

LITERATURE REVIEW: WARM COMPRESS WITH MEDICINE PLANTS TO REDUCE JOINT PAIN IN THE ELDERLY

Dwi Widyastuti*, Ramdhani Ismahmudi, Burhanto, Afina Agma Fazalina, Auliya Fitri, Fathimah Az-Zahra, Putri Puji Astuti

Faculty of Nursing, Universitas Muhammadiyah Kalimantan Timur, Jl. Ir. H. Juanda No.15, Sidodadi, Samarinda Ulu, Kota Samarinda, Kalimantan Timur 75124, Indonesia

*dw530@umkt.ac.id

ABSTRACT

Medicinal plants or herbs have been widely used as a companion or substitute for drugs made from chemicals to overcome health problems. The existence of these medicinal plants can prevent the elderly from using chemical painkillers can cause side effects when consumed for a long time. Some medicinal plants such as onions, ginger, lemongrass, and cinnamon have several active compounds that can reduce joint pain experienced by the elderly by giving warm compresses to the inflamed area. Purpose: to provide evidence-based information obtained from the results of a literature review related to the provision of warm compresses made from medicinal plants in the form of onions, ginger, lemongrass, and cinnamon to reduce joint pain in the elderly. Method: this study is to search for data sources for journal articles through the Google Scholar database, Research Gate, Elsevier, Sage, Portal Garuda, Scopus, Knowledge E, Sinta, Litbangkes with a span of 5-10 years, both in Indonesian and English. Results: based on 73 studies, it was found that giving warm compresses made from onions, ginger, lemongrass, and cinnamon can reduce joint pain in the elderly in the range of moderate to mild pain. Conclusion: giving warm compresses made from medicinal plants onion, ginger, lemongrass, and cinnamon can reduce joint pain experienced by the elderly.

Keywords: cinnamon; ginger; lemongrass; medicinal plants; onions; warm compresses

INTRODUCTION

Along with the aging process that occurs, one of the systems will experience changes in the musculoskeletal system. Changes that occur in the musculoskeletal system include changes in collagen and elastin which are connective tissues, decreased cartilage ability, bone density, decreased elasticity in joints, and changes in muscle structure (Anggraini & Yanti, 2019). This situation causes changes in the structure and shape of the joints and can cause joint pain (Noviyanti & Azwar, 2021)

Joint pain is one of the most frequently complained by the elderly because it results in disruption of the performance of the elderly body parts in the form of discomfort when touched, limitations in activities, swelling, stiffness, and inflammation besides joint pain will cause discomfort and even lead to disability which causes a decrease in quality elderly life due to disruption of daily activities (Zahroh et al., 2019). The prevalence of joint disease in Indonesia according to the 55-64 year age group is 15.5%, the 65-74 year age group is 18.6% and the age group above 75 years is 18.9% (Risksdas, 2018). To overcome joint pain there are 2 interventions, namely by using pharmacological therapy and non-pharmacological therapy.

The use of pharmacological therapy such as analgesics can pose risks when consumed in the long term and excessive doses as (Kamaldeen et al., 2012) described the side effects caused by dependence and tolerance to opioids and gastric ulceration due to NSAIDs, based on this, non-pharmacological therapy is needed. which tends to be safer for the elderly, namely by using

natural ingredients derived from medicinal plants or herbs which are considered relatively cheap and safe (Niken et al., 2018). Previously, pain management used non-pharmacological methods in the form of physical modality therapy of cutaneous stimulation by giving simple warm compresses aimed at controlling pain. This cutaneous stimulation can temporarily relieve pain effectively because this technique distracts the patient and focuses his attention on the tactile stimulus away from the painful sensation so that the perceived pain perception is reduced (Margowati & Priyanto, 2017). The use of warm compresses is growing along with changes that occur in society, namely returning to nature (back to nature) by returning to using natural ingredients in the form of medicinal plants for treatment (Wijayakusuma, 2008). Several studies have modified this modality therapy, namely by giving warm compresses not only using ordinary warm water but mixing it with medicinal plants such as onions, ginger, lemongrass, and cinnamon. This medicinal plant is considered to be able to reduce joint pain experienced by the elderly because of the active compounds in it. Based on this, researchers need to dig deeper by reviewing the literature of previous studies to get clearer information about giving warm compresses made from medicinal plants onion, ginger, lemongrass, and cinnamon to reduce joint pain in the elderly.

