# The Relationship Between Intensity of Pain With Sleep Quality in Patients With Gout Desease

## Maria Haryanti Butarbutar[1] , Srilasmawanti[2] , Arief Rahman[3] , Khairul Fadly[4]

[1,3,4]Bachelor Nursing Program, Columbia Asia Health Institute, Indonesia
[2]Diploma Nursing, Institut of Health Helvetia, Indonesia
*e-mail: maria_haryanthi@yahoo.com.au*

***Abstract.*** *Gout is a clinical syndrome resulting from the deposition of urine (monosodium urate monohydrate) crystals. The crystals may be deposited in a joint, leading to an acute inflammatory response, or in soft tissues, such as cartilage, causing no inflammation. Most cases of gout are characterized by the sudden onset of severe acute monarticular arthritis in a peripheral joint in the leg. The arthritis remits completely and then recurs with increasing frequency. After approximately 10 years of recurrent gouty arthritis, tophi develop in cartilage, tendons, and bursae in some patients.. The purpose of research To know the relationship between the intensity of pain with sleep quality in patients with Rheumatoid Arthritis in elderly Patients with Rheumatoid Arthritis in Dusun II Desa Helvetia Medan. The research design used survey analytic cross-sectional methods. The sampling technique used total sampling, the Sample size of 60 respondents. The Data were obtained using a questionnaire VASE-cope containing 20 items of questions, the data analysis used is univariate and bivariate. Based on the Analysis results with the Results of using the test chi-square test showed that the significant value of the probability (Asymp. Sing) The Intensity of Pain is .0,003 <value sing α of 0.05, it was proved that there was a relationship of Pain Intensity with the quality of sleep in elderly patients with Gout in Dusun II Desa Helvetia. The conclusion in this study showed that statistically there is a relationship between Pain Intensity and sleep quality in elderly patients with Gout Helvetia Village.. Elderly people know more about Pain Intensity and can control sleep well.*

***Keywords*** *: Pain Intensity, Sleep Quality, Gout.*

## 1. INTRODUCTION

A person who is elderly has undergone biological, physical, psychological, and social changes that impact their health as well as other areas of their lives. For the elderly to live as successfully as feasible for as long as possible given their capacities, they require extra care throughout maintenance and improvement.

According to Depkes, Batasan Lansia (Ginanja Triyono, 2020). There are two types of ages, which includes those aged 55 to 64, and the senium group, which includes people older than 65. According to WHO, the four age groups are middle-aged people (45–59 years old), elderly people (60–74 years old), old people (75–90 years old), and very old people (90 years old). Indonesia is the fourth most populous country in the world, and it has the largest number people worldwide. As of 2020, there will be 28.8 million Indonesians, compared to 60 years ago.

Gout is characterized by low-grade inflammation with elevated concentration of proinflammatory cytokines and reactive oxygen species, formation of neutrophil extracellular traps, endothelial dysfunction, and platelet hyperactivity that may precipitate

atherothrombosis. Gout flares are characterized by inflammation due to activation of the NALP3 inflammasome. In a randomized clinical trial, blocking the NALP3 inflammasome prevented recurrent cardiovascular events. Therefore, this study assessed whether gout flares were associated with a transient increase in rates of cardiovascular events (acute myocardial infarction and stroke).

Pain is an unpleasant sensory and emotional experience due to tissue damage, both actual and potential, or described in the form of such damage. Sleep quality is a person's satisfaction with sleep, so that it does not show feelings of fatigue, irritability and restlessness, lethargy, blackness around the eyes, swollen eyelids, red conjungcative, sore eyes, divided attention, headaches and frequent yawning or drowsiness.

According to studies by Saputra, Layun, Rusdi, and Ain (2021), up to 68.3% of older adults had poor sleep quality. Older adults with gouty arthritis frequently have joint pain and cramps at night, which makes it easier for them to wake up in the middle of the night and difficult for them to fall back asleep, according to research by Alvita, Faidah, and Tutik (2021).

It is anticipated that the community would benefit from this research by learning more about the pain associated with gouty arthritis and how it affects older adults' sleep.

## 2. METHODS

The portion of study that includes descriptions of the research flow that characterizes the researcher's attitude when performing research—often referred to as the research paradigm—is known as research design. This study attempts to investigate how and why the phenomena happens using a cross-sectional methodology and an analytical survey method.

