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EFFECT OF THE USE OF WARM WATER COMPRESSES ON THE DECREASE IN PAIN INTENSITY IN THE ELDERLY AT COMMUNITY AREA

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Abstract:

The elderly are a high-risk group that experiences health problems characterized by physical, biological, psychological, and social changes caused by the aging process including joint diseases. Joint disease is a degenerative process and causes joint pain. Efforts are to reduce pain through the use of warm water compresses. This study aims to identify the effect of the use of warm water compresses on the decrease in pain intensity in the elderly in the working area of Puskesmas (Public Health Center) Antang RW VI. The research design used is pre-experimental research design with the type of research design used is the design of one group pretest & posttest design,with a sample number of 30 respondents, samples taken using purposive sampling. The criteria of the subject are elderly people who experience pain aged ≥ 60 years, willing to be respondents, do not take painkillers and do not have dementia. The results showed that the intensity of pain in the elderly changed significantly after the warm water compress with the results of a statistical test paired sample t-test obtained P value 0.000 concluded that there is an influence on the use of warm water compresses to decrease the intensity of pain in the elderly in the work area of Puskesmasantang RW VI. It is recommended to Puskesmas officers to provide information and intervention to the elderly about the therapy of warm water compresses against pain reduction.

Background:

The elderly are part of the growing process. Man does not suddenly grow old, but develops from infants, children, adults and eventually becomes old. This is normal with predictable physical and behavioral changes that occur in everyone by the time they reach a certain stage of chronological developmental age. Elderly is a natural process determined by Allah SWT. Everyone will experience the process of getting old and old age is the last human life in this time a person experiences gradual physical, mental and social decline (Azizah, 2011).

Ageing or getting old is a situation that occurs in human life. The ageing process is a lifelong process, not only starting at a certain time, but starting from the beginning of life. Getting old is a natural process, which means that a person has started three stages of his life, namely child, adult, and old. These three stages are different, both biologically and psychologically (Hesti W, 2010).

The elderly group is a high-risk group that experiences health problems characterized by physical, biological, psychological, and social changes caused by the aging process including joint diseases.Joint disease is a degenerative process and causes joint pain in the elderly. This incidence of joint pain occurs a lot in elderly women due to significant hormonal changes (Smeltzer et al., 2010 in Angelina Wulan 2015).Pain as a subjective sensory and unpleasant emotional experience related to actual and potential tissue damage or felt in events where damage occurs (International Association for study of pain (1979), in Prasetyo (2010).

Pain management with nursing intervention consists of pharmacological therapy and non-pharmacological therapy. Pharmacological pain management methods include medications, while non-pharmacological therapies include warm water compresses, cold compresses, cutaneousmassage or massages, relaxation techniques, and rest. The use of warm water compresses on aching joints can improve the flexibility of tendons and ligaments, reduce muscle spasm, relieve pain, improve blood flow and increase metabolism (Potter& Pery, 2010).

The use of warm compresses channeled through the conduction of towels that have been soaked with warm water to painful parts of the body with a water temperature of about 37-40 °C

because at that temperature the skin can tolerate so that there is no irritation and redness of the compressed skin (Kozier&Erb's, 2009).

According to the World Health Organization (WHO) 40% of the world's population over the age of 70 will experience problems with the extent of knee joint movement, signs of stiffness and pain in the knee joint. 80% of them have an impact on motion limitations. In America, the prevalence of arthritis of more than 2 million elderly people who also have typical complaints of arthritis is stiffness and pain in the joints, the impact of which is a decrease in musculoskeletal ability. The ability of one's activities is inseparable from the power of the Neurology system and musculoskeletal (Mubarak, 2008 in Nardiansyah 2013).

The prevalence of joint disease in Indonesia is also quite high, at 24.7%.In elderly women 13.4% and elderly men 11.3%. At the age of 45-54 the prevalence is 37.2%, the age of 55-64 is 45.0%, the age of 65-74 is 51.9% and the age over 75 is 54.8%. Joint diseases that are often experienced by the elderly are gout arthritis, osteoarthritis and rheumatoid arthritis (Riskesdas, 2013 in Wulan, 2015).