METHOD

This study uses a literature review design or literature review by conducting searches and studies of various journals, books, and other publications related to the research topic to produce a written work with a particular topic (Marzali, 2016). The data used in the study is secondary data obtained from the results of research that has been carried out by previous researchers. The literature search strategy using standardized data based is Google Scholar, Research Gate Elsevier, Sage, Garuda Portal, Scopus, Knowledge E, Sinta, and Litbangkes. Search articles or journals using keywords or keywords that match the research topic, namely warm compresses, medicinal plants, onions, ginger, lemongrass, and cinnamon. Researchers also determine the inclusion criteria in reviewing research articles or journals, namely 1. The research being reviewed is in the last 5-10 years starting from 2010-2020 in full-text form, 2. The research article being reviewed is research with case study designs and experiments, and 3. Articles reviewed are only articles in Indonesian and English

RESULTS

The results of journal identification through data-based searches were obtained from Google Scholar, Research Gate, Elsevier, Sage, Portal Garuda, Scopus, Knowledge E, Sinta, Litbangkes, obtained as many as 467 research journal articles, then similar/same research journal articles were deleted and 275 journals were obtained. then re-filtered according to the topic of discussion, 207 research journal articles were obtained, after that, the research journal articles were re-analyzed according to the inclusion criteria, 132 research journal articles were obtained, after which a thorough review of the appropriate journals was carried out as many as 73 research journals consisting of 32 Indonesian-language journals and 41 English-language journals.

These 73 research journals include 18 research journals examining the effect of giving warm onion compresses to reduce the joint pain scale of the elderly, 20 journals about giving ginger warm compresses to reducing the joint pain scale of the elderly, 18 journals about the effect of giving lemongrass compresses to reduce the joint pain scale of the elderly, and 17 journals on the

effect of giving cinnamon compress on decreasing the joint pain scale of the elderly. Based on the journal reviews that have been carried out, the joint pain experienced by the elderly includes Rheumatoid Arthritis 24.7%, Gout Arthritis 26%, Osteoarthritis 16.43%, and joint pain of unknown cause 31.5%. The provision of warm compresses made from onions, ginger, lemongrass, and cinnamon can reduce joint pain in the elderly from moderate to mild. In a research journal, it was also found that giving warm compresses made from medicinal plants will increase its ability to reduce joint pain when assisted with combination therapies such as kineostaping, acupressure, and light activity exercises.

DISCUSSION

In general, the appearance of joint pain in the elderly is caused by a degenerative process and this condition is exacerbated by the emergence of diseases that attack the joints due to excessive activity, and unhealthy lifestyles such as consuming foods high in purines and alcohol. Riskesdas data in 2018 explains that the cause of joint pain is due to disorders of the musculoskeletal system or joint diseases such as osteoarthritis, pain due to high uric acid or acute or chronic hyperuricemia, and rheumatoid arthritis. Research by (Rahayu et al., 2017) and (Purnamasari & Listyarini, 2017) found that the elderly who experience joint pain is generally caused by the excessive activity to the age factor and the type of food consumed by the elderly (Dwipayanti et al., 2018). Research by Salim. A & Lorica. J (2019) that warm temperatures can accelerate blood circulation so white blood cells or white blood cells can repair damaged tissue at the site of inflammation, therefore this therapy can reduce the scale of pain intensity in the elderly with rheumatoid arthritis. Giving warm compresses to dryness can cause vasodilation of blood vessels so that muscle spasms are reduced due to relaxation due to the perceived warm temperature, as well as repairing damaged tissue at the location given warm compress therapy (Kismiyati, 2017).

The use of warm compresses made from onions, ginger, lemongrass, and cinnamon is scientifically able to reduce inflammation that causes joint pain in the elderly. In addition to the effect of a warm compress, it is also added with medicinal plants that have active compounds with mutually supportive functions. Giving warm compresses made from onions and garlic contains allicin which functions as an anti-inflammatory and can reduce joint pain. In addition to the content of active compounds such as flavonoids found in shallots function as anti-inflammatory and anti-inflammatory, active substances such as allin which when crushed will give a heating effect, and the active substance kaemferol which functions as Inhibitors of the cyclooxygenase enzyme because this enzyme functions to reduce the process of prostaglandin synthesis which causes vasodilation of blood vessels and reduces the process of inflammatory cells in areas experiencing joint pain. However, because of the Alliinase enzyme which converts Allin molecules into molecules that have a sharp and pungent smell, respondents complain of an annoying odor when compressing onions. (Fadlilah & Widayati, 2018)

Giving warm compresses made from ginger can reduce joint pain in the elderly due to the presence of gingerol which causes a hot and spicy feeling. The type of ginger that is most effectively used because it has a greater spicy and hot taste is red ginger. Ginger also has essential oils of 1-3%, in essential oils contained monoterpene which can reduce pain in addition to improving blood circulation and inflammation in the joints. Gingerol contained in can provide a hot and spicy effect. There are three main ingredients in red ginger that can provide biological

effects on the body including anti-inflammatory or anti-inflammatory, namely Gingerol, shogaol, and paradol. The content of ginger can have the effect of reducing pain and increasing the activity of healing tissue damage, anti-inflammatory, oleoresin can enter the skin to the peripheral circulation without causing damage or irritation, and increase permeability (Yanti E, Arman E, 2018).

