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THE EFFECT OF TEPID SPONGE THERAPY ON REDUCING JOINT PAIN IN GOUT ARTHRITIS AT GENERAL CENDEKIA HUSADA CLINIC

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ABSTRACT

Gout arthritis is a form of inflammatory arthritis characterized by acute joint pain, swelling, and redness due to the accumulation of uric acid crystals in the joints. Non-pharmacological pain management, such as tepid sponge therapy (warm compresses), is starting to be considered as a safe and easy alternative. This therapy is thought to increase vasodilation, improve blood circulation, and help reduce pain levels. The aim was to determine the effect of tepid sponge therapy on reducing joint pain levels in gout arthritis patients. The method used was This study used a quantitative design with a pre-experimental one-group pretest-posttest approach. A total of 33 respondents diagnosed with gout arthritis and experiencing mild to moderate joint pain were selected using a purposive sampling technique. Pain levels were measured using a Numerical Rating Scale (NRS) before and after the intervention. Tepid sponge therapy was performed for 15 minutes on the painful joint area, twice a day for 3 consecutive days. Data analysis used a Paired T-Test. Results: There was a significant reduction in pain levels after tepid sponge therapy. The results of the paired t-test showed a p-value of 0.000 ($p < 0.05$), indicating a significant effect of tepid sponge therapy on reducing joint pain in gouty arthritis. The conclusion is that tepid sponge therapy is effective in reducing joint pain in gouty arthritis sufferers. This intervention can be used as a simple and effective non-pharmacological treatment alternative to reduce joint pain.

Keywords

Gout Arthritis, Joint Pain, Tepid Sponge

Gout arthritis is a chronic metabolic disease characterized by recurrent attacks of acute joint pain, swelling, redness, and stiffness caused by the deposition of monosodium urate crystals in the joints due to hyperuricemia (Richette & Bardin, 2010; Zhang et al., 2006). This condition is a major cause of morbidity in adults, especially in middle-aged and elderly populations, and can significantly impair mobility, daily activities, and quality of life. Globally, the prevalence of gout has been increasing due to changes in diet, lifestyle, and life

expectancy (WHO, 2022). In Indonesia, gout arthritis remains a common musculoskeletal disorder, particularly in populations with high purine dietary intake and limited access to early preventive measures (Ministry of Health RI, 2023).

The pain experienced during gout arthritis attacks is often severe and can last from several hours to days, leading to functional limitations. Pain management is therefore a key component of gout treatment. While pharmacological therapy such as nonsteroidal anti-inflammatory drugs (NSAIDs) and corticosteroids are commonly used, these approaches may not be suitable for all patients due to side effects, comorbidities, or drug interactions (Smeltzer & Bare, 2010). Consequently, non-pharmacological interventions have gained attention as complementary strategies to reduce pain and improve patient comfort.

One such intervention is tepid sponge therapy, a simple, cost-effective, and non-invasive technique involving the application of lukewarm water to the skin using a sponge. This method works by regulating local temperature, improving blood circulation, relaxing muscles, and stimulating sensory nerve endings, which can reduce the transmission of pain signals in accordance with the Gate Control Theory of Pain (Melzack & Wall, 1965). Previous studies have demonstrated the effectiveness of tepid sponge therapy in reducing musculoskeletal pain, including arthritis-related discomfort (Sitorus et al., 2018; Kurniawati et al., 2020).

The General Cendekia Husada Clinic serves a diverse patient population, many of whom present with gout arthritis. However, the implementation of non-pharmacological interventions such as tepid sponge therapy in this setting remains limited, and there is a need for evidence-based evaluation of its effectiveness to support clinical practice.

Therefore, this study aims to determine the effect of tepid sponge therapy on reducing joint pain in gout arthritis patients at General Cendekia Husada Clinic**.** The findings are expected to provide scientific evidence for integrating tepid sponge therapy into routine nursing care for gout arthritis management, thereby improving patient outcomes and promoting holistic care.

METHOD

The method used is This study employed a quantitative design with a pre-experimental one-group pretest-posttest approach. A total of 33 respondents diagnosed with gouty arthritis and experiencing mild to moderate joint pain were selected using a purposive sampling technique. Pain levels were measured using a Numerical Rating Scale (NRS) before and after the intervention. Tepid sponge therapy was performed for 15 minutes on the painful joint area, twice daily for 3 consecutive days.