Data of the South Sulawesi Provincial Health Office obtained the number of joint pain events mainly in the elderly group as many as 650 people from 1,248,436 elderly people in the city of Makassar.

Based on previous research conducted by Wurangian (2014) in his research on "The Influence of Warm Compresses On The Decrease of Pain Scale In Gout Arthritis Sufferers In The Working Area of Manado Shoulder Health Center" there is a significant influence between the pain scale before and after the warm water compress.

Based on previous research conducted by Wulan (2015) in his research on "The Effect of Warm Water Compress Therapy on The Decrease of Joint Pain Scale in Elderly Women in Panti Tresna Werdha Mulia Dharma Kubu Raya Regency" there was a significant influence on the decrease in joint pain scale before and after being given warm water compress intervention.

Based on the initial data of researchers in PuskesmasAntang the number of elderly as many as 2210. Consisting of the age of 45-59 years as many as 1369 and the age of ≥60 as many as 841 and in RW VI obtained the number of elderly as many as 185 people. Based on interviews with the elderly complain of pain in the knees, legs, and waist at night, morning to during the day. Therefore, researchers are interested to examine the effect of the use of warm water compresses on the decrease in pain intensity in the elderly in the Working Area of PuskesmasAntang RW VI.

Purpose of study:

Identified the effect of the use of warm water compresses to decrease the intensity of pain in the elderly in the community area.

Method of research:

This research is a quantitative method with pre-experimental research design with the type of research design used is the design of one group pretest & posttest designthat is the sample in this study is observed first before being treated, then after being given the treatment the sample is observed again.The population in this study is all elderly people who are in the Working Area of Puskesmas Antang RW VI as many as 185 people.. The samples in this study were elderly people who experienced pain in the Working Area of Puskesmas Antang RW VI as many as 30 people.

Sampling techniques in this study were conducted with purposive sampling techniques, namely sampling techniques with certain considerations (Sugiyono, 2014).Using purposive sampling is a sample taken from elderly respondents who meet the criteria determined by researchers with inclusion and exclusion criteria.Data collection instruments can be questionnaires (list of questions), observation forms and other forms related to data recording (Dharma, 2011) .

The data collection instrument used in this study is a questionnaire sheet containing demographic data consisting of name, age, gender, education. The questionnaire sheet also contains observation sheets for measuring joint pain levels using vas pain scale questionnaire (Visual Analog Scale) and divides into two scales namely mild (1-3), medium (4-6).

Result of study:

This research is a quantitative method with pre-experimental research design with the type of research design used is the design of one group pretest & posttest designthat is the sample in this study observed first before being treated, then after being given the treatment of the sample is observed again that aims to know the effect of the use of warm water compresses to decrease the intensity of pain in the elderly in the working area of Puskesmasantang RW VI. The study was conducted 3 times a week for 2 weeks, starting from June 17 to July 1, 2017 with a sample count of 30 people. The results of this study were obtained through primary data, namely by using questionnaires of demographic data, observation sheets, while secondary data obtained from agencies related to the work area of PuskesmasAntang. The results of the research obtained are:

1. Univariate Analysis

a. Characteristics of Respondents

1) Age

Table 5.1
Distribution of Respondents by Age of seniors Who Experiences Pain in the Work AreaPuskesmasAntang RW VI

Age	N	%
60-65 Years Old	17	56.7
66-70 Years Old	10	33.3
70 Years	3	10.0
Total	30	100

Source : Primary Data 2017

Based on table 5.1 above shows that out of the 30 respondents studied obtained the highest number of samples, namely at the age of 60-65 years as many as 17 respondents (56.7%), age 66-70 years as many as 10 respondents (33.3%), and age >70 years as many as 3 respondents (10.0%).

