

Application of Warm Cinnamon Compresses to Reduce Pain Scale in Older Adults with Gout Arthritis in the Simpang Periuk Health Center Working Area 2023

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ABSTRACT

Patients with Gout Arthritis often suffer from intense pain. While there's no one-size-fits-all cure for joint pain in older adults with this condition, there are various ways to ease the discomfort. Cinnamon compresses can help alleviate the symptoms. Compounds like eugenol and cinnamaldehyde in cinnamon create a warm feeling on the skin, calming inflammation by slowing down pain signals. This can help lower sensitivity to pain and make it easier to manage. The case study method used was a descriptive case study method, with two subjects of older ages with Gout Arthritis, using the format of assessment of family nursing care and evaluation of pain scales. Cinnamon compresses are carried out four times a week using 2 ml of cinnamon liquid, with 200cc of water, at a temperature of 40-45°C, followed by compresses for 15-20 minutes using a washcloth. After applying cinnamon compresses four times a week, the study showed a decrease in pain intensity before and after the intervention was given to the two subjects. The Subject's pain intensity decreased from moderate to mild pain. The application of cinnamon compresses is effective in reducing the intensity of Gout Arthritis pain.

INTRODUCTION

Gouty Arthritis represents a widespread joint inflammation causing excruciating pain. It is characterized by the accumulation of crystal deposits in the joints, resulting in swelling, redness, and intense pain in one or multiple joints, commonly observed in the big toe (World Health Organization, 2021).

The global incidence and prevalence of Gouty Arthritis continue to rise. An estimated 0.6 to 2.9 individuals per 1,000 people are diagnosed yearly (We et al., 2022). According to the Global Health Data Exchange (GHDx) and World Health Organization (WHO) records from 1999 to 2017, 41.2 million cases were reported worldwide, with 1.3 million individuals experiencing disability due to Gout Arthritis (Jason Lady, 2020; Mattiuzzi & Lippi, 2020).

In Indonesia, until 2018, Basic Health Research (Risikesdas) recorded joint and muscle-related issues, including Gout Arthritis, ranking as the second most prevalent health problem, affecting 713,783 people (7.30%). In South Sumatra Province, 22,013 cases were reported, with 644 patients recorded in Lubuklinggau City (Risikesdas, 2018).

At the Community Health Center Public Housing, data indicates visits from individuals suffering from joint pain over the past three years. In 2020, 242 people sought treatment, followed by 306 in 2021 and 293 in 2022 (Pusekesmas Simpang Periuk, 2023).

Despite the absence of a singular drug to address joint pain in older adults with Gout Arthritis, various treatment options exist. These treatments aim to alleviate symptoms and prevent long-term joint damage through pharmacological interventions, lifestyle changes, and complementary maintenance strategies (Vandever, 2019).

Applying warm compresses to herbs like cinnamon (*Cinnamomum burmani*) has become a widely practiced remedy across cultures. Cinnamaldehyde, a component within, possesses anti-inflammatory properties, aiding in alleviating joint pain (Cakra et al., 2021; Marvia, 2019). Research by Rizki & Panjaitan (2018) indicates that cinnamaldehyde (60.72%) and cinnamyl acetate (24.88%) are the primary active compounds found in cinnamon oil.

A study by Hartutik & Gati (2021) showcased the effectiveness of applying cinnamon compresses in the morning for one week (four sessions), using 2 ml of cinnamon oil in 200 cc of water at 40-45°C. The application, followed by a 15-20 minute washcloth compress, significantly reduced joint pain caused by Gouty Arthritis in the Kasiguncu Village, Central Sulawesi.

Another study by Septianingtyas & Yolanda (2021) demonstrated the efficacy of cinnamon compresses in lowering pain intensity in the Kwaron Ward Karangdowo Village, Klaten, attributing this to the compound's ability to inhibit the inflammatory process in individuals experiencing joint pain.

Given the aforementioned data, there is an interest in conducting a study titled "Application of Cinnamon Compress for Reducing Pain in Older adult Gouty Arthritis Patients in the Simpang Periuk Public Health Working Area of the Public Health Center, Lubuklinggau City National Housing Authority, 2023".

