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Implementation of Warm Moringa Leaf Compress Therapy to Reduce Pain in Clients with Gout Arthritis

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ABSTRACT

Gout arthritis, or uric acid, is a disease that affects the joint system, caused by factors such as age, gender, medical history, and obesity. A warm compress using moringa leaves, which contain low molecular weight flavonoids, allows the compounds to easily dissolve in water and be absorbed by the skin's pores. This can lead to vasodilation (expansion of blood vessels), which improves blood flow to the painful areas of the body. The aim of this study was to reduce pain experienced after health education and demonstration. Method the research used a case study method with two respondents in the Kota Uneng Subdistrict. The results from the case study showed that the application of warm moringa leaf compresses for 4 days successfully reduced pain in both patients with gout arthritis. Both clients were able to control their pain and independently perform the moringa leaf warm compress therapy. Therefore, the warm compress therapy with moringa leaves has been proven effective in reducing pain in gout arthritis patients.

Keywords: Gouty Arthritis; Moringa leaves; Pain

INTRODUCTION

Gout, or gouty arthritis, is a joint disease caused by high levels of uric acid in the blood. A person is considered to have this condition if their uric acid level exceeds the normal limit, namely 7 mg/dL for men and 6 mg/dL for women (1). Excessive uric acid levels can lead to the accumulation of uric acid in the joints and other organs. This buildup causes pain, tenderness, and swelling in the joints, making movement painful and potentially leading to joint abnormalities or damage, and even disability (2).

Based on data from the Health Office of East Nusa Tenggara Province, the age group most vulnerable to gout is ≤ 65 years, accounting for 18.9%, and it occurs more frequently in women at 8.5%. In 2013, the prevalence of gout arthritis in East Nusa Tenggara was 20%, and in 2018 it increased to 23.5%. Elderly individuals are more susceptible to gout because their bodies have a reduced ability to excrete uric acid. Gout is characterized by recurrent pain caused by the accumulation of monosodium urate crystals in the joints due to high levels of uric acid in the blood. This pain can affect physiological changes and impact body function (3).

Older adults are more vulnerable to gout due to decreased excretion of uric acid from the body. This condition is marked by recurring pain caused by the deposition of monosodium urate crystals in the joints as a result of elevated uric acid levels in the blood (4). Efforts to

reduce pain in gout patients can be carried out through pharmacological and non-pharmacological approaches. Pharmacological approaches involve administering analgesic medications, while non-pharmacological approaches include various pain management techniques such as relaxation techniques, music therapy, and hydrotherapy (5). One non-pharmacological method that can be applied to relieve gout pain is hydrotherapy, such as warm compresses. The use of warm compresses is common and can be combined with various herbal plants, such as ginger, lemongrass, turmeric, temulawak, moringa leaves, and others (2).

Moringa leaves used in warm compresses contain flavonoids with low molecular weight, making them easily soluble in water and readily absorbed through the skin pores. This facilitates absorption by the epithelium and triggers vasodilation (widening of blood vessels), which in turn increases blood flow to the affected painful area (6). Evidence from research conducted by Widiyanto et al., showed that the pre-test pain scale using warm moringa leaf compresses was 5 and decreased to 1 in the post-test (7). Similarly, research by Maula & Ulfah reported that before the intervention the pain scale was 5 and decreased to 2 after the application (8). Pain can be measured using various indicators, and this study uses the Numeric Rating Scale (NRS) because it has demonstrated sensitivity to changes in pain intensity. The validity and reliability of the NRS make it suitable for use in adult and elderly patients (9).

One of the benefits of warm compresses, in addition to providing warmth and relieving pain, is their ability to dilate blood vessels and improve local blood circulation (10) Based on a preliminary study conducted in January 2025 in the working area of Kopeta Community Health Center, Kota Uneng Village, involving two elderly respondents, both reported similar complaints of tingling, cramps, and knee pain. Pain that persists or is not properly managed can lead to long-term stress responses, reducing the body's resistance by impairing immune function and accelerating tissue damage, thereby affecting overall health quality (11). Both respondents were not aware of non-pharmacological methods to reduce pain caused by high uric acid levels, such as the use of warm compresses combined with moringa leaves.