Meanwhile, giving a warm compress made from lemongrass because of the substance that functions as a warmer, anti-inflammatory and able to improve blood flow so that a warm compress with lemongrass can be an alternative in overcoming joint pain, besides that, a warm compress with lemongrass can be done independently because of the way it is given. Simple therapy also has a lower risk for the elderly compared to pharmacological therapy with drug (Olviani et al., 2020). The substance in question is a cyclooxygenase enzyme that can reduce inflammation by being absorbed through the skin. Not only that, but lemongrass also has a pharmacological effect, namely a warm spicy taste, the effect resulting from this warm feeling then stimulates the effector system to issue a signal so that vasodilation occurs in blood vessels which causes changes in blood vessel size. In lemongrass, there is also an essential oil that is able to provide a spicy taste as well as warm which is useful as an anti-inflammatory as well as anti-inflammatory because the hot sensation possessed by lemongrass is able to launch flow and can increase the supply of oxygen to tissues and cells so that it can reduce pain (Olviani et al., 2020)

Giving warm compresses made from cinnamon itself is caused by the presence of essential oils where according to Niken et al (2020) the essential oil in cinnamon bark contains eugenol which has a spicy and hot taste so that it can open the skin pores. The content of cinnamaldehyde in cinnamon can enter the body through the enlarged skin pores. Cinnamaldehyde can also inhibit lipoxygenase which is an intermediate in the body to convert free arachidonic acid into leukotrienes. Based on the results of the analysis of existing studies, most of them did not mention a decrease in the number of specific scales, but the average elderly experienced a change in the scale of severe pain to moderate, moderate to mild pain, to mild to no pain, and this scale change occurred after carried out several times giving warm compresses of medicinal plants and additional interventions such as gymnastics and acupuncture until finally giving a response in the form of decreasing the pain scale. The thing that needs to be underlined is that pain can be influenced by various factors so that it is likely that there will be different interpretations from each individual to determine the scale of joint pain felt. Pain between individuals will differ according to the pain threshold and how the individual tolerates pain (Taufandas et al., 2018)

CONCLUSION

Giving warm compresses made from onions, ginger, lemongrass, and cinnamon further increases the ability to reduce joint pain experienced by the elderly. The presence of active compounds in onions, ginger, lemongrass, and cinnamon can provide a sense of heat and warmth and reduce inflammation, its safe for the elderly because it does not cause side effects that harm the health of the elderly in the long term. Giving warm compresses made from medicinal plants is given regularly to changes in the scale of joint pain in the elderly.

REFERENCES

- Anggraini, S. N., & Yanti, N. F. (2019). Nyeri Sendi Lansia Dengan Arthritis Gout Di Panti Sosial Tresna Werda Khusnul Khotimah Pekanbaru. *Health Care : Jurnal Kesehatan*, 7(2), 69–76.
- Dwipayanti, P. I., Supriani, A., Rosyidah, N. N., & Mufida, N. (2018). the Effect of Warm Ginger Compress Towards Joint Pain of the Elderly At Upt Panti Werda Mojopahit, Mojokerto District. *Nurse and Health: Jurnal Keperawatan*, 7(2), 100–105. <https://doi.org/10.36720/nhjk.v7i2.43>
- Fadlilah, S., & Widayati, R. W. (2018). Efektivitas Kompres Bawang Merah Terhadap Nyeri Sendi Pada Lansia Di Dusun Sanggrahan Wedomartani Ngemplak Sleman Yogyakarta. *Jurnal Kesehatan*, 9(2), 177–184.
- Kamaldeen, A. S., Omuya, L. M., Buhari, A. S. M., Saka, A. O., & Saka, M. J. (2012). Evaluation of analgesics usage in pain management among physicians. *Journal of Applied Pharmaceutical Science*, 2(6), 194–198. <https://doi.org/10.7324/JAPS.2012.2618>
- Kismiyati, I. K. S. (2017). Comparison between Warm Compress and Massage to the Pain Intensity for Elderly Who Have Arthritic Pain in Bina Lanjut Usia Compound Jayapura. *International Journal of Science and Research (IJSR)*, 6(10), 1623–1626. <https://doi.org/10.21275/ART20177537>
- Marzali, A.-. (2016). Menulis Kajian Literatur. *Jurnal Etnografi Indonesia*, 1(2), 27.
- Margowati, S., & Priyanto, S. (2017). Pengaruh Penggunaan Kompres Kayu Manis (Cinnamomum Burmani) Terhadap Penurunan Nyeri Penderita Arthritis Gout. *Jurnal, February*, 598–607. <http://lpp.uad.ac.id/wp-content/uploads/2017/05/75.-sri-margowati-598-607.pdf>
- Niken, Patricia, H., & Apriyeni, E. (2018). Pengaruh Kompres Hangat Kayu Manis (Cinnamomun Burmani) Terhadap Penurunan Nyeri Penderita Arthritis Gout. *Jurnal Kesehatan Saintika Meditory*, 1(August), 79–88. <http://jurnal.syedzasaintika.ac.id/index.php/meditory/article/view/244>
- Noviyanti, & Azwar, Y. (2021). Efektifitas Kompres Jahe Terhadap Penurunan Nyeri Sendi Pada Lansia Dengan Arthritis Rheumatoid. *Jurnal Ilmiah Permas*, 11(1), 185–192.
- Olviaani, Y., Sari, E. L., & Sari, E. L. (2020). Pengaruh Kompres Hangat Rebusan Air Serai Terhadap Penurunan Nyeri Arthritis Rheumatoid Pada Lansia di Panti Sosial Tresna Werda Budi Sejahtera Banjarbaru Provinsi Kalimantan Selatan. *Dinamika Kesehatan: Jurnal Kebidanan Dan Keperawatan*, 11(1), 387–396. <https://doi.org/10.33859/dksm.v11i1.536>
- Purnamasari, S. D. I., & Listyarini, A. D. (2017). Kompres Air Rendaman Jahe Dapat Menurunkan Nyeri Pada Lansia Dengan Asam Urat di Desa Cengkalsewu Kecamatan Sukolilo Kabupaten Pati. *Jurnal Keperawatan Dan Kesmasayarakatan Cendekia Utama*, 1(4), 19.
- Rahayu, H. T., Sri, N., & Sunardi, S. (2017). *The Effectiveness of Red Ginger Compress Therapy*

