

The Application Of Foot Massage To Improve Sleep Quality In Elderly People With Gout Through The Application Of Betty Neuman's Theory At The Sumber Urib Public Health Center, Rejang Lebong District

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ABSTRACT

Gouty arthritis is one of the most common inflammatory joint diseases, characterized by the accumulation of monosodium urate crystals in or around the joints. Severe gout pain in the joints can disrupt activity and sleep quality, especially in elderly patients. Poor sleep quality in the elderly can lead to susceptibility to disease, forgetfulness, confusion, disorientation, and poor concentration. One non-pharmacological intervention that can be provided to improve sleep quality is foot massage. This research method is descriptive in the form of a case study, namely research that includes an assessment aimed at providing a detailed description of the background, nature, and characteristics of a case. The subjects in this case study were two clients who met the inclusion and exclusion criteria. Evaluation results for clients 1 and 2 showed that foot massage can improve sleep quality in elderly patients with gout, as evidenced by a decrease in PSQI scores in both clients after three days of foot massage therapy. Nurses are expected to be able to provide and improve the quality of nursing care to clients, particularly interventions based on Evidence-Based Practice (EBP) as a treatment intervention for patients in addition to pharmacological interventions.

INTRODUCTION

Increasing life expectancy is one indicator of a country's successful development. However, as the number of elderly people increases, the number of elderly people with various problems will also increase. Government Regulation Number 43 of the Republic of Indonesia in 2004 stipulates that elderly people are those over 60 years old. The Ministry of Health states that Indonesia has the highest number of elderly people in the world. The number of elderly people increases every year (Ministry of Health of the Republic of Indonesia, 2023). There are changes in thinking, memory, and response time in the elderly as part of a normal process. These changes begin to occur more frequently than usual over time. The aging process causes several problems, both physical, biological, mental, and socioeconomic. This may be related to the most common health problem in non-communicable diseases, which are one of the chronic diseases that primarily affect the elderly. (Diantri & Chandra., 2017).

Gout also known as gout named as " the disease of kings and kings of disease " because often occurs in society with ability social economy high . As known , group public social economy tall often consume meat (i.e. family kingdoms in ancient times), the consequences causes extreme pain very. Trust ancient state that disease This caused by wounds that fall drop by drop onto in joints (Damayanti, 2012). Diseases that often occur found and spread throughout the world gout is group disease heterogeneous as consequence deposition monosodium urate crystals in the tissue or consequence supersaturation sour veins inside fluid extracellular . Disorders the metabolism that underlies gout is hyperuricemia defined as elevation level sour tendon more from 7.0 ml/dl and 6.0 mg/dl (Widyanto, 2024) .

Gout arthritis is one of the diseases disease inflammation the most common joints found, marked with accumulation monosodium urate crystals in the or around joint (Sholihah, 2023). Monosodium urat will form crystal when his concentration in plasma is excessive , around 7.0 mg/dl. The level of monosodium urate in plasma is not the only one driving factors occurrence formation crystal . This is proven in several sufferers hyperuricemia No show symptom For a long time before first attack of gouty arthritis .

Factors that contribute to it Not yet known definitely . Allegedly solubility sour tendon influenced by pH, temperature, and bonds between sour urate and plasma proteins. Women experience

improvement risk of gout arthritis after menopause, then risk start increases at age 45 years with decreased estrogen levels Because estrogen own effect uricosuric , p This causing gouty arthritis is rare in women young (Widyanto, 2024) . Patients who suffer gout disease in various parts of the world show The figures vary and the prevalence of gout arthritis in the world is increasing . increased . The World Health Organization (WHO) stated that in 2018 , gout sufferers experienced increase from 335 million people to 1,370 million people (33.3%). The prevalence of gout also increased among adults in the UK by 3.2% and the United States by 3.9% (Kuo et al., 2016) .

