

Jurnal Penelitian Keperawatan Medik	Vol. 3 No. 2	Edition: November 2020 – April 2021
	<a href="http://ejournal.delihusada.ac.id/index.php/JPKM">http://ejournal.delihusada.ac.id/index.php/JPKM</a>	
Received: 04 Maret 2021	Revised: 22 Maret 2021	Accepted: 28 April 2021

## **DECREASING OF PAIN SCALE THROUGH WARM COMPRESS AMONG ELDERLY WITH RHEUMATOID ARTHRITIS**

**Hariati Hariati<sup>1</sup>, Ismayadi Ismayadi<sup>2</sup>, Siti Saidah Nasution<sup>2</sup>**

<sup>1</sup>Nursing faculty, Institut Kesehatan Deli Husada Deli Tua

<sup>2</sup>Nursing Faculty, Universitas Sumatera Utara

e-mail : [hariati1092@gmail.com](mailto:hariati1092@gmail.com)

### **Abstract**

*A warm compress is one of the non-pharmacological actions by providing a warm sensation to the skin using fluids and tools that cause a warm sensation to the part of the body that is needed. A warm compress on the rheumatoid joint will deactivate the nerve fibers that cause muscle spasms and pain. This study aims to determine the effect of warm compresses on the scale of pain in the elderly with rheumatoid arthritis. This research design using Quasi Experiment with one group pre-posttest design. The number of samples as many as 42 elderly people who were in the working area of Amplas Puskesmas, Medan Amplas District, total samples were taken. The results showed that the total mean value before giving warm compresses was 4.57 (SD = 0.703), while after giving warm compresses there was a decrease with the total mean value was 2.10 (SD = 1,165). The results of the nonparametric statistical test with the Wilcoxon test obtained p-value = 0.000. These results indicate that the p-value <0.05 (0.000), which means that there is a significant difference. So this shows that there is a significant reduction in the pain scale in the elderly between before doing warm compresses and after doing warm compresses. So it can be concluded that warm compresses affect the scale of pain in the elderly with rheumatoid arthritis. Thus, nurses can use warm compresses as a non-pharmacological intervention in reducing pain scales in elderly people with rheumatoid arthritis.*

**Keywords:** Pain, rheumatoid arthritis

### **1. INTRODUCTION**

the number of elderly people worldwide is over 142 million at present, in 2020 (WHO, 2020). It is estimated that by 2025 the elderly will reach 434 million (WHO, 2018). In the Southeast Asia region, it is estimated that the elderly population in 2050 will increase from 13.7% to 20.3% (WHO, 2021).

Meanwhile in Indonesia, according to the Central Bureau of Statistics, there are 26.82 million elderly, which is about 9.92% of the total age of the population. In North Sumatra Province, the number of elderly people is around 8.19% of the 26.82 million elderly in Indonesia (Central Statistics Agency, 2020).

As you age, aging will occur. Individually, the influence of the

aging process can cause various changes both physically, biologically, socio-economically, and mentally. Changes in the body occur in all organs and tissues of the body, this condition can also be seen in all the musculoskeletal system and other tissues that are related to the possibility of developing several groups of rheumatism (Bobak & Base, 2017)

Complaints of rheumatoid arthritis often occur in the elderly. The elderly often complain of aches, pains, and sometimes aches. Rheumatoid arthritis pain will get worse in the morning when you wake up, improve during the day and get more severe at night (Serhal, Lwin, Holroyd & Edwards, 2020).

The management of rheumatoid sufferers is focused on controlling pain, reducing joint damage, and improving or maintaining function and quality of life (Roma, Almeida, Mansano, Viani, Assis, & Barbosa, 2014). One way to reduce pain complaints due to rheumatoid arthritis in the elderly can be done with non-pharmacological measures. Non-pharmacological actions are carried out, namely warm compresses by warming the sore joints (Ambardekar, 2020).

The use of surface heat therapy on our body can improve the flexibility of tendons and ligaments, reduce muscle spasms, relieve pain, increase blood flow, and increase metabolism. The maximum benefit of this warm

compress can be achieved in 20 minutes (Hinkle & Cheever, 2014). This is in line with research conducted by Agussalim and Lorica in 2019 which stated that there was a significant difference in the pain scale between before warm compressing and after warm compressing (Agussalim and Lorica, 2019).

The advantage of this nonpharmacological action is that warm compresses can be done alone at home and are simple. Besides, this action can be used as first aid when pain strikes (Ambardekar, 2020).

Observation of the effect of warm compresses on pain intensity is important to do, to reduce pain felt by the elderly non-pharmacologically.