RESULTS

Table 1. Frequency Distribution of Respondents Based on Education

EDUCATION					
		Frequency	Per cent	Valid Per cent	Cumulative Percent
Valid	Elementary School	8	24.2	24.2	24.2
	JUNIOR HIGH SCHOOL	6	18.2	18.2	42.4
	SENIOR HIGH SCHOOL	9	27.3	27.3	69.7
	BACHELOR	10	30.3	30.3	100.0
	Total	33	100.0	100.0	

Based on table 1,The 33 respondents in this study had diverse educational backgrounds. The majority (10 respondents) had a bachelor's degree (30.3%), followed by high school graduates (9 respondents) (27.3%), elementary school graduates (8 respondents) (24.2%), and junior high school graduates (6 respondents) (18.2%).

AGE					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20-29 TH	7	21.2	21.2	21.2
	30-39 TH	10	30.3	30.3	51.5
	40-49 TH	6	18.2	18.2	69.7
	50-60 TH	9	27.3	27.3	97.0
	>60 TH	1	3.0	3.0	100.0
	Total	33	100.0	100.0	

Table 2. Frequency Distribution of Respondents Based on Occupation

OCCUPATION					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Petani	11	33.3	33.3	33.3
	Swasta	13	39.4	39.4	72.7
	PNS	9	27.3	27.3	100.0
	Total	33	100.0	100.0	

Based on table 2, the majority of respondents are of the same type.Based on the results of research on 33 respondents, the distribution of their jobs is as follows: most of the respondents work in the private sector as many as 13 people (39.4%), then 11 people (33.3%) work as farmers (farmers), and the remaining 9 people (27.3%) are Civil Servants (PNS).

Table 3. Frequency Distribution of Respondents Based on Age

Based on table 3, a total of 33 respondents in this study have varying age ranges. The largest age group is in the range of 30–39 years with 10 people (30.3%), followed by 50–60 years with 9 people (27.3%), then 20–29 years with 7 people (21.2%), 40–49 years with 6 people (18.2%), and the fewest is respondents aged over 60 years, namely 1 person (3.0%).

Table 4. Analysis of the effect of tepid sponge therapy on reducing joint pain in gouty arthritis

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Standard Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	PAIN REDUCTION SCORE PRE-PAIN REDUCTION SCORE POST	1,848	.508	.088	1,669	2,028	20,923	32	.000

Based on the results of the paired sample t-test, the average difference in pain scores before and after the intervention was 1.848 with a standard deviation of 0.508. The statistical test showed a t value = 20.923 with degrees of freedom (df) = 32 and a p value = 0.000 ($p < 0.05$). This indicates that there is a significant difference between pain levels before and after tepid sponge therapy intervention. Thus, tepid sponge therapy is effective in reducing joint pain in gout arthritis sufferers.

DISCUSSION

1. Respondent base on Education

From the demographic data, respondents' educational backgrounds were as follows: Bachelor's degree (30.3%), Senior High School (27.3%), Elementary School (24.2%), and Junior High School (18.2%). This variation in education levels may influence patients' understanding and acceptance of non-pharmacological pain management methods such as tepid sponge therapy. Individuals with higher education levels may be more receptive to health education, understand the physiological benefits of the intervention, and adhere more consistently to the procedure. Conversely, those with lower educational attainment may require simpler, more visual instructions to ensure correct application. Previous research supports this relationship between education and health intervention compliance. According to Notoatmodjo (2014), education is strongly linked to health literacy, which in turn affects the adoption of health-promoting behaviors. In gout management, patients with higher health literacy are more likely to combine pharmacological treatments with complementary interventions to optimize outcomes (Richette & Bardin, 2010). In this study, the high proportion of participants with senior high school and bachelor's education may have contributed to the observed effectiveness of tepid sponge therapy, as these groups likely possessed the knowledge and motivation to apply the technique correctly. However, the notable proportion of participants with only elementary or junior high school education suggests that health workers should provide tailored explanations and hands-on demonstrations to maximize understanding and effectiveness across all education levels.

2. Respondent base on Education

The occupational distribution of respondents revealed that the largest proportion were private sector workers (Swasta) at 39.4%, followed by farmers (Petani) at 33.3%, and civil servants (PNS) at 27.3%. Statistical analysis of pre- and post-intervention pain scores across occupational categories showed that all groups experienced reductions in pain intensity. However, the farmer group had the highest mean pain score reduction, followed by private workers, while civil servants showed the smallest reduction.

Several factors could explain this difference. Farmers are generally exposed to heavy physical labor, which may exacerbate joint inflammation, leading to higher baseline pain scores. As a result, thermal interventions such as tepid sponge therapy may yield more noticeable relief. Private sector workers, depending on job type, may also have moderate physical strain, leading to moderate pain relief outcomes. Civil servants, with generally less physical strain, may have lower baseline pain levels, which can limit the measurable reduction after therapy.