In Korea, the prevalence of gout increased from 3.49% per 1,000 people in 2007 to 7.58% per 1,000 people in 2015 (Kim et al., 2017) . Data obtained from the 2018 Basic Health Research (Rikesdas) shows that the prevalence of joint disease in Indonesia based on the highest doctor's diagnosis is in Aceh (13.26%), Bengkulu (12.11%), Bali (10.46%), Papua (10.43%), and West Kalimantan (9.57%) (Ministry of Health of the Republic of Indonesia, 2023) . Gout is included in the 10 most common diseases in Rejang Lebong Regency, which is in seventh place. Data from the Sumber Urip Community Health Center register shows that there are 25 people with gout arthritis aged 45-70 years at the Sumber Urip Community Health Center from January to June 2025.

According to the American College of Rheumatology (2014), gouty arthritis is a long-standing, potentially inflammatory joint disorder, the symptoms of which are generally transient, severe inflammatory joint pain. Research shows that arthritis and rheumatism in gout sufferers often flare up between 8 a.m. and midnight. Pain can be felt by gout sufferers regardless of gender, age, weight, or medication use. Severe gouty joint pain can disrupt activity and sleep quality, especially in elderly patients (Blackwell, 2014) . Sleep quality is a condition that results in freshness and health upon waking. Sleep quality consists of quantitative aspects such as sleep duration and sleep latency, and subjective aspects such as rest and rest (Leba et al., 2020) . Poor sleep quality in the elderly can lead to susceptibility to disease, forgetfulness, confusion, disorientation, and poor concentration. This, of course, negatively impacts the quality of life of the elderly. Therefore, sleep quality issues in the elderly need to be addressed immediately (Hasibuan & Hasna, 2021) .

Based on the results of a preliminary survey conducted in the Sumber Urip Community Health Center work area, it was found that the number of elderly people with gout was 25 elderly people recorded in the electronic medical record. In addition, researchers also conducted a preliminary survey of five respondents with high uric acid test results in the elderly at the Sumber Urip Community Health Center. Two of the five respondents complained of being unable to sleep at night due to pain in their legs and only took painkillers or applied massage oil to feel warm. Treatments aimed at improving sleep quality in the elderly are usually divided into pharmacological and non-pharmacological therapies. Pharmacotherapy has a rapid effect. However, the use of these medications has long-term detrimental effects on the health of the elderly. Continuous use of sleeping pills in the elderly leads to high levels of toxicity. This toxicity is higher in the elderly due to decreased blood flow and gastrointestinal motility, as well as decreased kidney function. This aggravated by intake drug Keep going continuously and causes fail This is feared to increase the mortality rate in the elderly (Khadijah et al., 2023) .

Non-pharmacological therapy is therapy that does not use drugs, so it does not cause side effects such as drug dependence. Non-pharmacological therapy is a natural treatment that addresses the cause of the disease and stimulates the body's own healing process. According to the National Institute of Health (NIH), non-pharmacological therapy non-pharmacological For overcome disturbance sleep in the elderly categorized to be 5, namely biologically based practices (herbs, vitamins and other supplements) , mind-body techniques (meditation) , manipulative and body-based practices (massage) , energy therapies (therapy) magnetic fields , and ancient medical systems (medicine) traditional Chinese, Ayurvedic, acupuncture) (Nurgiwati, 2017) . Problems that occur in the elderly who experience disturbance Sleep need handling or the right attitude For overcome it . One of the non- pharmacological measures that can given that is Foot massage (Wahyu Adi Arbianto & Prasanti Adriani, 2023) .

Foot massage therapy is one of the massage therapy that can cure almost all disease , as well as is safe and painless therapy effect side especially For elderly (Abidin, 2024) . Foot massage or foot massage can give effect deep relaxation , reducing anxiety , reduce pain , discomfort in a way physical , and improve quality Sleep (Afianti et al., 2017) . Therapy foot massage besides can increase quality sleep in the elderly , can also give comfort and having consideration low cost , can done with independent and easy procedures so that therapy foot massage is one of the therapy that can used in handle problem disturbance sleep in the elderly.

