EFFECTS OF HOLD RELAX TERAPY ON LOW-HIGH BADING IN OBESITIVE AGES

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Abstract

Lower Back Pain (LBP) is one of the most common health problems in communities whose causes are unknown, can lead to reduced productivity and, in severe cases, may lead to disability. Risk factors for LBP include individual factors, such as age, gender, Body Time Index (BTI), relaxed living behavior and not keeping a healthy diet, smoking habits, physical freshness, history of trauma as well as psychological and psychosocial problems. And work-related factors such as workload, physical activity performed, work position, body position (lifting heavy loads with the wrong position, bending, or bad body posture when sitting or sleeping, nor standing for hours and position when rotating the body), as well as physical environmental factors like exposure to vibration and noise. The aim of the study was to find out the effect of *hold relax* therapy on lower back pain in obese adults. The type of research is quantitative that uses the *Quasy Experimental* design with the research plan *pre-test and post test with control one group design*, that is, comparing subjects before and after given hold relax therapy in the reduction of lower back pain in adult obesity. The number of respondents was 15 samples with total sampling techniques. The research instrument is an intensity questionnaire of lower back pain. The analysis used is Paired sample T-Test (A<0,05). The results of this study conclude that there is an effect of *Hold Relax* therapy on the reduction of lower back pain in obese adults in Public Health Center Simpang Tiga Pekanbaru.

Keywords: Lower Back Pain, *Hold Relax*, Obesity

INTRODUCTION

Lower Back Pain (LBP) is the most common health problem in society that can lead to a decrease in productivity and even in severe cases will lead to disability. Lower Back Pain (LBP) has made a major contribution to the list of diseases in the world that are unknown exactly (Heuch, 2016; Maher, 2017).

LBP is experienced by 50-80% of the world's population (Tanderi et al, 2017). While in Indonesia for the region with the highest figure, it is estimated that 21.3% of East Java population suffers from back pain. Pravelence based on patient visits to several hospitals ranges between 3%-10% (Koesyanto, 2013). According to the National Basic Health Research (Riskesdas) report in 2018, 7.10% of the population of Riau Province suffered from joint pain in the lower back.

Risk factors that cause LBP include individual factors, such as age, gender, Body Time Index (BTI) due to relaxed living behavior and not keeping a healthy diet, smoking habits, physical freshness, history of trauma as well as psychological and psychosocial problems. And work-related factors such as workload, physical activity performed, work position, body position (lifting heavy loads with the wrong position, bending, or poor body posture when sitting or sleeping, nor standing for hours and position when rotating the body), as well as physical environmental factors like exposure to vibration and noise (Septadina 2014; Alhalabi et al, 2015).

Relaxed living behavior and not keeping a healthy diet cause obesity, which is now referred to as one of the *"New World Syndrome"* or New World syndrome because the incidence rate is on the rise and has created a socio-economic burden as well as public health problems. One of the musculoskeletal disorders caused by the effects of obesity is Lower Back Pain. (LBP). According to the 2018 Riskesdas report in Indonesia, the prevalence of obesity for the age of 18 and over increased from 14.8% in 2013 to 21.8% (14,5% men and 29.3% women) in 2018 and the highest prevalence in the age group 40-44 years is 29.6%.

Obesity is an important health problem in society and requires more attention because obesity has been linked to an increased risk of cardiovascular disease, stroke, diabetes, metabolic disease, cancer, nonalcoholic fatty liver, and asthma. Obesity can also lead to psychosocial problems, reduced productivity, and swelling up health costs. In addition, obesity also increases the risk of musculoskeletal disorders, including spinal cord injuries and osteoarthritis. (Carolin, A, et,al 2018).

Someone with more weight gain will make the weight increase. When excess weight due to the accumulation of excess fat tissue in the abdomen will complicate the work of the spine in supporting the body, the spinal cord is forced to accept loads that can lead to structural disturbance and damage to the vertebra. The most vulnerable part of the spine to the effects of obesity is the back, which is the lumbar part and causes pain. Pain causes joint movement no contraction and muscle relaxation so there is a distraction of contractures, and atrophy or muscle shrinking. And the more the joint is attracted and the more it can not be moved will affect damage to the joints, action is needed to prevent contractures and expand joint movements and can reduce pain (Allegri et al., 2016; Priguna, 2009; Zuhri & Rustanti, 2017).