2) Gender

Table 5.2
Distribution of Respondents by Gender Elderly People Experiencing Pain in the Region Work of PuskesmasAntang RW VI

Gender	N	%
Male – Male	5	16.7
Women	25	83.3
Total	30	100

Source : Primary Data 2017

Based on table 5.2 above shows that out of 30 respondents obtained male gender as many as 5 respondents (16.7%), and women as many as 25 Respondents (83.3%).

3) Education

Tabe 5.3
Distribution of Respondents Based on Education of Elderly People Experiencing Pain in The Work Area PuskesmasAntang RW VI

Education	N	%
No School	25	83.3
Sd	4	13.3
Junior	1	3.3
Total	30	100

Source: Primary Data 2017

Based on table 5.3 above shows that out of 30 respondents based on the level of education obtained the highest number of samples, namely not a school as many as 25 respondents (83.3%), elementary school as many as 4 respondents (13.3%), and junior high school as many as 1 respondent (3.3%).

b. Variables That Are Examined
1) Before Doing Warm Water Compress

Table 5.4
Distribution of Frequency of Pain Levels in the Elderly Before Compressing Warm Water in the Work Area PuskesmasAntang RW VI

Pain level before compressing Warm Water	N	%
Light	8	26.7
Are	22	73.3
Total	30	100

Source: Primary Data 2017

Based on table 5.4 above that the distribution of the frequency of elderly pain levels before warm water compresses showed that out of 30 respondents received moderate pain as many as 22 Respondents (73.3%), and mild pain as many as 8 Respondents (26.7%).

2) After warm water compress

Table 5.5
Distribution of Frequency of Pain Levels in the Elderly after Compressing Warm Water in the Working Area of PuskesmasAntang RW VI

Pain level after warm water compress	N	%
Light	26	86.7
Are	4	13.3
Total	30	100

Source: Primary Data 2017

Based on table 5.5 above that the distribution of the frequency of elderly pain levels after a warm water compress shows that out of 30 respondents who experienced mild pain as many as 26 respondents (86.6%), and moderate pain as many as 4 Respondents (13.3%).

2. Bivariate Analysis

To see the effect of the use of warm water compresses to decrease the intensity of pain in the elderly in the work area of PuskesmasAntang RW VI then used test paired sample t-test using spss program 17.0 with a level of meaning $\alpha = 0.05$ and said to be meaningful when $p<0.05$.

Table 5.6
Analysis of Changes in Pain Intensity in The Elderly Before and After Intervention in the Work Area PuskesmasAntang RW VI

Pre & Post Scores	Mean	Amount (n)	Min-max	Std. Deviation	P value
Pain before intervention	4.73	30	2-6	1.285	0.000
Pain after intervention	1.97	30	1-4	1.033	
Change	2.767				

Source : Test Paired Sample t-test

Based on table 5.6 above shows that out of 30 respondents who have done warm water compresses experienced a meaningful decrease in pain intensity P value 0.000 < 0.05 ie from 4.73 decreased to 1.97. This indicates that Ha was accepted and Ho was rejected which means there is an effect of the use of warm water compresses on the decrease in pain intensity in the elderly in the Working Area of PuskesmasAntang RW VI.

Discussion:

In this discussion, researchers will discuss about the effect of the use of warm water compresses on the decrease in pain intensity in the elderly in the working area of RW VI health centers. Based on table 5.4 shows that there are 30 respondents who experience pain, where the pain felt by each respondent varies, namely mild pain and moderate pain. In pain before compressing warm water there were 22 respondents (73.3%) moderate pain intensity and 8 respondents (26.7%) with the intensity of mild pain. This is because it has not been done warm water

compress to respondents. After compressing warm water in table 5.5 as many as 26 respondents (86.6%) with a decrease in the intensity of mild pain, and there were 4 respondents (13.3%) does not experience any change or decrease in the intensity of moderate pain to mild pain. However, on the pain scale there is still a decrease with changes in the scale.This is because the pain felt by each individual is different and only someone who experiences it can feel the pain itself.

This decrease in pain intensity is influenced by the use of warm water compresses in the elderly. Warm water compresses provide the effect of increasing blood flow to painful parts of the body so as to get rid of inflammatory products such as bradykinin, histamine, and prostaglandins (Price & Wilson, 2006 in Igirisa, 2015). In addition, according to respondents, compressing warm water can increase comfort in the compressing area so that pain can be reduced.