RESEARCH METHODS

Research methods This is descriptive in form studies case study according to Nursalam (2014) is is research that includes assessment aim give description in a way detailed about background back ,nature and existing characters from something case , in other words that studies case centralize attention to something case in a way intensive and detailed research in method done in a way deep to something condition or condition with method systematic start from do observation , data collection , analysis information and reporting results analysis and data presentation in the study case served in a way textual with facts made in text and nature narrative.

RESULTS

Assessment Based on Betty Neuman App

Table 1 Identity Patient

Identity Patient	Patient 1	Patient 2
Name , Date born Age Education Job Address Gender	Mrs. B Sambirejo, May 15, 1957 68 years old No school Farmer Karang Jaya Village Woman	Mrs. M Source urip , 23 march 1964 61 th D3 Retired teacher Sumber Village life Woman

Stressors

Table 2 Assessment Sterssor

Criteria	Patient 1	Patient 2
Intrapersonal stressors	The client said that his sleep was disturbed, especially at night, because he often felt pain in his wrists, feet and knees. The client said he had a history of gout.	The client said he often wakes up in the middle of the night and cannot go back to sleep because his legs and knees feel sore at night, especially when the weather is cold. The client said that he also had difficulty sleeping during the day. The client said he had a history of gout for the past year and was taking medication regularly.
Interpersonal Stressors	Mrs. B's child hopes that his mother No experience disturbance Sleep again and can have pattern Sleep like normal without disturbance .	Mrs. M's family hopes disturbance sleep on Mrs. M can overcome
Extrapersonal Stressors	Mrs. B does not Once take regular medication and have your uric acid checked in a way periodically . When you feel pain in the feet, knees and hands due to uric acid tall , Mrs. B usually only drink drug stall . This is show existence constraint financial matters that become factor extrapersonal influences Mrs. B's decision	Mrs. M actively participates in Prolanis activities and regularly undergoes regular health checks at the community health center (Puskesmas) and has a BPJS card. Mrs. M also regularly consumes drug sour prescribed veins doctor .

Line of defense & resistance**Table 3 Assessment of lines of defense & resistance**

Criteria	Patient 1	Patient 2
Line of defense flexible	Pain in the wrist Mrs B's hands , feet and knees as stressors main cause Mrs. B's sleep was disturbed and could weaken Mrs. B's line of defense	Frequent clients woke up middle night and not Can Sleep return because of his legs and knees felt painful moment Evening day especially moment weather cold cause stress Mrs. M's psychological condition improved cause defense flexibility weaken
Normal line of defense	Usually Mrs. B sleeps for 6–7 hours at a time night , when This function the disturbed . Mrs. B only Sleep for 3-4 hours when Evening .	Previously Mrs. M slept for 6-7 hours every night , when This pattern his sleep disturbed Because often woke up middle night and not can Sleep Again after that
Line of defense Resistance	When in pain felt on the hands, feet and knees , Mrs. B usually smear oil massage in the area her body felt painful .	Mrs. M takes painkillers when she feels pain in her body. She prays Tahajud prayer or recites the Quran when she wakes up in the middle of the night and has trouble getting back to sleep.

Prevention Level**Table 4 Prevention Levels**

Criteria	Patient 1	Patient 2
Primary Prevention	Mrs. B consumes tea warm before Sleep	Mrs. M has a habit Eat before Sleep
Prevention Secondary	Mrs. B applied oil massage in the area her body felt pain to sleep Can more sleep soundly without disturbed painful	Mrs. M is drinking pain reliever , do pray Tahajud prayer or reciting the Koran moment woke up middle Evening
Prevention Tertiary	Family help massage so that Mrs. B can Sleep with sleep soundly	Mrs. M's son created a quiet environment so that Mrs. M can Sleep with sleep soundly

Client System**Table 5 Assessment Client System**

Criteria	Patient 1	Patient 2
Activity	Every day the client works in the garden from morning to evening because he works as a farmer.	The client carries out daily activities at home and occasionally looks after his grandchildren when they are left at home.
Connection Socialization	own harmonious relationship with family and neighbors	own harmonious relationship with family and neighbors
Activity social community	The client is active in social activities in both the RT and RW.	The client is active in social activities in the community both in the RT and RW, the client is also active in participating in prolanis activities and religious studies every Friday.
Culture	The client comes from the Javanese ethnic group	The client comes from the Javanese ethnic group
Spiritual	Carrying out religious activities regularly, including prayer, fasting and other religious activities, not being active in religious activities	Carrying out regular religious activities, including prayer, fasting and other religious activities, being active in religious activities such as regular recitation of the Koran.