Hold relax therapy is a technique that uses optimal isometric contractions of antagonistic muscles that shrink followed by muscle relaxation. This technique provides a stretching effect that improves joint movement and relieves pain with accessory or physiological movements. Physiological movements are based on kinematic bone movements such as flexion and extension. Meanwhile, accessory movements were based on joint movements (Hendrik H, 2018).

Treatment in patients who have already experienced lower back pain by doing activities that can reduce the pain, in addition to the exercise of movement therapy *Hold Relax*, it is necessary to observe also eating a nutritious food, adequate rest and drinking white water. The benefits of the exercise therapy *Hold Relax* is that it can stretch the muscles, reduce the pressure on the joints and strengthen the muscle, so that muscle tension can decrease and pain can be reduced. *Hold Relax* can be done almost anywhere and does not require special equipment (Huldani, 2012).

RESEARCH METHODS

The type of research used is the type of quantitative research that uses the Quasy experimental design with the research plan *pre-test and post test with control one group design*, i.e. comparing subjects before and after given hold relax therapy in reducing lower back pain in adult obesity. The research site was carried out in Public Health Center Storage Tree Pekanbaru. The location was chosen on the basis of the data that Public Health Center Simpang Tiga Pekanbaru with the highest percentage of obese adults experiencing pain in the lower back compared to the others. The sampling technique in this study is *Total Sampling* by meeting the inclusion criteria and not meeting the exclusion criteria. The criteria for inclusion of the sample of the study are: female gender, adult patients who are in Public Health Center Simpang Three Weekly suffering joint pain with moderate to severe degree of pain.

A tool for gathering data on this study using a questionnaire that contains the biodata of the respondents and the results before and after *Hold Relax* therapy. A method used to find out the results of the *Hold Relax* therapy prior to and after the therapy action and carried out by filling in the questionnairesAnalisa data yang digunakan adalah analisis univariat yaitu dilakukan untuk menganalisa terhadap distribusi frekuensi setiap kategori jawaban pada variable penelitian, selanjutnya dilakukan analisis terhadap tampilan tersebut (Notoatmodjo, 2013).

In this study, a bivariate analysis was performed against two variables simultaneously, with a *paired test of t-test dependent* samples. The test's function is to see if there's an effect on lower back pain reduction before and after *hold relaxation* therapy. By determining the conclusion based on probability i.e.: If the probability (significant) > 0.05, then H0 : Effective and if the probability (signifying) < 0.05 then H 0 : Ineffective.

RESEARCH RESULT

A. Univariat Analysis

1. Respondent Charasteristic

Tabel 2. Frequency Distribution Characteristic in Obese Adults Experiencing Lower Back Pain in Public Health Center Simpang Tiga Pekanbaru

Charasteristic	Frequensy	Persentation
Age		
20-35th (early adult)	**9**	**60%**
36-40th (late adult)	5	40%
Total	15	100%
Education		
Junior High School	3	20%
Senior High School	**8**	**53,3%**
Program	3	20%
Bachelor 1	1	6,7%
Total	15	100%
Time (long suffered)		
< 6 weeks	5	33,3%
6-12 weeks	**7**	**46,7%**
> 12 weeks	3	20%
Total	15	100%
Cause of Pain		
Injury	2	13,3%
Neural Complaints	2	13,3%
Excessive Activity	**11**	**73,3%**
Total	15	100%

From table 2 it can be seen that the characteristics of respondents in Public Health Center Simpang Tiga Pekanbaru According to the Department of Health of RI, the age of 20-35 years is 9 people in the early adult category (60%), and for the last education mostly high school education is 8 people (53.3%), while for the time (long suffering) mostly 6-12 weeks is 7 people (46.7%), then for the cause of pain experienced respondents is 11 people. (73,3).

2. Analysis of the degree of lower back pain in adults obesity
   a. The degree of pain before hold relax therapy versus reduction of the pain in the lower back in obese adults.