LITERATURE REVIEW

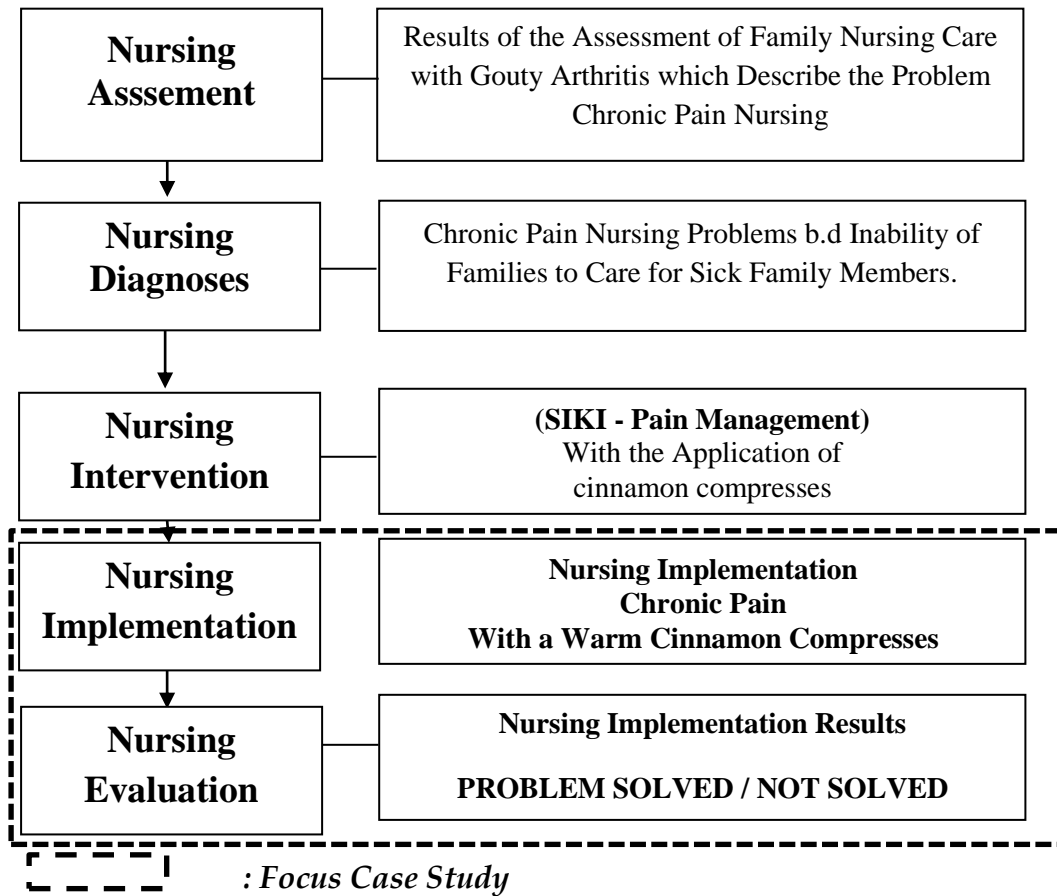


Figure 1. Conceptual Framework

METHODOLOGY

This study is a case report designed using a descriptive methodology. The primary objective is to objectively describe the circumstances of the study and conduct a deeper analysis of nursing care for patients suffering from acute, painful Gouty Arthritis within the Simpang Periuik Public Health Center working area in Lubuklinggau City.

The subjects of this study comprise two patients meeting the following criteria:

1. Inclusion Criteria:

- Clients were willing to participate as respondents in the study.
- Clients diagnosed with Gout Arthritis within the work area of the Public Health Center in Lubuklinggau City National Housing Authority.
- Clients experiencing acute joint pain due to Gouty Arthritis are assessed on a pain scale.
- Clients reporting painful complaints from Gouty Arthritis for more than three months.
- Clients aged 60 years or older.

2. Exclusion Criteria:

- Individuals with hypersensitivity to the cinnamony aroma.
- Individuals at risk of skin disturbances or irritation when undergoing cinnamon compress treatment."

RESULT

Nursing Assessment

Case I, identified as Mrs. H, is a 72-year-old female with a high school education and a homemaker by profession. She complains of acute pain in both right and left ankle joints, describing it as a stabbing sensation with a pain scale of 6. The pain arises during everyday activities and movement. Mrs. H has been diagnosed with Gouty Arthritis for the past two years. Her vital signs show a blood pressure of 140/90 mmHg, a respiration rate of 22 breaths per minute, a pulse rate of 82 beats per minute, and a temperature of 36.2°C.

Case II, identified as Mrs. O, is a 66-year-old female, Islam, with a bachelor's degree and retired from her profession. She complains of painful right and left knee joints and the right leg, similar to a stabbing pain with a scale of 5. Her pain lasts for 5-10 minutes and intensifies during activities. Mrs. O has been diagnosed with Gouty Arthritis for the past three years. Her vital signs indicate a blood pressure of 140/80 mmHg, a respiration rate of 20 breaths per minute, a pulse rate of 87 beats per minute, and a temperature of 36.6°C.