Basic structure

Table 6 Assessment Basic Structure

Criteria	Patient 1	Patient 2
Cardiovascular	BP: 120/90 mmHg, N: 82 x/m,	BP: 130/80 mmHg, N: 80x/m
Breathing	RR: 20x/m, n't any sound breath addition	RR: 24x/m, n't any sound breath addition
Laboratory		
Uric Acid	8.6 mg/dl	8.1 mg/dl
GDS	120 mg/dl	107 mg/dl
Cholesterol	82 mg/dl	71 mg/dl

Reconstitution

Table 7 Assessment Reconstitution

Criteria	Patient 1	Patient 2
Perception will disease	The client said he often had trouble sleeping at night because he often felt pain in his wrists, feet and knees. The client said Rest his sleep disturbed The client said own history less gout disease more it's been 3 years , no drink routine medication , only drink drug roadside stall moment painful felt	The client said he often wakes up in the middle of the night and can't go back to sleep because his legs and knees hurt at night, especially when the weather is cold. The client said that he also had difficulty sleeping during the day. The client said he had a history of gout for the past year and was taking medication regularly.

Data Analysis

Table 8 Data Analysis

Data analysis	Etiology	Problem
<p>Patient 1 Ds: The client said he often had trouble sleeping at night because he often felt pain in his wrists, feet and knees. The client said Rest his sleep disturbed The client said sometimes before Sleep himself consume tea warm Do : The client appears lethargic and frequent evaporate BP: 120/90 mmHg, N: 82 x/m, RR: 20x/m, S: 36.8° C Check up result laboratory Uric acid : 8.1 mg/dl GDS: 107 mg/dl Cholesterol: 71 mg/dl</p>	Lack of control Sleep	Sleep pattern disorders
<p>Patient 2 Ds: The client said he often wakes up in the middle of the night and can't go back to sleep because his legs and knees hurt at night, especially when the weather is cold. The client said that he also had difficulty sleeping during the day. The client said he has a habit of eating before going</p>	Lack of control Sleep	Sleep pattern disorders

to bed. Do : The client appears sluggish BP: 130/80 mmHg, N: 80x/m, RR: 24x/m, S: 36.5° C Check up result laboratory Uric acid : 8.6 mg/dl GDS: 120 mg/dl Cholesterol: 82 mg/dl C		
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Plan Nursing**Table 9 Plan Nursing**

NO	DIAGNOSIS OF KEP	Primary Prevention	Prevention Secondary	Prevention Tertiary
1	Sleep pattern disorders bd Lack of control Sleep	Fostering connection each other believe with client Identification of wheezing pattern activity and sleep Identifying factor nuisance sleep (physical and/ or psychological) Identifying disturbing food and drink sleep (eg: coffee, tea , alcohol , eating approach time sleep , drink plenty of water before Sleep) Identifying drug sleep consumed patient	Environmental modifications (e.g., lighting, distractions, temperature, mattresses, and bedding) Limit nap time, if necessary. Facilitation cra remove stress before Sleep Set timetable regular sleep Perform procedures to increase comfort with <i>foot massage</i> Adjust medication schedule and/or actions to support the sleep-wake cycle.	Recommend keep habit time Sleep Recommend avoiding foods/drinks that disturb sleep Teach factors that contribute to sleep pattern disturbances (e.g., psychological, lifestyle, frequent work shift changes) Involving and maximizing the role of the family in providing <i>foot massage</i>