The purpose of this study is to determine how elderly gout patients in Dusun II Helvetia Village, Medan, relate to their level of pain and sleep quality. This study was carried out in Medan's Dusun II Helvetia Village. The study population consisted of 60 individuals, all of whom were patients at Dusun II Helvetia Village. Total sampling, a sampling strategy in which the number of samples is equal to the population, was employed in this investigation.

## 3. RESULTS AND DISCUSSION

**Characteristics of Respondents**
**Frequency Distribution of Respondents' Characteristics Based on Age, Gender, Education, and Occupation in the Elderly in Dusun II Helvetia Village Medan**
**Table 1.**

| No | Characteristic | Amount | |
|---|---|---|---|
| | | **f** | **%** |
| **1** | **Early Elderly Age (46-55 years)** | | |
| | 46 – 50 years | 28 | 46,7 |
| | 51 -55 years | 32 | 53,3 |
| **2** | **Gender** | | |
| | Mens | 25 | 41,7 |
| | Women | 35 | 58,3 |
| **3** | **Education** | | |
| | No School | 6 | 10,0 |
| | Elementary School | 14 | 23,3 |
| | Junior High School | 18 | 30,0 |
| | Senior High School | 13 | 21,7 |
| | Collage | 9 | 15,0 |
| **4** | **Work** | | |
| | Housewife | 9 | 15,0 |
| | Private Employee | 21 | 35,0 |
| | Civil Service | 18 | 30,0 |
| | Retire | 12 | 20,0 |
| | **Total** | **60** | **100** |

Based on table 1. characteristics of respondents based on age, it is known that the most age is 51-55 years as many as 32 respondents (53.3%). The characteristics of respondents based on gender show that the most are female as many as 35 respondents (58.3%). Characteristics of respondents based on education that most are junior high school educated as many as 18 respondents (30.0%).

The characteristics of respondents based on occupation showed that the most were Private Employees 21 respondents (35.0%)

**Univariate Analysis**
Univariate analysis aims to determine the frequency distribution of a respondent's answer to variables based on research problems that are poured in a frequency distribution table. Helvetia Village, Medan, the following results were obtained.

**Table 2.**
**Frequency Distribution of Pain Intensity of Gout Patients in the Elderly in Dusun II Helvetia Village Medan**

| No | Pain Intensity | Mount | |
|----|----------------|-------|-------|
| | | f | % |
| 1 | Mild Pain | 25 | 41,7 |
| 2 | Moderate Pain | 24 | 40,0 |
| 3 | Severe Pain | 11 | 18,3 |
| | **Totally** | **60** | **100** |

Based on table 2 above, it can be seen that of the 60 respondents in Dusun II Helvetia Village, Medan. The most pain intensity of Gout sufferers is the mild pain category, namely 25 respondents (41.7%), and the moderate pain category is 24 respondents (40.0%). While severe pain was 11 respondents (18.3%).

**Table 3.**
**Frequency Distribution of Sleep Quality of Patients with Gout in the Elderly in Village II Helvetia Medan.**

| No | Sleep Quality | Mount | |
|----|---------------|-------|-------|
| | | f | % |
| 1 | Good | 38 | 63,3 |
| 2 | Bad | 22 | 36,7 |
| | **Totally** | **60** | **100** |

Based on table 3. above, it can be seen that of the 60 respondents in Dusun II Helvetia Village, Medan. The most Sleep Quality is the Good category, namely 38 respondents (63.3%), while the Bad category is 22 respondents (36.7%).

**Bivariate Analysis**

**Table 4.**
**Cross Tabulation of the Relationship between Pain Intensity and Sleep Quality in Elderly Patients with Rheumatoid Arthritis in patients in Dusun II Helvetia Village Medan.**

| No | Pain Intensity | Sleep Quality | | | | Mount | | P-Value |
|----|----------------|------|------|------|------|-------|------|---------|
| | | Good | | Bad | | | | |
| | | f | % | f | % | F | % | |
| 1 | Mild Pain | 19 | 31,7 | 6 | 10,0 | 25 | 41,7 | |
| 2 | Moderate Pain | 17 | 28,3 | 7 | 11,7 | 24 | 40,0 | 0.003 |
| 3 | Severe Pain | 2 | 3,3 | 15 | 15,0 | 11 | 18,3 | |
| | **Totally** | **38** | **63,3** | **22** | **36,7** | **60** | **100** | |