Tabel 2. Frequency Distribution of Lower Back Pain in Obese Adults Before Hold Relax Therapy at Public Health Center Simpang Tiga Pekanbaru

Pain Level	Frequensy	Persentation
Light Level(1-3)	3	20%
Medium Level (4-6)	**9**	**60%**
Heavy Level (7-9)	3	20%
Total	**15**	**100%**

Based on Table 4.2 it is known that the rate of lower back pain in adult obesity before hold relax therapy in Public Health Center Storage Three Pekanbaru mostly belongs to the category with moderate rate of pain (4-6) which is as many as 9 people (60%).

b. Pain level after *hold relaxation* therapy against reduced back pain in obese adults

Tabel 3. Frequency Distribution of Lower Back Pain in Obese Adults Before Hold Relax Therapy in Public Health Center Simpang Tiga Pekanbaru

Pain Level	Frequesnsy	Persentatiion
Light Level (1-3)	**10**	**66,7%**
Medium level (4-6)	5	33,3%
Heavy Level (7-9)	0	0%
Total	15	100%

Based on Table 4.3 it is known that the rate of lower back pain in adult obesity after *hold relax* therapy in Public Health Center Storage Three Pekanbaru mostly belongs to the category with a rate of mild pain (1-3) that is as many as 10 people (66.7%).

B. Bivariat Analysis

1. The Effects of Hold Relax Therapy Before and After Intervention on Lower Back Pain Reduction in Obese Adults

Tabel 4. The level of lower back pain in obese adults before and after hold relaxation therapy Public Health Center Simpang Tiga Pekanbaru

(N=15)			
Group	**Mean**	**Standard Deviation**	***p-value***
Pre Test	2,00	0,471	0,001
Post Test	1,33	0,488	

Based on Table 4.4, it is known that there is a difference in the average rate of lower back pain in adult obesity before and after the administration of *hold relax* therapy with an average value of 2.00 dropped to 1.33 and the statistical test results

obtained p-value of 0.001 then it can be concluded that there has been an effect of the therapy hold relax on the reduction of the pain in the lower back in adults Obesity prior to and after giving the therapies *hold relax* in Public Health Center at Simpang Tiga Pekanbaru.

DISCUSSION

1. The degree of lower back pain in obese adults before being given Hold Relax therapy.

The results of the pretest obtained data that respondents more feel moderate levels of pain with the range 4-6 that is as much as 9 respondents with pensentase 60%. Whereas for the average value (mean) level of lower back pain in adult obesity before given *hold relax* therapy is 2. This according to the results of research from Ahadi, et.al (2015) showed that the average level of pain respondents before given therapy was on the moderate pain scale with the pain range 4-6.

Pain is discomfort that can be caused by the effects of certain diseases or as a result of injury. Pain also includes a multi-dimensional sensory experience that pain in these phenomena can vary such as intensity (light, moderate, severe), quality (dump, like burning, sharp), duration (transitory, intermittence, persistent), and spread (superfisial atau dalam, difus atau terlokalisir). Pain in each patient is different because it is a personal, subjective and different experience in each person and it is only that person who can explain or evaluate the pain he experiences (Andarmoyo,2015).

According to the assumption of the researchers in this study stated that the level of pain in the moderate category in the 4-6 pain range can interfere with activity as well as disturb concentration, so requires rest and requires medication to relieve pain. Pain can be influenced by several factors, including age and educational level.

Based on research from Ahadi et al (2015) stated that the older a person is, there will be degeneration in the bone, bone density is decreasing, so it is easy to experience musculoskeletal complaints, to cause pain. By the age of 30th, degenerations occur in tissue damage, replacement of tissue into acute tissue, as well as reduction of fluid, so stability in the bones and bones and muscles is reduced until there is a decrease in elasticity of the bone leading to the occurrence of lower back pain.

From the results of the study obtained results that the average adult age of obesity who suffer from lower back pain in Public Health Center Simpang Tiga Pekanbaru is in the early adult category in the age range of 20-35 years as much as 9 respondents with a percentage of 60%.

In addition, education affects the level of knowledge of the patient. Patients with a low level of education influence the knowledge associated with the management of pain of the individual himself to cope with the pain he feels. Based on research from Winrasih (2013); Fadla (2014) states that a person's level of education affects one's ability to receive information and process it before it becomes good or bad behavior so that it affects his or her health status.