Notes Development**Patient 1****Table 10 Notes Development Patient 1**

No	Dx Kep	Date / time	Implementation	TT
1	Sleep pattern disorders bd Lack of control Sleep	Tuesday, 22-07-2025 10.20 WIB 10.30 WIB 10.45 WIB 11.00 WIB 11.10 WIB 11.35 WIB 11.50 WIB	1. Identifying pattern activity and sleep 2. Identifying factor nuisance Sleep 3. Identifying foods and drinks that disrupt sleep 4. Identifying drug sleep consumed 5. Do procedure For increase comfort with method <i>foot massage</i> 6. Explain importance Sleep Enough 7. Recommend avoiding foods/drinks that disturb sleep	

2.	Sleep pattern disorders bd Lack of control Sleep	Wednesday, 23-07-2025 11.40 WIB 11.50 WIB 12.00 WIB 12.25 WIB	<ol style="list-style-type: none"> 1. Identifying pattern activity and sleep 2. Identifying foods and drinks that disrupt sleep 3. Do procedure For increase comfort with method <i>foot massage</i> 4. Recommend avoiding foods/drinks that disturb sleep 	
3.	Sleep pattern disorders bd Lack of control Sleep	Thursday, 24-07-2025 11.55 WIB 12.10 WIB	<ol style="list-style-type: none"> 1. Identifying pattern activity and sleep 2. Do procedure For increase comfort with method <i>foot massage</i> 	

Patient 2

Table 11 Notes Development Patient 2

No	Dx Kep	Date / time	Implementation	TT
1	Sleep pattern disorders bd Lack of control Sleep	Monday, 28-07-2025 10.30 WIB 10.50 WIB 11.00 WIB 11.20 WIB 11.30 WIB 11.55 WIB 12.10 WIB	Identifying pattern activity and sleep Identifying factor nuisance Sleep Identifying foods and drinks that disrupt sleep Identifying drug sleep consumed Do procedure For increase comfort with method <i>foot massage</i> Explain importance Sleep Enough Recommend avoiding foods/drinks that disturb sleep	
2.	Sleep pattern disorders bd Lack of control Sleep	Tuesday, 29-07-2025 13.30 WIB 1:40 PM WIB 1:55 p.m. WIB 2:00 PM WIB 14.20 WIB 3:00 PM WIB	Identifying pattern activity and sleep Identifying factor nuisance Sleep Identifying foods and drinks that disrupt sleep Do procedure For increase comfort with method <i>foot massage</i> Explain importance Sleep Enough Recommend avoiding foods/drinks that disturb sleep	

3.	Sleep pattern disorders bd Lack of control Sleep	Wednesday, 30-07-2025	Identifying pattern activity and sleep Identifying factor nuisance Sleep Identifying foods and drinks that disrupt sleep Do procedure For increase comfort with method <i>foot massage</i> Recommend avoiding foods/drinks that disturb sleep
		11.40 WIB	
		11.50 WIB	
		12.00 WIB	
		12.25 WIB	
		12.50 WIB	

Nursing Evaluation

Patient 1

Table 12 Nursing Evaluation of Patient 1

No	Dx. Head	Date / Time	Evaluation
1.	Sleep pattern disorders bd Lack of control Sleep	Tuesday, 22-07-2025	<p>S: The client said his sleep was disturbed, especially at night. The client said he felt more relaxed after the <i>foot massage</i>.</p> <p>O: The client appears tired PSQI score 17 (quality Sleep bad) BP: 120/80 mmHg, N: 82x/m, RR: 23x/m, S: 36.5° C</p> <p>A: Problem resolved part Intervention to be continued to intervention 1,3,5,7</p>
2.	Sleep pattern disorders bd Lack of control Sleep	Wednesday, 23-07-2025	<p>S : The client said he started to feel sleepy after the <i>foot massage therapy</i> but still had trouble sleeping at night. The client said he no longer drinks tea before bed because he knows it can disturb his sleep. The client said that yesterday he woke up in the middle of the night and had trouble falling asleep again after that.</p> <p>O : The client looks comfortable after the <i>foot massage</i>. PSQI score 10 (quality Sleep bad) BP: 120/80 mmHg, N: 80x/m, RR: 22x/m, S: 36.9° C</p> <p>A : The problem is partially resolved intervention continued to intervention 1.3</p>
3	Sleep pattern disorders bd Lack of control Sleep	Thursday, 24-07-2025	<p>S : The client said he was able to take a nap yesterday. The client stated that he no longer wakes up in the middle of the night.</p>