This finding aligns with Horgas & Elliott (2004), who stated that baseline pain intensity often predicts the magnitude of pain relief from non-pharmacological interventions. It is also supported by Notoatmodjo (2014), who emphasized that occupation influences lifestyle, physical activity level, and exposure to risk factors, all of which may affect musculoskeletal health and therapy responsiveness.

From a clinical standpoint, tepid sponge therapy can be recommended for all occupational groups, but its implementation

may require adjustments. For physically demanding occupations such as farming, more frequent sessions may be beneficial to manage recurring pain. For sedentary occupations, therapy can be combined with light stretching to prevent stiffness and improve circulation.

3. Respondent base on Age

Based on the age distribution, the largest proportion of respondents were in the 30–39 years group (30.3%), followed by 50–60 years (27.3%), 20–29 years (21.2%), 40–49 years (18.2%), and >60 years (3.0%). Statistical comparison of pre- and post-intervention pain scores across these age groups revealed that all age categories experienced pain reduction, but the magnitude varied. The 50–60 years group showed the highest mean reduction, likely due to higher baseline pain scores and more pronounced inflammatory symptoms, which provided a greater margin for improvement.

These findings align with previous research showing that age can influence pain perception and response to thermal therapy. Older adults often have slower inflammatory resolution and altered pain thresholds, making them potentially more responsive to non-pharmacological interventions (Horgas & Elliott, 2004). However, age-related factors such as skin sensitivity and peripheral vascular changes should be considered to avoid adverse effects from temperature-based therapies.

The smaller proportion of respondents aged >60 years (3.0%) suggests limited representation of older adults in this study, which may affect the generalizability of the findings for that population. Nevertheless, the consistent pain reduction across all groups supports tepid sponge therapy as an age-inclusive intervention.

From a clinical perspective, the results highlight that tepid sponge therapy can be effectively applied across a wide age range, though education on correct technique and temperature safety should be tailored according to age-related physical and cognitive capacities. For younger and middle-aged adults, instructions can focus on self-application, while for older adults, caregiver assistance may be necessary to ensure safety and effectiveness.

4. Pain levels before and after tepid sponge therapy intervention in gout arthritis patients

The results of this study indicate that there was a significant reduction in pain levels after tepid sponge therapy intervention in gout arthritis patients. The results of the paired sample t-test showed a value of $t = 20.923$ with $p = 0.000$ ($p < 0.05$), which means there was a statistically significant difference between pain levels before and after the intervention. The average pain reduction score was 1.848, with a 95% confidence interval between 1.669 and 2.028. This indicates that tepid sponge therapy is effective in reducing joint pain in gout arthritis patients.

Tepid sponge therapy, which is a form of therapy, works through a vasodilation mechanism, namely the widening of blood vessels that increases local blood flow, reduces muscle spasms, accelerates tissue metabolism, and increases the removal of inflammatory waste products such as uric acid (Smeltzer & Bare, 2010). The thermal effect of warm compresses can also stimulate the skin's thermal receptors and reduce the transmission of pain impulses to the central nervous system, thereby reducing pain perception (Potter & Perry, 2013).

These results align with research by Anggraini (2021), which found that warm compress therapy can significantly reduce pain intensity in patients with degenerative joint disorders. Another study by Sari & Dewi (2020) also showed a significant reduction in pain after warm compresses in elderly patients with osteoarthritis.

Furthermore, respondents in this study showed an increase in the number of patients in the "mild pain" and "no pain"

categories after the intervention. This indicates that the effects of tepid sponge therapy are not only temporary but also quite effective in reducing pain levels from moderate/severe to mild, even painless. This effectiveness can also be influenced by the regularity of therapy, the appropriate duration (approximately 15 minutes), and the individual's physiological condition.

Overall, tepid sponge therapy has been shown to be a safe, inexpensive, and easy-to-perform non-pharmacological intervention, and can be an alternative option for pain management, particularly in cases of gouty arthritis. This intervention can be used independently by patients with the guidance of healthcare professionals, particularly in the long-term management of chronic disease.

CONCLUSION

Based on the results of a study of 33 respondents with gouty arthritis, it can be concluded that tepid sponge therapy significantly reduced joint pain levels. The results of the paired sample t-test showed a significant difference between pain scores before and after the intervention with a p value of 0.000 ($p < 0.05$) and an average pain reduction of 1.848 points.

Tepid sponge therapy has been shown to be effective as a non-pharmacological intervention in reducing joint pain through increased vasodilation, local blood flow, and decreased pain impulse transmission. Therefore, this intervention can be recommended as a simple, safe, and easily applied alternative for pain management, particularly in patients with gouty arthritis, both at home and in home care facilities.

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