Nursing Diagnoses

Nursing diagnoses are clinical judgments about individual, family, and community responses to actual and potential health problems or life processes (Team Pokja SDKI DPP PPNI, 2017).

Theoretically, family nursing diagnoses that may appear in cases with Gouty Arthritis are as follows (Nurarif & Kusuma, 2015)(Bakri, 2021);

- 1) Chronic pain related to the inability of the family to provide care for sick family members.
- 2) Impaired Physical Mobility is related to the family's inability to provide care for sick family members.
- 3) Knowledge deficit related to the family's inability to recognize care for sick family members.

Based on the findings of the case study results (interviews and physical examination), and data analysis on both subjects only showed nursing diagnoses:

- 1) Chronic pain related to the inability of the family to provide care for sick family members.
- 2) Impaired Physical Mobility related to the inability of the family to provide care for sick family members.

Nursing Intervention

Give compress warm herbs and spices, cinnamon, to lighten up symptom pain. Based on research conducted (Hartutik & Gati, 2021), "application of compressed cinnamon in the morning day for one week (4

meetings), with compressed cinnamon, with dissolve fluid cinnamon 2-3 drops with 200 cc of water, at a temperature of 40-45 °C, continued with compress for 15-20 minutes use a *washcloth*."

Nursing Implementation

Subject I (Mrs. H) received the cinnamon compress from March 21 to 24, 2023. Subject II (Mrs. O) received the intervention from March 22 to March 25, 2023, with a 15-minute application daily for four consecutive days.

Nursing Evaluation

Evaluation represents the fifth stage in the nursing process, which is crucial for assessing the client's progress or overall well-being. It's important to note that evaluation is ongoing whenever nurses interact with clients. Nurses continuously make clinical decisions that guide ongoing nursing care throughout this process. The primary objective of nursing care is to address the client's current health issues, prevent potential risks, and maintain a healthy status (PPNI, 2017).

Following four days of nursing implementation, it can be concluded that the nursing problem has not been fully resolved overall. However, during these four days, the second Subject exhibited a reduction in pain intensity, moving from acute to mild pain.

There's a distinct difference in the pain reduction between Subject I (Mrs. H) and Subject II (Mrs. O). For Subject I, after applying the cinnamon compress, there was a gradual decrease in pain intensity. On the first day, the pain scale reduced from 6 to 5, then from 5 to 4 on the third day, finally reaching a light pain level of 3 on the fourth day.

Subject II, on the other hand, did not immediately experience a decrease in pain intensity after the cinnamon compress application. The pain scale remained constant at 5 on the first two days. However, by the third day, the pain reduced to a scale of 4, further decreasing to a level of 3 by the fourth day.

Table 1. Observations Subject I Pain Scale Before and after cinnamon Compress

No	Day/ Date	SUBJECT CLIENT CONDITIONS I				Information
		Time	Pain Scale Before	Time	Pain Scale After	
1.	Tuesday March 21 , 2023	09:00	6	10:00	5	There are changes
2	Wednesday March 22 , 2023	15:00	6	16:00	5	There are changes
3.	Thursday March 23 , 2023	15:00	5	16:00	4	There are changes
4	Friday March 24 2023	15:00	5	15:00	3	There are changes

Table 2. Observations Subject II Pain Scale Before and after cinnamon Compress

No	Day/Date	SUBJECT CLIENT CONDITIONS II				Information
		Time	Pain Scale Before	Time	Pain Scale After	
1.	Wednesday March 22 , 2023	09:00	5	10:00	5	No changes
2	Thursday March 23 , 2023	09:00	5	10:00	5	No changes
3.	Friday March 24 2023	09:00	4	10:00	3	There are changes
4	Saturday March 25 2023	09:00	4	10:00	3	There are changes

DISCUSSION

Nursing Assessment

Both subjects (Mrs. H and Mrs. 0) exhibit a primary complaint of painful joints, particularly in the knee, a common sign of Gouty Arthritis. This type of arthritis arises due to high uric acid levels, which can crystallize in the joints, causing severe pain, redness, swelling, and warmth in the affected areas (Yuniarti, 2022).

In patients with Gouty Arthritis, the bones within the affected joints become vulnerable and change. These changes progress slowly, resulting in pain, stiffness, swelling, decreased joint function, and potential disability (Parwata et al., 2020). Both female subjects and over 50 years old, belong to the primary risk group for Gouty Arthritis due to lower levels of uric acid excretion, which is especially prevalent in women (Mayo Clinic, 2022).