Based on the results of the study there are results that the average educated adult obese suffering from lower back pain in the Public Health Center Simpang Tiga Pekanbaru belongs to the high school level category of 8 respondents with a percentage of 53.3%.

Based on the results of the study found in Table 4.1, the duration or duration of suffering for 6-12 weeks (subacute) of 7 respondents with a percentage of 46.7%. Lower back pain, if left continuously or untreated, can in the long run lead to disorders in the spinal nerves. Lower backyard pain can lead to disturbances in the vertebral nerves, such as radiculopathy or spinal stenosis. It can cause numbness, dizziness, or weakness in the legs or lower legs (March L, 2014).

According to the study of pain experienced by adult respondents, obesity is lower back pain caused by overactivity with the majority of 11 people with a percentage of 73.3%. Excessive workload on the bone causes injury or trauma to soft tissue, resulting in pain in the spine, including lower back (Septadina, 2014).

2. The degree of Lower Back Pain in obese adults after therapy *Hold Relax*

The post-test results obtained data that the rate of lower back pain in adult obesity is in the category of mild pain with a pain range of 1-3 as many as 10 respondents with a percentage of 66.7%.

Hold relax therapy itself is a method of muscle relaxation aimed at relieving tension or stiffness of the muscles of the body. Hold relax techniques are often used in physical therapy and occupational therapy to help patients with a variety of conditions affecting the musculoskeletal and nervous systems (Chen, L.W at al, 2013). By using the hold relax technique, the muscles that are stiff or tensioned will be held tight for a few seconds. After that, the muscles will be instructed to relax gradually. This relaxation process will cause the nerves connected to the muscle to relax, so that the pain in the lower back can be relieved. In addition, hold relax can also help improve the blood circulation to the area affected by pain. By increasing the circulation of blood, the healing process in the lower back area will be more effective.

Based on the above results, *hold relax* therapy can lower the level of pain in obese adults. This was seen at the time of the study when performing the hold relax technique, respondents said that the pain was reduced and the feeling was more relaxed. This was supported by research from (Tumer, et.al, 2018) that said hold relax therapy could help reduce lower back pain, as well as improved muscle strength and flexibility.

3. Effects of Hold Relax Therapy Before and After Intervention on Lower Back Pain in Obese Adults

Testing the hypothesis in this study using the chi square test and obtained the result that the average value (mean) is 2.00% standard deviation 0.471 and the p-value value is 0.001 (p-values <0.05). The results show that hold relax therapy has an impact on the rate of lower back pain in obese adults before and after hold relax in the Public Health Center Simpang Tiga Pekanbaru.

The study is in line with the results of Haniyah, Setyawati (2018) which showed that the average pain rate in 11 respondents prior to therapy with a median score of 7, mean 6.81.

The results of the study showed a significant effect of hold relax therapy on reducing lower back pain in obese adults with a p-value of 0,000.

CONCLUSIONS AND SUGGESTIONS

A. Conclusions

1. Based on the results of research and discussions on the rate of lower back pain in adults obesity in Public Health Center Simpang Tiga Pekanbaru before and after the administration of hold relax therapy can be drawn the following conclusions:
2. The rate of lower back pain in adult obesity before hold relax therapy is mostly in the category of moderate pain with a pain range of 4-6 as much as 9 respondents and a percentage of 60%.The rate of lower back pain in adult obesity after hold relax therapy is mostly in the category of mild pain with a pain range of 1-3 of 10 and a percentage of 66.7%.
3. There is an influence of hold relax therapy in reducing lower back pain in adult obesity in in Public Health Center Puskesmas Simpang Tiga Pekanbaru. This is indicated by an average value (mean) of standard deviation of 0.488 and a p-value significance of 0.001 (p-values<0,005).

B. Suggestions

Based on the results of the study, the researchers gave the following suggestions:

1. For adults with obesity who experience lower back pain, the results of this study are useful for dealing with lower back pains in adults who are obese after the analgesic effects disappear and can be applied in their respective homes when the pain still appears frequently.
2. To the nurse that the results of this research can be used in the delivery of nursing orphanage in particular in the treatment of pain as well as as as an input in the development of science on the effect of hold relax therapy on the reduction of lower back pain in adult obesity.
3. To the next researcher that the results of this research can be used as an additional source of data and information for researchers who will undertake the same research.

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