Based on table 4. it can be seen the cross tabulation between Pain Intensity and Sleep Quality in the Elderly Helvetia Village Medan.That of the 60 respondents the largest was in the Pain Intensity of the Mild Pain category with a Good Quality of Sleep category, namely 19 respondents (31.7%), while the least was in the Pain Intensity of the Mild Pain category with a Poor Quality of Sleep category, namely 6 respondents (10.0%). Based on research conducted in Helvetia Medan. By using the Chi square test with a significant value or p-value of 0.003 and a value of α (0.05), it means that there is a relationship between pain intensity and sleep quality in elderly people with Gout in Helvetia Village Medan.

## 4. DISCUSSION

**Pain Intensity**

Based on table 4.2, it can be seen the frequency distribution of pain intensity as many as 60 respondents, namely respondents with mild pain intensity as many as 25 respondents (41.7%), and respondents with moderate pain intensity as many as 24 respondents (40.0%). While respondents with severe pain intensity were 11 respondents (18.3%). From this data we can conclude that the most respondents with mild pain intensity, so that respondents aged 46-55 years still experience mild pain as much as 19 respondents (31.7%), although some admitted that sometimes their pain intensity was disturbed due to work problems or illnesses they suffered.

The results of research conducted by Ratna Ningsih entitled the effect of Tai-Chi exercise on the intensity of rheumatoid arthritis pain in the elderly showed that there was an effect of Tai-Chi exercise in reducing the intensity of gout pain in the elderly. Tai-Chi exercise is recommended for the elderly to use to reduce the intensity of gout pain.

The results of research conducted by Padila entitled Level of knowledge on the handling of Rheumatoid Arthritis disease in the elderly show that there are 52% of elderly people who have a good level of knowledge and 52% of elderly people have good handling of Rheumatoid Arthritis disease, while the results of bivariate analysis p value = 0,000. In conclusion, there is a relationship between the level of knowledge and the handling of rheumatoid arthritis in the elderly at the Balai Pelayanan dan Penyantunan Seniors Pagar Dewa, Bengkulu City.Pain intensity is a description of how severe the pain is felt by the individual, the measurement of pain intensity is very subjective and individual and the possibility of pain in the same intensity is felt very differently by two different people.

Measurement of pain with the most likely objective approach is to use the body's physiological response to pain itself. However, measurement with this technique also cannot provide an exact picture of the pain itself.

The international Association for their study of pain (IASP) defines pain as follows pain is an unpleasant sensory and emotional experience due to damage or threat of tissue damage. Based on research from Marlina Andriani entitled The Effect of Warm Serei Compress on Reducing the Intensity of Rheumatoid Arthritis Pain in the Elderly.

The average (mean) results of pre-test rheumatoid arthritis pain intensity 4.90 with an average posttest pain intensity of 2.95. From the results of analyzing the research data using the t-test, a confidence level of 95% was obtained t = 10.563 with a significant value of 0.000. So it can be concluded that warm cereals compresses have an effect in reducing the intensity of rheumatoid arthritis pain in elderly respondents in Tarok Dipo Bukittinggi Village, as evidenced by the p value = 0.000 (p <0.05).

Based on research from Anne Rufaridah entitled The Effect of Warm Lemongrass Compress on Reducing the Intensity of Rhematoid Arthritis Pain. The results of research conducted on the effect of warm lemongrass compresses on reducing the intensity of rheumatoid arthritis pain conducted in Parak Laweh Village, Lubuk Begalung Health Center Working Area. It is known that pre-test pain intensity of 5-7 is in the category of moderate pain and severe pain as much as 80% and post-test pain intensity of 3-5 is in the category of mild pain and moderate pain as much as 70%. The results of the paired sample T-test test obtained a p value of 0.00 (<0.05).