In line with Igirisa's research (2015), said that the decrease in pain in the elderly after being given a warm compress changes but nevertheless the change depends on the response of each elderly because the pain felt by individuals is personal which means that individuals experience different pains. The elderly are able to respond well to the administration of warm compresses.

This is in accordance with the theory of gate control according to Prasetyo (2010) that if the impulse carried by small diameter pain fibers exceeds the impulse carried by the A-Beta tactile fibers then the "gate" will be open so that the journey of pain impulses is not blocked so that the impulses will reach the brain. Conversely, if the impulses carried by tactile fibers dominate more, the "gate" closes so that the pain impulses will be blocked. This is why doing a warm compress can reduce the intensity of pain.

Based on the results of bivariate analysis using paired sample test t-test obtained the average value of pain level before compressing warm water is 4.73 with a standard deviation of 1,285,while after the warm water compress obtained an average value lower 1.97 with a standard deviation of 1,033, then obtained the value of P value = 0.000 < α = 0.05, thus it can be concluded that there is an influence on the use of warm water compresses to decrease the intensity of pain in the elderly in the Working Area PuskesmasAntang RW VI.

This is in line with research conducted by MeryFanada (2012) obtained the average value of pain level before warm compresses is 2.24 with a standard deviation of 0.510, while the level of pain after a warm compress obtained a lower average value of 0.20 with a standard deviation of 0.410 with a difference in mean value between before and after being given a warm compress is 2,250 with a standard deviation of 0.550. and the value of P value is 0.000.

The results showed that respondents who experienced pain in the working area of rwviPuskesmasantang aged 60 years and above. The age of the respondents is included in the elderly category. The results of this study are in line with the theory that the elderly will experience physical changes in the form of decreased organ function so that they are susceptible to various diseases such as joint pain, low back pain, chest pain, dizziness, and sleep disorders (Bandiyah, 2009)

The elderly are a high-risk group that experiences health problems characterized by physical, biological, psychological, and social changes caused by the aging process including joint diseases. Joint disease is a degenerative process and causes joint pain in the elderly. This incidence of joint pain occurs a lot in elderly women due to significant hormonal changes (Smeltzer et al., 2010 in Angelina Wulan 2015).

In accordance is with the above opinion that one of the problems experienced by the elderly is pain in the joints. The problem is influenced by increasing age which will result in a linear decrease in bone mass and cause the bones to pourus more.It is supported by the

InternationalAssociation for Study of Pain in Prasetyo (2010), pain as a subjective sensory and unpleasant emotional experience related to actual or potential tissue damage felt in events where damage occurs.

Pain is always associated with the presence of stimulus (excitatory pain) and receptors that conduct pain. The receptor in question is a nosiceptor, which is the free nerve endings of the skin and responds to a strong stimulus. The appearance of pain begins with the presence of pain stimulus. This stimulus can be biological, chemical, hot, electrical, and mechanical. The stimulus is then transmitted in the form of pain impulses sent to the brain (Prasetyo, 2010).

In accordance with the opinion of Uliyah & Hidayat (2008) Warm compress is to provide a warm feeling to meet the needs of comfort, reduce or relieve pain, reduce or prevent muscle spasm and provide a sense of warmth in certain areas.Warm water compress is done by using a warm water towel that is conductive where there is a warm transfer of the towel into the body so that it will cause dilation of blood vessels, circulation becomes smooth, and there will be a decrease in pain that is felt gradually reduced.

Warm compresses cause vasodilation effect on blood vessels, increasing blood flow to tissues. Increased blood flow can rule out inflammatory products such as bradykinin, histamine, and prostaglandins that cause local pain. In addition, a warm compress can stimulate nerve fibers that close the gate so that the transmission of pain impulses to the spinal medulla and brain can be tasteless (Price & Wilson, 2006 in Igirisa, 2015).