## **2. METHOD**

This research is a quasi-experimental study with a one-group pre-post test design. The sample consisted of 42 elderly with rheumatoid arthritis pain in the Puskesmas Medan sandpaper with total sampling. The instrument used in this study was the Numerical Rating Scale (NRS) with a scale of 0-10. A scale of 0 means no pain and 10 means severe pain, water thermometer, hot jar, water with a temperature accuracy of 50-60 °C. Data analysis was performed using the Wilcoxon Singed-Ranks test  $P < 0.05$  to determine the effect of warm compresses on pain scales in the elderly with rheumatoid arthritis.

The data collection process was carried out before and after the action was taken.

a. Before intervention

The elderly were measured pain scale. Do a warm compress for 20 minutes with

a hot jar with a water temperature of 50-60 °C. compresses are applied to the painful area. Namely: knee

b. After the intervention

The elderly were measured the pain scale back.

**3. RESULT**

**1. Characteristic Table of Pain Scale Pre – Post Warm Compress (n=81)**

Pain Scale Characteristic	Mild		Moderate	
	N	%	N	%
Pre	1	2,4	41	97,6
Post	38	90,5	4	9,5

Based on Table 1. It shows that the results of measuring the pain scale using a numerical scale (Numerical Rating Scale) of pre and post-intervention for 42 respondents. The results showed that before the warm compress was carried out, the characteristics of mild pain were 1 person (2.4%) and moderate pain was 41 people (97.6). After doing warm compresses, the characteristics of mild pain were 38 people (90.5%) and moderate pain was 4 people (9.5%).

**2. Elderly’s Pain Scale Pre-Post Warm Compress (n=81)**

	Mean	N	Std. Deviation	Std. Error Mean
Pre	4,57	42	0,703	0,109
Post	2,10	42	1,165	0,180

Based on Table 2. Showed that it can be seen the meaningful descriptively which describes the effect of warm compresses on the pain scale of the elderly who experience pre and post-intervention rheumatoid arthritis.

**3. The difference of Elderly’s Pain Scale Pre-Post Warm Compress (n=81)**

Null Hypothesis	Test	Sig.	Decision
<i>The median of differences between pre and post equal 0</i>	<i>Related samples Wilcoxon Signed Rank Test</i>	0,000	<i>Reject the null hypothesis</i>

Based on table 3. It shows that the Wilcoxon test results obtained  $p$ -value = 0.000. These results indicate that the  $p$ -value  $<0.05$ , where there is a significant difference between pre and post-warm compress intervention so that warm compresses have an effect on the scale of pain in the elderly with rheumatoid arthritis.

#### **4. DISCUSSION**

Based on the results of the pain scale study in the elderly, before being given a warm compress for 20 minutes in the initial conditions (pretest), the mean value was 4.57 (SD = 0.703). After being given a warm compress for 20 minutes (posttest), the mean value was 2.10 (SD = 1.165). This statement means that there is a decrease in the pain scale of 2.47. From the results of the research analyzed with the Wilcoxon test, the  $p$ -value was obtained = 0.000. This indicates that the  $p$ -value  $<0.05$ , means that there is a significant reduction in the pain scale in the elderly between pre-intervention warm compresses and post warm compress intervention so that warm compresses have an effect on the scale of pain in the elderly with rheumatoid arthritis.

The results of this study are in line with Ambardekar's (2020) opinion that a warm compress on the rheumatoid joint will deactivate the nerve fibers that cause muscle spasms. The use of this therapy on the body can improve the flexibility of tendons and ligaments, reduce muscle spasms, relieve pain, increase blood flow, and increase metabolism. Heat can enlarge blood vessels, increase supply to areas of the body, can be soothing.

The same opinion was expressed by Potter, Perry, Stockert, and Hall (2013) that warm compresses cause softening of fibrous tissue, make the body's muscles relax, reduce pain, and increase blood supply and provide calm to clients.

The heat inactivates the nerve fibers that cause muscle spasms and the heat can cause the release of endorphins, which are very strong opiates, such as chemicals that block pain transmission. In general, increased blood flow can occur in parts of the body that are warmed because heat tends to relax the walls of blood vessels, heat is the best for increasing flexibility (Hinkle & Cheever, 2014).

Hot compresses can help relieve pain, stiffness, and muscle spasms. Superficial heat can be applied in the form of a warm compress. Maximum benefits can be achieved within 20 minutes. Warm compresses are part of the cutaneous stimulation technique, which is one of the non-pharmacological interventions in pain management. Cutaneous stimulation techniques can overcome pain because they reduce perception by stimulating pain that is transmitted to the brain (Hinkle & Cheever, 2014)

The results of the study based on the characteristics of pain in the pre-intervention warm compress the average category of moderate pain was 97.6% and in the post-intervention warm compresses, the category of moderate pain was 9.5%. This is following research conducted by Agussalim and Lorica (2019) that the pain experienced by clients with rheumatoid arthritis is moderate.