Based on research from Dian Utama Pratiwi Putri entitled The Effect of the Use of Lemongrass Oil (Cymbopogon nardus L Oil) on Decreasing the Intensity of Rheumatoid Arthritis Pain in the Elderly. The results of the analysis obtained the average intensity of rheumatoid arthritis pain before being given therapy using lemongrass oil was 2.87 (moderate pain) with a standard deviation of 0.344. With 95% confidence level, the client's pain intensity before being given lemongrass oil is between 2.78-2.95 (moderate pain). And it can be concluded that before being given lemongrass oil all respondents (86.6%) experienced moderate pain and (13.4%) experienced mild pain.

According to assumptions based on research conducted in Dusun II Helvetia Village, it can be seen that most respondents have mild pain intensity not fully getting full sleep quality, due to lack of understanding of sleep quality with what is experienced by patients both in terms of time and material, while patients who have moderate and good pain intensity due to good sleep quality and enough to overcome pain.

**Sleep Quality In Elderly Patients**

Sleep quality in elderly people with gout based on table 3. above, it can be seen that of the 60 respondents in Dusun II Helvetia Village Medan. The most Sleep Quality is the Good category, namely 38 respondents (63.3%), while the Bad category is 22 respondents (36.7%).

Based on research from Ananta Erfrandau entitled The Effect of Laughter Therapy on Sleep Quality in the Elderly in the Technical Service Unit of the Elderly Social Home. the results using the dependent test show the difference in the average value of sleep quality increased by 0.2 which means that the quality of sleep of the elderly decreased (p-value = 0.082> α (α = 0.05) it can be concluded that there is no significant difference between the results of the pretest and post test. Table 10 shows that the average value of sleep quality in the control group at post test increased from 12.07 to 12.27 with a difference of 0.2. This means that the quality of sleep of the elderly has decreased. Three respondents (20%) experienced a decrease in sleep quality and 12 respondents (80%) had a fixed sleep quality.

Based on research from Nur Chasanah entitled The Relationship between Sleep Quality and Quality of Life in the Elderly in Karangasem Village, Laweyan District, Surakarta. the Chi Square test results obtained a value of 12.808 with a significance value (p-value) of 0.002. The p-value is smaller than 0.05 (0.002 <0.05), so the test decision is H0 rejected, which means "There is a relationship between sleep quality and the quality of life of the elderly in Karangasem village, Lawean sub-district, Surakarta" where the better the quality of sleep of the elderly, the better the quality of life of the elderly.

Based on research from Evi Karota Bukit entitled Sleep Quality and Factors of Sleep Disorders in Elderly Clients. Results The quality of client sleep in the hospital is worse than at home Research on the quality of sleep of elderly clients with internal medicine in the hospital is worse than at home (p < 0.001). Southwell and Wistow (1995) found 65% (N=153) of hospitalized clients experienced sleep disturbances.

Sleep is a state of unconsciousness, where the perception of individual reactions to the environment decreases or disappears and can be reawakened with sufficient stimulus and sensory, sleep can also be said to be a state of relative unconsciousness, not just a state of calm without activity, but rather a sequence of repetitive cycles characterized by minimal activity. during sleep, a person has a varied state and there are changes in physiological processes and a decrease in response to external stimuli. A person is categorized as sleeping with signs of minimal physical activity, varying levels of consciousness, various physiological changes in the body, and decreased response to external stimuli.

Sleep is a state of unconsciousness, where the perception of individual reactions to the environment decreases or disappears and can be reawakened with sufficient stimulus and sensory, sleep can also be said to be a state of relative unconsciousness, not just a state of calm without activity, but rather a sequence of repetitive cycles characterized by minimal activity. during sleep, a person has a varied state and there are changes in physiological processes and a decrease in response to external stimuli. A person is categorized as sleeping with signs of minimal physical activity, varying levels of consciousness, various physiological changes in the body, and decreased response to external stimuli.

According to the assumptions of researchers conducted in Dusun II Helvetia Village, it can be seen that most respondents have good sleep quality because they get pain intensity, due to the lack of attention or care for what patients experience both in terms of money and time.

**Relationship between Elderly Gout Patients' Sleep Quality and Pain Intensity**

Table 4 shows the cross-tabulation of elderly residents of Dusun II Helvetia Village in Medan's pain intensity and sleep quality. Of the 60 responses, the greatest number (19, or 31.7%) fell into the category of Pain Intensity of Mild Pain with Good Quality Sleep, while the smallest number (6, or 10.0%) fell into the category of Pain Intensity of Mild Pain with Poor Quality Sleep.

