP is pain that strikes suddenly and the time span of less than 3 months with mild until severe pain intensity. (Bimariotejo, 2009)

The theory states that the most common cause of LBP is muscle stiffness and spasms due to poor body activity and posture tense. (Shocker, 2008) Presence of postural errors or disproportionate body movement in a long time and constantly on the muscle and fascia will cause pain. Then there is a spasm of the muscles and hip muscles will be ischemic. (Ismiyati, 1997). Another theory states that approximately 90% of all LBP cases are caused by mechanical factors, namely LBP on normal anatomic structures are used excess or trauma and deformity which cause stress or strain on the muscles, tendons and ligament. (Setyawan, 2008)

According to the interview on 32 housewives who are experiencing acute LBP, 29 people expressed pain that arises due to strenuous activity performed at home as a child carrying, laundry lifting, mopping, or standing too long in the kitchen. The activity is done repeatedly every day with no ergonomic posture so that LBP is often felt by housewives. The cause of LBP which is experienced by housewives is appropriate to the previous theory.

The result in table 1 shows that the average of pain intensity after SSBM 2.491 (SD=1.6308) with pain intensity ranging from 0-5.4, median 2.450. While the test paired t-test showed that $p = 0.0001$ ($p< 0.05$) which means there is a change in pain intensity before and after the SSBM.

Stimulus coetaneous to the skin is performed to relieve pain, work by stimulating the release of endorphins and block the transmission of pain stimulus. The another way is to enable the transmission of sensory nerve fibers A-beta is bigger and faster, thereby reducing the

transmission of pain through C fibers and small-diameter A-delta closing the gate synapses for the transmission of pain impulses. (Potter & Perry, 2005)

Slow-stroke back massage is the back massage action with a slow sweep as much as 60 times per minute back massage for 3-10 minutes. The result message will stimulate mechanoreceptor. If the dominant input from A-delta fibers and C fibers, it will open up defenses along the nervous system and the client's perception of pain. The nerve pathways descend endogenous opioides release natural pain killer that is derived from the body. This nerve modulator close defense mechanism by inhibiting substance P in charge perceives pain. (Potter & Perry, 2005)

SSBM is an alternative non-pharmacological therapy that can be used to reduce pain without side effects. Guidelines Agency for Health Care Policy and Research (AHCPR, 1992) for acute pain mention that non-pharmacological interventions are interventions that are suitable for respondents who do not want to use drug therapy to overcome the pain and the respondents who feel anxious because they still feel pain after the use of pharmacologic therapy. SSBM is an example of non-pharmacological interventions which is often used in nursing for managing pain. (Potter & Perry, 2005) The BMC journal published by Fleming, et al support this theory by showing about 90% (220 of 248) of the sample after received SSBM experienced LBP during 12 months reported an effect of SSBM to suppress pain compared with the results of drug therapy p = 0.995 (p> 0.1). (Fleming, et al, 2007)

SSBM is the advantage of therapeutic action can be done at home, allowing the respondent and the family make an effort to control pain. (Potter & Perry, 2005) It can help the client and family self-sufficiency in managing pain, particularly for respondents that are difficult to get medical care facility or a respondent who does not want overcome pain by using pharmacologic therapy. Also in SSBM coetaneous stimulus is not necessary to use special tools that require great expense so that, this stimulus can be given to the public with down economy.

LIMITATIONS OF RESEARCH

Limitation of this study is the number of samples is low and inclusion exclusion criteria that are simple so that, the research could not be generalized.

CONCLUSION

The average of pain intensity in 32 people suffer from housewife with acute LBP in RW XII Tlogosari Kulon before SSBM 4.913 (SD = 2.2441) and pain intensity ranging from 0.6-8.2,

median 4.950. This shows the suitability of the research results with the theory that explains the sense in which the intensity of the pain of acute LBP range from mild to severe. Addition, the results of interviews on the 32 sample states that 90% of the causes of acute LBP is that they have suffered heavy activity with no ergonomic posture. This is consistent with some theories that suggest the most common cause of acute LBP is postural faults, mechanical factors, and the lack of body activity.

The average of pain intensity after SSBM 2.491 (SD = 1.6308) and pain intensity ranging from 0 to 5.4, median 2450. When compared with the intensity of pain before and after, there is a difference between them. Test paired t-test showed that p = 0.0001 (p <0.05) which means that, there is a change in pain intensity before and after the SSBM.

It is closely related to the theory that SSBM can reduce pain intensity. Therefore, this therapy may be one alternative therapy pharmacologic therapy.

ADVICE

The patient of LBP should be able to choose SSBM as a safe alternative therapy to reduce pain intensity for acute LBP. Moreover, in conducting its activities, the patient must arrange their posture ergonomically so that the onset of recurrent LBP can be avoided.

Besides that, SSBM can be one of the alternative therapies recommended by institutional services for people with acute LBP. Other researchers can conduct research on the effects of SSBM on pain intensity in patients with LBP with more number of samples and increase the frequency of therapy more than once. In addition, the population can be developed not only from a housewife but from many kinds of people.

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