Based on the results of the study, several elderly people did not experience a decrease in the pain scale. This can be seen in table 5.2. Description of the characteristics of the pain scale before doing warm compresses, the characteristics of mild pain were 1 person (2.4%) and moderate pain was 41 people (97.6). After doing warm compresses, the characteristics of mild pain were 38 people (90.5%) and moderate pain was 4 people (9.5%). According to the researchers' assumptions, rheumatoid arthritis pain was related to a psychological response.

In connection with this statement, according to Flink et al (2020), the psychological response is closely related to the client's understanding of the pain that occurs or the meaning of pain for the individual. Individuals who perceive pain as negative tend to have moods of sadness, grief, helplessness, and can turn into feelings of anger, frustration, and fatigue. Fatigue causes the pain sensation to intensify and reduces coping abilities. This can be a

common problem in individuals who suffer from a disease for a long time (Potter, Perry, Stockert, and Hall, 2013). Conversely, individuals who have a perception of pain as a positive experience will receive the pain they experience (Flink, et al., 2020).

## 5. CONCLUSION

This action is important to do as a non-pharmacological and independent action by nurses in providing nursing care for the elderly at home in reducing rheumatoid arthritis pain. It is safe, easy, inexpensive, and inexpensive. So it is very easy to apply.

## REFERENCES

- A., & Lorica, J. (2019). Warm Compress Reduced Pain Intensity of Arthritis Rheumatoid for Elderly People; Pre- and Post-test Design Study. *KnE Life Sciences*, 4(15), 1–10. <https://doi.org/10.18502/kls.v4i15.572>
- Ambardekar, N. (2020). Heat and Cold Therapy for Arthritis Pain. Accessed at <https://www.webmd.com/arthritis/heat-and-cold-therapy-for-arthritis-pain>
- Badan Pusat Statistik. (2020). *Statistik Penduduk lanjut Usia*. Jakarta.
- Flink, I., Reme, S., Jacobsen, H., Glombiewski, J., Vlaeyen, J., Nicholas, M., Main, C., Peters, M., Williams, A., Schrooten, M., Shaw, W. & Boersma, K.

- (2020). Pain psychology in the 21st century: lessons learned and moving forward. *Scandinavian Journal of Pain*, 20(2), 229-238. <https://doi.org/10.1515/sjpain-2019-0180>
- Hinkle, J., Cheever, K. (2017). Brunner & Suddarth's Textbook of Medical-Surgical Nursing. 14th Ed. LWW
- Kementerian Kesehatan RI. (2019). Laporan Nasional Riskesdas 2018. Jakarta: Lembaga Penerbit Badan Penelitian dan Pengembangan Kesehatan.
- Kobak, S., & Bes, C. (2018). An autumn tale: geriatric rheumatoid arthritis. *Therapeutic advances in musculoskeletal disease*, 10(1), 3-11. <https://doi.org/10.1177/1759720X17740075>
- Potter, P.A., Perry, A.G., Stockert, P., & Hall, A. (2013). Fundamentals of Nursing . 8 th ed. St. Louis: Mosby
- Roma, Izabela, Almeida, Mariana Lourenço de, Mansano, Naira da Silva, Viani, Gustavo Arruda, Assis, Marcos Renato de, & Barbosa, Pedro Marco Karan. (2014). Quality of life in adults and elderly patients with rheumatoid arthritis. *Revista Brasileira de Reumatologia*, 54(4), 279-286. <https://doi.org/10.1016/j.rbr.2014.03.025>
- Serhal, L., Lwin, M., Holroyd, C., Edwards, C. (2020). Rheumatoid arthritis in the elderly: Characteristics and treatment considerations. *Autoimmunity Reviews*. 19(6). <https://doi.org/10.1016/j.autrev.2020.102528>.
- WHO. (2018). Ageing and Health. Accessed at <https://www.who.int/news-room/fact-sheets/detail/ageing-and-health>
- WHO. (2020). WHO launches Baseline report for Decade of Healthy Ageing. Accessed at <https://www.who.int/news/item/17-12-2020-who-launches-baseline-report-for-decade-of-healthy-ageing>
- WHO. (2021). Ageing and health in the South-East Asia Region. Accessed at <https://www.who.int/southeastasia/health-topics/ageing#:~:text=The%20population%20in%20WHO%20South,2030%20and%20by%202050%2C%20respectively.>