Based on the statistical results obtained using the chi square test, a value of 0.003 was seen. Because the p-value $(0.003) < \alpha$ (0.05), it can be concluded that Ha is accepted, meaning that there is a significant relationship between pain intensity and sleep quality in elderly people with Rheumatoid Arthritis in hamlet II Helvetia village Medan.

## 5. CONCLUSION

Pain intensity in elderly people with gout in Dusun II Helvetia Village in the mild category 25 respondents (41.7%).Sleep quality in elderly people with gout in Dusun II Helvetia Village in the good category 38 respondents (63.3%)

Based on the statistical results of chi-square on Pain Intensity with Sleep Quality in Elderly Patients with gout in Dusun II Helvetia Village Medan p value <0.05, obtained p value = 0.003 then p value $(0.003) < \alpha$ (0.05) means there is a relationship between Pain Intensity with Sleep Quality in Elderly Patients with gout in Dusun 2 Helvetia Village Medan.

## 6. DAFTAR PUSTAKA

Saputra, H., Layun, M. K., Rusdi, & Ain, A. (2021). Gambaran Kualitas Tidur Yang Terjadi Pada Lansia Di Panti Sosial Tresna Werdha Nirwana Puri Samarinda Pada Era Pandemi Covid-19. Jurnal Keperawatan Wiyata, 2 (1), 11. https://doi.org/10.35728/jkw.v2i1.430

Alvita, G. W., Faidah, N., & Tutik, F. V. (2021). Hubungan Kadar Asam Urat Dengan Kualitas Tidur Pada Lansia Di Desa Dukuhseti Pati. Jurnal Ilmu Kesehatan MAKIA, 11(2), 15–21.

Ratna ningsi dkk. Pengaruh TAI-CHI Excercise terhadap intensitas nyeri Rheumatoid Arthritis pada lansia. media Kesehat. 2016;9:63.

Andri J, Padila P, Sartika A, Putri SEN, Harsismanto J. Tingkat Pengetahuan terhadap Penanganan Penyakit Rheumatoid Artritis pada Lansia. J Kesmas Asclepius. 2020;2(1):12–21.

Eva Latifah Nurhayati. Pengaruh Pemberian Bromelain Nanas Terhadap Penurunan Inflamasi Pada Lansia Penderita Rheumatoid Arthritis Di Panti Jompo Yayasan Guna Budi Bakti Medan. J Marternitas Kebidanan. 2018;3(no 2).

Arnis A. Hubungan Antara kuantitas dan Kalitas Tidur Dengan D III Keperawatan Poltekkes Kemenkes jakarta 1. kesehatan. 2018;9 no 1:33.

Siregal R. Hubungan kualitas tidur dengan kualitas hidup pasien gagal ginjal kronik yang menjalani hemodialisa. institut kesehatan helvetia medan; 2017.

Rufaridah A. Pengaruh Kompres Serai Hangat Terhadap Penurunan Intesitas Nyeri Rhematoid Arthritis. Ensiklopedia J. 2020;2(2):77–83.

Putri DUP, Astuti WS. Pengaruh Penggunaan Minyak Serai (Cymbopogon nardus L Oil) terhadap Penurunan Intensitas Nyeri Artritis Rheumatoid pada Lansia. J Kesehat. 2020;11(3):468.

Erfrandau. Pengaruh Terapi Tawa terhadap Kualitas Tidur pada Lansia di Unit Pelayanan Teknis Panti Sosial Lanjut Usia (UPT PSLU) Kabupaten Jember (The Effect of Laughter Therapy on Sleep Quality of Elderly in Long-Term Care Jember). Pustaka Kesehat. 2017;5(2):276–83.

Kurniawan. No Hubungan Kualitas Tidur Dengan Kualitas Hidup Pada Lansia Di Kelurahan Karangasem Kecamatan Lawean Surakarta. 2017;87(1,2):149–200.

Bukit EK. Kualitas Tidur Dan Faktor-faktor Gangguan Tidur Klien Lanjut Usia. Keperawatan Indones. 2003;9(2):41–7.

Yuli yunara. Hubungan Nyeri Rheumatoid Arthritis dengan kualitas Tidur lansia di PSWT BUDI. 2019.