			<p>The client said he slept well last night.</p> <p>O : The client looks fresh and relaxed. PSQI score 4 (quality Sleep Good) BP: 120/80 mmHg, N: 82x/m, RR: 24x/m, S: 37° C</p> <p>A : Problem solved Intervention stopped</p>
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Patient 2

Table 13 Nursing Evaluation of Patient 2

No	Dx. Head	Date / Time	Evaluation
1.	Sleep pattern disorders bd Lack of control Sleep	Monday, 28-07-2025	<p>S: The client said he felt more relaxed after the <i>foot massage</i>. The client said he often wakes up in the middle of the night and can't go back to sleep because his legs and knees hurt at night, especially when the weather is cold. The client said that he also had difficulty sleeping during the day. The client said he has a habit of eating before going to bed.</p> <p>O: The client appears Still sluggish PSQI score 15 (quality Sleep bad) BP: 120/80 mmHg, N: 82x/m, RR: 24x/m, S: 36.5° C</p> <p>A: Problem resolved part Intervention to be continued to interventions 1,2,3,5,6,7</p>
2.	Sleep pattern disorders bd Lack of control Sleep	Tuesday, 29-07-2025	<p>S: The client said Still woke up middle night and not Can Sleep return after that . The client said yesterday he was able to take a nap after the <i>foot massage therapy</i>. The client said that he no longer eats before bed because it can disrupt his sleep patterns.</p> <p>O: The client appears to feel more comfortable. PSQI score 8 (quality Sleep bad) BP: 130/80 mmHg, N: 80x/m, RR: 24x/m, S: 36.5°C.</p> <p>A: Problem resolved part Intervention to be continued to interventions 1,2,3,4,6</p>

3	Sleep pattern disorders bd Lack of control Sleep	Wednesday, 30-07-2025	S: The client said he no longer wakes up in the middle of the night. The client said that yesterday he was able to sleep soundly . The client said can Sleep with sleep soundly Now O: The client appears relax PSQI score 3 (quality Sleep Good) BP: 120/90 mmHg, N: 80x/m, RR: 23x/m, S: 36.8°C. A: Problem resolved P : Intervention stopped
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DISCUSSION

Assessment

Researchers found similarities in the subjective data of clients 1 and 2, namely that both had a primary complaint of sleep disturbance. Patient Mrs. B , 68, and patient Mrs. M, 61, both had a history of gout. Physiological factors both of them involving normal vital signs , examination *Head to toe* within normal limits and from results laboratory obtained results high uric acid levels . From aspect psychological second patient feel Enough burdened with existence disturbance in the pattern sleep . Based on the developmental assessment, both clients are in the elderly developmental stage. Based on the sociocultural assessment, the clients did not experience any disruptions to their activities or social relationships. Meanwhile, spiritually, neither patient experienced any limitations in their worship . patient consists of from internal and external environments that are mutually support .

In the intrapersonal stressor assessment, both clients complained of disturbed sleep, especially at night. The interpersonal assessment revealed that both clients' children and families hoped their sleep disturbances could be resolved. In the extrapersonal assessment, Mrs. B appeared to have financial constraints, preventing her from receiving regular medication and undergoing routine laboratory tests. line of defense indicates a stressor in both clients, namely disturbed sleep patterns. In a normal line of defense , both clients typically sleep 6-7 hours a night, but currently their sleep function is disturbed, resulting in only 3-4 hours of sleep a night. normal involves mark laboratory with high uric acid levels and the presence of history Gout . As a line of defense, Mrs. B applies massage oil when her feet, hands, and knees feel sore, while Mrs. M takes painkillers prescribed by her doctor.