Another shared complaint between Subject I (Mrs. H) and Subject II (Mrs. 0) is difficulty performing activities or intolerance that hinders worship-related processes in Subject II. This difficulty often stems from stiffness experienced during initial movements of capsules, ligaments, muscles, and joint surfaces, commonly observed in Gout Arthritis (CDC, 2020).

This intolerance to activities results from osteophyte development, capsule thickening, muscle spasms, and pain, leading Gouty Arthritis sufferers to limit their movements within normal ranges, causing joint mobility limitations, especially in knee joints. Typically, capsule movement patterns restrict flexion more than extension (Wiraputra, 2017).

Objective data reveal that both subjects are categorized as obese (TK.I), with Mrs. H having a BMI of 26 (overweight) and Mrs. 0 having a BMI of 28 (overweight), according to a study conducted by Hi'miyah & Martini (2013) linking obesity to joint pain at Husada Main Surabaya Hospital. Accumulation of body fat increases bone load, predisposing individuals to painful joints and exacerbating joint pain (Mohi et al., 2016).

Mrs. H reports a pain scale of 6, while Mrs. 0 reports a pain scale of 5 with an intensity lasting 5-10 minutes. The difference in pain experience and

attention to the pain endured by Mrs. H appears more prolonged than that of Mrs. O. Other factors contributing to this difference include Mrs. H's living arrangement with her husband and children, enabling her to share and receive support. At the same time, Mrs. O lives with her daughter and works, reducing her time at home and, consequently, her opportunities for support. Thus, Mrs. H has a greater possibility of managing and lowering her perceived pain by sharing her experiences and gaining family support.

According to Zakiyah (2015), individuals who have previously experienced and currently face similar pain are more likely to cope with it effectively. The ability to overcome pain, its types, and the level of suffering is often influenced by familial and social support, where the support and protection provided by family or close friends significantly impact an individual's pain experiences."

Nursing Diagnoses

The knowledge deficit cannot be raised for both subjects; this is closely related to the time the client suffers from the disease and the nursing process. According to Bertalina and Purnama (2016), the length of time a person is diagnosed with an illness and is exposed to the treatment process will affect the patient's knowledge of the disease.

The priority problem in both subjects is chronic pain related to the inability of the family to provide care for sick family members; this is closely associated with the significant signs and symptoms in clients with rheumatoid arthritis, namely complaints of pain (Team Pokja SDKI DPP PPNI, 2017).

Nursing Evaluation

Based on the evaluation findings regarding the reduction of pain experienced by Subject I (Mrs. H), who has been battling Gout Arthritis for three years, it appears that her past experiences and prolonged illness have allowed her to manage and tolerate pain more effectively (Untari, 2019). Additionally, the active support of Mrs. H's family from the first day of the treatment, not only with the cinnamon compress application but also in promoting low-purine consumption, has contributed significantly. Studies emphasize the pivotal role and influence of family support in treating and managing clients with gouty arthritis (Rondonuwu et al., 2018).

The decline in pain for Subject II started on the third day, coinciding with increased active involvement by Mrs. S's child in her mother's treatment. Other factors influencing the pain experience include age, gender, and past pain encounters. Mrs. H's extensive expertise with Gouty Arthritis compared to Subject II has likely contributed to her better pain management (Ayuningtyas, 2018). The intervention implemented over four consecutive days led to a reduction in pain levels for both subjects, with Subject I experiencing a decrease from 6 to a manageable light pain level and Subject II's pain settling from 5 to a similar manageable, light level. This improvement is attributed not only to the effectiveness of the cinnamon compress used by the researchers for 15 minutes daily but also to educational measures and the family's active role.

Research supports the effectiveness of cinnamon compresses in reducing pain associated with Gouty Arthritis, emphasizing the compound cinnamaldehyde's ability to inhibit inflammation and alleviate joint pain (Cakra et al., 2021; Marvia, 2019). Furthermore, studies highlight the anti-inflammatory properties of cinnamon oil, mainly due to compounds like eugenol and cinnamaldehyde, which, upon entering the skin process, hinder the release of inflammatory agents, thus reducing pain sensitivity and increasing the pain threshold (Septianingtyas & Yolanda, 2021; Umah et al., 2020).

CONCLUSIONS AND RECOMMENDATIONS

Warm cinnamon compresses can reduce pain intensity in older adults with Gouty Arthritis. Cinnamon compresses are recommended to become a non-pharmacology therapy choice for chronic pain in older adults with Gouty Arthritis.

FURTHER STUDY

Limitations of research in this study: researchers only carried out implementation on a few subjects, namely only two subjects and in 4 days. Monitoring performance independently by issues and families cannot be controlled and monitored by researchers, so repetition of implementation independently by subjects and families affects the results of this study.

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