Based on the background above, the author is interested in conducting a study entitled The Implementation of Warm Moringa Leaf Compress Therapy to Reduce Pain in Clients with Gout Arthritis at Kopeta Community Health Center.

METHODS

The research design used is an applied case study employing a descriptive research method (12). The researcher describes the characteristics of joint pain and the administration of warm moringa leaf compress therapy. The researcher approaches two respondents through interviews and observations to collect data prior to the application of the warm moringa leaf compress.

This case is a descriptive survey in which the researcher is directed to describe or elaborate a problem through a particular case. In data collection, the researcher uses a nursing care approach, which includes data identification from assessment results, nursing diagnoses, nursing interventions, nursing implementation, and nursing evaluation. This study was conducted in Kota Uneng Village, within the working area of Kopeta Community Health Center, from January 7 to January 18, 2025. The study involved two respondents with the same condition, namely gout arthritis, also referred to as hyperuricemia in this final scientific paper.

The research process began with initial data collection through interviews and observations of two patients with the same health problem. Warm moringa leaf compresses were applied for four consecutive days. The pain scale of Mrs. L.D decreased to (2), which falls into the mild pain category. Meanwhile, Mrs. M.A initially had a pain scale of (6), categorized as moderate pain, and after four consecutive days of warm moringa leaf compress therapy, her pain scale decreased to (3), which is categorized as mild pain. After the initial assessment, the researcher and both patients planned the schedule for the nursing intervention. The intervention provided to both patients was warm moringa leaf compress therapy following the applicable standard operating procedures (SOP). The implementation process was carried out for both patients at the same time, for four days, with a duration of 20 minutes per session.

The data analysis technique was conducted by elaborating all responses obtained from interviews and observations (13). The data collected, ranging from assessment to nursing evaluation, are presented in the form of narrative text tables.

RESULTS

In this study, there were two respondents of the same gender, namely female. Respondent I, identified as Mrs. L.D, was 69 years old, and Respondent II, identified as Mrs. M.A, was 68 years old. Both respondents were found to have the same condition, namely gout arthritis.

Table 1. Results of pain scale measurement in gout patients before the application of warm moringa leaf compress therapy

Respondent	Pain Scale	Category
Mrs. L.D	5	Moderate
Mrs. M.A	6	Moderate

Primary Data Source

Based on Table 1 above, the pain scale of both respondents before the application of warm moringa leaf compress therapy was obtained as follows: Mrs. L.D had a pain scale of 5, which falls into the moderate category, while Mrs. M.A had a pain scale of 6, also categorized as moderate pain.

Table 2. Results of pain scale measurement in gout patients after the application of warm moringa leaf compress therapy

Respondent	Pain Scale	Category
Mrs. L.D	2	Mild
Mrs. M.A	3	Mild

Primary Data Source

Based on Table 2 above, the pain scale of both respondents after the application of warm moringa leaf compress therapy showed that Mrs. L.D had a pain scale of 2, which falls into the mild category, while Mrs. M.A had a pain scale of 3, also categorized as mild pain.

Table 3. Comparison of gout pain scale before and after the application of warm moringa leaf compress therapy

Characteristics	Respondent	
	Mrs.L.D	**Mrs.M.A**
Before	5 (Moderate Pain)	6 (Moderate Pain)
After	2 (Moderate Pain)	3 (Moderate Pain)

Primary Data Source

Based on the comparison data above, it was found that the pain scale of Mrs. L.D before the application of warm moringa leaf compress therapy was 5, and after the intervention it decreased to 2, which falls into the mild pain category. Meanwhile, Mrs. M.A had a pain scale of 6 before the intervention, and after the implementation of the warm moringa leaf compress therapy, it decreased to 3, which is categorized as mild pain.

DISCUSSION

Based on the assessment results, the researcher found subjective data in the patient Mrs. L.D, aged 69 years and female. According to the theory proposed by Widiyanto et al., age can be considered a risk factor for gout, because as age increases, the body's metabolic processes undergo changes, and gout is a condition caused by disturbances in uric acid metabolism in the body (7).