From the discussion of the assessment with Betty Neuman's nursing theory above, the researcher has adjusted the assessment with the theory that Betty Neuman's assessment consists of 7 concepts, namely physiological, psychological, developmental, socio-cultural, spiritual, stressors and lines of defense. So the researcher concluded that the overall assessment shows that both patients require a holistic approach in care and the assessment data obtained by the researcher with the existing theory is appropriate and has been explained significantly.

Nursing Diagnosis

The theory explains that all complaints or disorders felt by the client are interpreted as nursing diagnoses. From the assessment conducted by the researcher, data was obtained that client 1 said that he often had difficulty sleeping at night because he often felt pain in his wrists, feet and knees, the client said that his sleep was disturbed, the client said that sometimes before going to bed he consumed warm tea. Subjective data obtained that the client looked lethargic and often yawned, BP: 120/90 mmHg, N: 82 x/m, RR: 20x/m, S: 36.8° C. The results of the laboratory examination obtained Uric acid: 8.1 mg/dl, GDS: 107 mg/dl, Cholesterol: 71 mg/dl.

In client 2, the client data showed that he often woke up in the middle of the night and could not go back to sleep because his legs and knees felt sore at night, especially when the weather was cold, the client said that he also had difficulty sleeping during the day, the client said that he had a habit of eating before going to bed. From the objective data, the client appeared lethargic, BP: 130/80 mmHg, N: 80x/m, RR: 24x/m, S: 36.5° C, Laboratory examination results Uric acid: 8.6 mg/dl, GDS: 120 mg/d, Cholesterol: 82 mg/dl.

Thus, the researcher found nursing problems in clients 1 and 2 with sleep pattern disorders due to lack of sleep control. The researcher concluded that there is a correlation between theory and

subjective and objective data from clients 1 and 2, as well as the diagnoses that appear in patients with gout. This is in accordance with the theory that states that arthritis and rheumatism in gout sufferers often recur from 8 am to midnight. Pain can be felt by gout sufferers regardless of gender, age, weight, and medication used. Severe gout pain in the joints can interfere with activity and sleep quality, especially in elderly patients (Blackwell, 2014) .

Intervention Nursing

1. Primary Prevention

In Betty Neuman's concept , primary prevention has role crucial in guard balance and well-being individual before happen reaction to stressors. When a stressor is suspected or identified on both clients , researchers as interventionist will make an effort reduce possibility client meet with stressors or strengthen somebody in dealing with the stressor . In the context of this, researcher can create connection close and build trust with second client so that second client can feel comfortable . Strengthening the line of defense flexible second client attempted For lower possibility occurrence reaction excessive to the stressors faced. In addition, it provides information about importance Sleep enough and avoid food / drink that can bother pattern Sleep to second clients are also aspect important in primary prevention according to Betty Neuman's concept . Information This can give support and readiness in a way holistic, no only on the aspect physical, but also aspects psychological and social , so that family can dealing with stressors with more good and organized . With Thus, the approach This reflect effort For maintain stability and prevent imbalance that can arise due to stressors on both client.

2. Prevention Secondary

Prevention secondary covers intervention or action beginning after stress symptoms begin happened , with focus on recovery and maintenance balance system . Source internal and external power used For ensure stability factor resistance to kedus client . Prevention secondary in Betty Neuman's concept refers to in an effort For restore balance and prevent more he continued the impact of stressors on both client. With consider factor resistance and activation source internal and external power , nurses can create supportive environment recovery and maintenance integrity system individual . *Foot massage* can done as alternative prevention secondary to prevent existence impact more carry on from the stressors experienced second client. *Foot massage* is touch on the feet that can stimulate oxytocin For neurotransmitters in the brain or stimulate production hormones that cause feeling safe and reduces stress and anxiety . *Foot massage* can can give effect deep relaxation , reduce pain , discomfort in a way physical and improve feeling want to sleep on someone . Effects massage will increase expenditure endorphins so that bear fruit body felt relax because activities nerve sympathetic decrease (Nurlayli & Mardhyah, 2017) .