(Zingiber officinale rosc. var. rubrum) on Elders with Joint Pain. 2(Hsic), 374–380.
<https://doi.org/10.2991/hsic-17.2017.58>

Riskesdas (2018). Diakses pada 27 Oktober 2020 dari
https://kesmas.kemkes.go.id/assets/upload/dir_519d41d8cd98f00/files/Hasil-riskesdas-2018_1274.pdf.

Taufandas, M., Rosa, E. M., & Afandi, M. (2018). Pengaruh Range Of Motion Untuk Menurunkan Nyeri Sendi Pada lansia Dengan Osteoarthritis di Wilayah Puskesmas Godean I Sleman Yogyakarta. *Care : Jurnal Ilmiah Ilmu Kesehatan*, 6(1), 36.
<https://doi.org/10.33366/cr.v6i1.785>

Yanti E, Arman E, dan R. D. (2018). Efektifitas Pemberian Kompres Jahe Merah (*Zingiber Officinale Rosc*) Dan Sereh (*Cymbopogon Citratus*) Terhadap Intensitas Nyeri Pada Lansia Dengan Arthritis Rheumatoid. *Jurnal Kesehatan Saintika Meditory*, 1(August), 79–88.
<http://jurnal.syedzasaintika.ac.id/index.php/meditory/article/view/24>

Wijayakusuma, H. M. 2008. *Ramuan Lengkap Herbal Sembuhkan Penyakit*. Pustaka Bunda. Jakarta.

Zahroh, C., Faiza, K., Rusminingsih, E., Agustina, N. W., Wulan, D. A. N., Firdaningsih, Amirullah, Amin, A. N., Mujib Hannan, Emdat Supriyanto, H. Y., . A., Lorica, J., Richard, S. D., Ayu, D., Wulan, K., Basuny, N. A. E. M., Zatton, H. K., Abo- Hashem, M. M. M., Putri, O. R., Andarmoyo, S., ... Nimah, L. (2019). Effect of the Use of Warm Water Compresses on the Decrease in Pain Intensity in the Elderly At Community. *International Journal of Science and Research (IJSR)*, 9(2), 55.
[https://www.ijsr.net/archive/v6i10/ART20177537.pdf%0Ahttp://eprints.undip.ac.id/46653/1/PROCEEDING_SEMILNASKEP_UNDIP_2015_.pdf#page=241%0Ahttps://www.ijsr.net/archive/v7i5/ART20182085.pdf%0Afile:///C:/Users/Uli Nur S/Documents/Skripsweet 2019/new artikel/](https://www.ijsr.net/archive/v6i10/ART20177537.pdf%0Ahttp://eprints.undip.ac.id/46653/1/PROCEEDING_SEMILNASKEP_UNDIP_2015_.pdf#page=241%0Ahttps://www.ijsr.net/archive/v7i5/ART20182085.pdf%0Afile:///C:/Users/Uli%20Nur%20S/Documents/Skripsweet%202019/new%20artikel/)