Family support is greatly needed for clients with gout arthritis to help manage their health problems, such as adherence to medication, maintaining a healthy lifestyle, and regulating a diet low in purines. This is in line with the theory of Sabrawi et al. (14), which explains that family support includes the extent to which the family provides food, clothing, protection, and care for sick family members, as well as the family's knowledge about health and illness, and their ability to maintain and improve the health status of each member so they can carry out daily activities without limitations (15).

Both respondents showed a lack of knowledge regarding daily dietary management. Uric acid levels in such patients can be reduced through health education related to dietary patterns associated with the condition. This finding is consistent with experts (16). In addition, both respondents did not utilize healthcare services or maintain access to health facilities related to existing health programs, such as elderly integrated service posts (posyandu lansia), which are still underutilized (17). Knowledge is the result of a person's awareness obtained through sight and hearing, and it is also influenced by education (18).

The clients reported that their legs often experienced cramps and tingling accompanied by pain in both knees extending to the toes. Maulana et al., state that edema and joint pain, especially in the feet and knees, are common symptoms of gout arthritis (19). Increased uric acid levels in the body can lead to the accumulation of crystals in the joints. Oktaviani et al., also noted that, in addition to dietary factors, uric acid levels are influenced by gender and age (20). Generally, older individuals are more susceptible to gout due to declining organ function associated with aging and cellular damage.

In this study, the patients' pain levels decreased from moderate to mild after receiving pain management through warm moringa leaf compress therapy. Warm compresses have various benefits, including providing warmth, relieving pain, dilating blood vessels, and improving local blood circulation (21). Increased blood circulation in the affected area can

reduce pain by accelerating the effect of the warm compress, which can also be combined with herbal plants, including moringa leaves (8).

In this study, the warm compress was applied using a small towel soaked in boiled moringa leaf water. The compress was applied once daily for 20 minutes in the morning for four consecutive days. The compress was applied to painful areas, namely both knees down to the soles and toes, while gently pressing the area. Based on the case study results, it can be concluded that the application of warm moringa leaf compress therapy is highly effective in reducing pain in clients with gout, in line with the theory of Widyastuti et al. (22). Moringa leaves contain important compounds beneficial to the body, including phytochemicals such as tannins, steroids, triterpenoids, flavonoids, saponins, and alkaloids, which have potential antibiotic properties (23).

Research conducted by Dwi Pratiwi & Mustikasari showed that warm moringa leaf compress therapy results in changes in pain intensity (24). The body sends signals to the hypothalamus through the spinal cord, and when heat-sensitive receptors in the hypothalamus are stimulated, the effector system releases signals that induce sweating and peripheral vasodilation. This is supported by the study of Widiyanto et al., which showed a decrease in pain scale from 5 (pre-test) to 1 (post-test) (7). Similarly, Maula & Ulfah reported a decrease from 5 to 2 (8), and Hidayatullah also confirmed that warm moringa leaf compress therapy significantly reduces pain levels in gout patients (9)

The results of this case study on patients with gout arthritis who received warm moringa leaf compress therapy for four days showed that the pain problem in both clients was successfully resolved. Both clients were able to control their pain and independently perform the warm moringa leaf compress therapy. Therefore, the application of warm moringa leaf compress therapy in patients with gout arthritis is proven to be effective in reducing pain. This is consistent with the findings of Siska et al., which state that the application of warm moringa leaf compress therapy is effective in reducing joint pain in elderly patients with gout (25).

CONCLUSION

In this case, after the administration of warm compress therapy using moringa leaves, there was a reduction in the pain experienced by the client in the area from the knees to the soles of the feet. On the first day of assessment, the pain scale was recorded at (6), indicating moderate pain intensity, and on the fourth day after the intervention, the pain scale decreased to (3), indicating mild pain intensity.

It is expected that the client can maintain a healthy lifestyle so that uric acid levels remain within normal limits, and independently apply non-pharmacological therapy using warm moringa leaf compresses to reduce joint pain. This is evidenced by the client appearing more relaxed, calm, and comfortable, with a reduction in facial expressions indicating pain. This shows that the application of warm moringa leaf compress therapy is effective in reducing pain in patients with gout arthritis.

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