3. Prevention Secondary

In the Betty Neuman model concept , prevention tertiary appear after stage prevention secondary or treatment. The primary focus of tertiary prevention is adjustment toward optimal system stability. The goal is to increase resistance to stressors with the aim of preventing relapse or regression. This process encourages individuals to return to the primary prevention cycle, where measures are implemented to maintain balance and prevent further negative impacts. In research this, prevention tertiary can done with method involving effort researchers For teach family closest client about procedures do *foot massage* , thing This aims to knock second client experience disturbance pattern Sleep again , family can give therapy *foot massage* on clients.

Implementation Nursing

Implementation nursing care performed focused on achievement stability system optimally . If stability achieved so will happen revitalization . As system open , client will always make an effort For acquire , improve , and maintain balance between various factors , good in the and outside the system such as overcome problem quality sleep in the elderly with gout through therapy *foot massage*.

Evaluation Nursing

Nursing evaluations were conducted after implementation. These evaluations were conducted to determine the results of the implementation on patients. The final evaluation results for patients 1 and 2 showed improved sleep quality in both clients. previous research conducted by Kusumawati and Danik (2024) regarding the relationship between *foot massage* therapy and improving sleep quality in elderly people with gout. Research conducted by Ariani and Suryanti (2019) also found that *sleep quality scores in the foot massage intervention group were higher than those in the control*

group. Therefore, foot massage is recommended as an evidence-based complementary therapy in community health centers and hospitals as a self-care intervention to help treat patients with sleep disorders.

Research conducted by Azmi et al. (2021) also found that warm foot soaks and foot massage had an effect on sleep quality in the elderly community in Tunjungsekar Village. A literature review conducted by Nissa et al. (2021) also found that foot reflexology massage was effective in improving sleep quality in the elderly. This research also aligns with the results of research conducted by **Afrianti & Dwi (2025)**, which concluded that *foot massage* is a non-pharmacological intervention proven to improve sleep quality in the elderly.

Analysis showed that foot massage significantly increased blood circulation and muscle relaxation, contributing to improved sleep quality. This intervention shows potential as a practical, non-pharmacological method for managing sleep disorders in the elderly. Based on the research results, researchers concluded that *foot massage can improve sleep quality in elderly people with gout, as evidenced by a decrease in PSQI scores in both clients after 3 days of foot massage therapy.*

CONCLUSIONS AND RECOMMENDATIONS

Conclusion

1. From the results assessment of client 1 and client 2 obtained data that patient complain existence disturbance in the pattern his sleep .
2. Nursing diagnoses that emerged in client 1 and client 2 based on subjective data and objective data obtained is disturbance pattern Sleep relate with lack of control Sleep
3. The interventions planned for patient 1 and patient 2 are primary prevention, secondary prevention and tertiary prevention interventions.
4. The implementation carried out on patients 1 and 2 was a sleep support intervention that focused more on *Evidence Based Practice*, namely *foot massage therapy where foot massage therapy on clients 1 and 2 was carried out for 3 days.*
5. From the evaluation results on client 1 and client 2, it was found that *foot massage can improve sleep quality in elderly people with gout, as evidenced by a decrease in PSQI scores in both clients after foot massage therapy for 3 days.*

Recommendations

1. For Professions Nursing
 - a) It is expected study This Can as input For add material information , references and skills in do care nursing so that capable optimize service care nursing to public especially with cephalgia problem .
 - b) It is expected nurse capable provide and improve quality service in give care nursing to client specifically intervention with based *Evidence Based Practice*.
2. For Educational Institutions
It is expected study This Can as input and additions discourse knowledge , increase discourse for students and as material reference For add outlook for Student Nursing profession , especially related to with care nursing care for the elderly with gout through approach theory Betty Neuman's nursing as runway do action nursing with giving therapy *foot massage*.
3. For Community Health Centers
It is expected community health center can give service optimal health possible and can apply *Evidence- Based Practice* as intervention treatment of patients beside intervention in a way pharmacology .

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