Warm compresses will also cause physiological effects for the body, namely vasodilation effects, increased cell metabolism and relaxing muscles so that the perceived pain is reduced (Potter & Perry, 2010).

In the opinion of Koizier&Erb (2009) The administration of warm water compresses is a long-standing nursing intervention presented by nurses, warm water compresses are recommended to lower pain because it can relieve pain, improve muscle relaxation, improve circulation, improve psychological relaxation, and provide comfort.

In this study using a warm water compress that is waslap / towel soaked in hot water that has been measured using a water thermometer with a temperature of about 37-40 °C is done for 15 minutes and every 5 minutes waslap / towel is changed to maintain the hot temperature of the warm compress.

In accordance with the opinion of Koizier & Erb (2009), The use of warm compresses channeled through the conduction of towels that have been soaked with warm water to painful parts of the body with a water temperature of about 37-40 °C because at that temperature the skin can tolerate so that there is no irritation and redness of the compressed skin. Warm water compresses aim to lower the intensity of pain with the benefit of biologically administering warm water compresses can cause dilatation of blood vessels resulting in increased blood circulation. Physiologically the body's response to heat is to cause dilation of blood vessels, lower muscle tension, make muscles into relaxation, increase tissue metabolism and increase capillary permeability. This heat response is used for therapeutic purposes in various conditions and conditions that occur in the body.

Supported by Demir's opinion (2012) quoted in Wulan (2015) said that warm water compress therapy can inhibit pain by means of heat receptors and lower pain with vasodilation effect so as to reduce muscle pain and spasm.

The use of warm water compresses on aching joints can improve the flexibility of tendons and ligaments, reduce muscle spasm, relieve pain, improve blood flow and increase metabolism (Potter& Pery, 2010).

Another study conducted by Wurangian (2014) which examined the effect of warm compresses on the decrease in the scale of pain in people with gout arthritis in the working area of the manado shoulder health center, where in the study the average value before the warm compress was 6.23 and after the warm compress action was 3.30 which showed a decrease in the pain scale with A value of 0.000.

Supported by Igirisa research (2015) on the influence of warm water compresses on the decrease in pain of gout arthritis sufferers in the elderly in the working area of Puskesmaspilolodaa district of the western city of Gorontalo city shows the influence of warm water compresses on the decrease in pain of gout arthritis in the elderly in the Working Area of PuskesmasPilolodaaKec. Kota Barat with a value of $p = 0,000 < \alpha = 0.05$.

According to the researcher's assumption, in lowering or reducing pain in the elderly, one of them is non-pharmacological therapy, namely warm water compresses.The use ofWarm Water Compresses can be used in healing therapies and help in lowering pain.Warm water compresses can affect the liver susana so as to make the elderly look relaxed, relaxed, comfortable, mobilize well and feel a decrease in pain in the joints.However, the change depends on the response of each elderly because the pain felt by the individual is personal which means that each individual experiences different pains. Warm water compress therapy is cost-effective, the ingredients are easy to get, easy to use, can be done by anyone and can minimize the side effects of pharmacological use. The use of warm water compresses has the advantage in lowering pain in the elderly because the warm effect of the compress can cause vasodilation in blood vessels which will later increase blood flow to the tissues. However, warm compresses are used with caution and are not overused to avoid skin injury. Although the elderly have experienced a decrease in pain does not guarantee an elderly person not to re-arise pain.

Summary:

Based on the results of the study, it is the title of the influence of the use of warm water compresses to decrease the intensity of pain in the elderly In the Working Area of Puskesmas Antang RW VI. So it can be concluded that: (1) The intensity of pain in the elderly before the compress of warm water against 30 respondents, the average respondent (73.3%) moderate pain, (2)The intensity of pain in the elderly after a warm water compress on 30 respondents, the average respondent (86.7%) experience mild pain. And (3) There is an effect of the use of warm water compresses to decrease the intensity of pain in the elderly In the Working Area of puskesmas Antang RW VI with the value of Test Paired Sample t-test obtained $P = 0.000$ smaller than the value of $\alpha = 0.05$.

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