APPLICATION OF BACK MASSAGE FOR RHEUMATOID ARTHRITIS PATIENTS WITH CHRONIC PAIN IN PONDOK RANGGON URBAN VILLAGE

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Abstract

Rheumatoid arthritis is a chronic disease that has become a global health problem due to its increasing prevalence and its impact on patients' quality of life. Based on the 2018 Basic Health Research (Riskesdas), the prevalence of joint diseases including rheumatoid arthritis reached 11.9% based on healthcare professionals' diagnosis and 24.7% based on diagnosis or symptoms. Patients with rheumatoid arthritis are at high risk for comorbidities such as cardiovascular disease, infection, osteoporosis, and other malignancies. This study aimed to provide family nursing care for rheumatoid arthritis cases in Pondok Ranggon Subdistrict with chronic pain problems using back massage intervention. The research method used the nursing process including assessment, diagnosis, intervention, implementation, and evaluation. The instruments used were family nursing care assessment form and observation sheets for pain scale measurement using the Numeric Rating Scale (NRS) and PQRST. The study subjects consisted of two respondents who experienced rheumatoid arthritis with chronic pain.Chronic pain in patients with rheumatoid arthritis requires appropriate management, one of which is through non-pharmacological intervention in the form of back massage therapy. This intervention is used to help reduce pain intensity, increase relaxation, and provide a sense of comfort. The intervention focused on pain management by providing back massage therapy for 7 days, performed for 10-15 minutes per session.The conclusion of this study is that back massage was proven to reduce pain in patients with rheumatoid arthritis both in terms of decreased pain scale and changes in several aspects of PQRST.

Keywords: Rheumatoid Arthritis, Chronic Pain, Back Massage

1. INTRODUCTION

Rheumatoid arthritis is an autoimmune disease that causes chronic inflammation of the joints, characterized by swelling and pain (1). On joint examination, swelling, tenderness, increased temperature in the joint area, and limitation of joint movement are often found (2). According to the Indonesian Health Profile (2023), the number increased in 2022 to 23,711 cases

(3). At the regional level, especially in DKI Jakarta Province, cases of rheumatoid arthritis are still found in various health care facilities. One data showed that at Sawah Besar Regional Hospital, Central Jakarta (4), 21 cases of rheumatoid arthritis were recorded. Although specific prevalence data in Jakarta is still limited, an epidemiological approach shows that the prevalence of rheumatoid arthritis in Indonesia ranges from 0.1% to 0.3% of the adult population (5).

Research conducted in Pinang Ranti Subdistrict (6) showed that this disease is one of the degenerative diseases often experienced by the community and contributes to the emergence of chronic pain and activity limitations. Based on data from the 2020 Cipayung Subdistrict Health Center report, data on rheumatoid arthritis was 464 people (7).

The course of rheumatoid arthritis can cause extra-articular complications (2). Effective pain management is an important part of caring for patients with rheumatoid arthritis because the pain experienced can affect not only their physical condition, but also their mental and social health, as well as their ability to carry out daily life (8).

Nurses have an important role in overcoming chronic pain in patients with rheumatoid arthritis through the provision of comprehensive nursing care. Nurses can provide emotional support, coordinate with other health workers, and ensure patients receive services according to their needs (9). In addition, evaluation needs to be carried out to determine the effectiveness of the actions that have been given and to monitor the development of the patient's condition periodically (10). Nurses can also encourage healthy lifestyle modifications such as regular physical activity, stress management, and control of risk factors that have the potential to worsen the patient's condition (11).

Rehabilitative nursing interventions, including range of motion (ROM) exercises, joint protection techniques, and non-pharmacological therapies such as relaxation and physical exercise, have been proven effective in improving functional recovery of rheumatoid arthritis patients (12). Complementary therapies such as back massage are known to have potential in reducing pain levels and increasing patient comfort (8).This therapy is included in non-pharmacological interventions carried out through a physical approach. The application of massage is also considered safe because it has minimal side effects and is easy to apply (13). Back massage is a technique of massaging the back of the body with gentle stroking movements. Thus, the spinal cord will convey impulses to the brain, and the brain will convey information throughout the body so that it can cause pain to decrease in all joints (14). Applying lotion or balm to the massaged area can cause a warm sensation that triggers dilation of blood vessels in the area, or vasodilation. This increases cell activity, relieves pain, and supports the tissue healing process (15).

Research conducted by Mailani et al. (2020) showed that back massage reduced the intensity of pain caused by rheumatoid arthritis in the elderly (14). Before the intervention, the average pain level of respondents was 4.97 which was included in the moderate pain category. After therapy, the average pain level decreased to 3.27 which was included in the mild pain category. Further research conducted by Ayu & Paneo (2025) with cutaneous slow stroke back massage intervention showed that the majority of respondents (46.2%) experienced mild pain, with the remainder (53.8%) experiencing moderate pain (16). Based on the results of research (Aryandani & Hermawati, 2017) the application of back therapy showed that the pain intensity of both subjects decreased (17).

The novelty of this present study lies in the application of a case study method with a family nursing care approach involving two subjects, combined with family education regarding back massage intervention.

2. METHODOLOGY

This scientific paper used a descriptive research with a case study approach. Descriptive research aimed to present facts and characteristics of the study subject systematically, objectively, and accurately. The case study approach was chosen because the researchers wanted to provide an in-depth description of the implementation of family nursing care for rheumatoid arthritis patients with chronic pain problems through back massage intervention.This research method used the nursing process which included assessment, nursing diagnosis, intervention, implementation, and nursing evaluation. The study was focused on the application of back massage as a non-pharmacological intervention to help reduce the intensity of chronic pain in rheumatoid arthritis patients within the family scope.

3. RESULTS

This study was conducted for 7 days involving 2 research subjects from 2 different families diagnosed with Rheumatoid Arthritis who experienced chronic pain. This study was conducted from May 18 to May 25, 2026.

3.1 Result of NRS Scale Observation

The following are the results of pain measurement before and after the intervention for pain reduction and the difference in its reduction.

3.1.1 Result of NRS Scale Observation

Pain assessment was conducted through pain observation using the NRS scale, as described below.

Table 1. Observation Results of Pain Intensity Based on NRS

Day/Date	Aspect Assessed	Mrs B		Mrs A	
		Pre	Post	Pre	Post
Monday, May 18, 2026	**Pain Scale NRS**	6	4	4	3
Tuesday, May 19, 2026		6	4	4	3
Wednesday, May 20, 2026		6	4	4	3
Thursday, May 21, 2026		6	4	4	3
Friday, May 22, 2026		4	3	4	3
Saturday, May 23, 2026		4	3	3	2
Monday, May 25, 2026		4	3	3	2

Based on the table above, the measurement of pain scale using the Numeric Rating Scale (NRS) after the administration of back massage for 7 days showed a decrease in pain intensity in both respondents.In Mrs. B, the measurement results showed that before back massage was administered on the first day, the pain scale score was at 6, which was categorized as moderate pain. After back massage was administered on the seventh day, the pain scale score decreased to 3, which was categorized as mild pain.In Mrs. A, the initial measurement showed that the pain scale before back massage was performed on the first day was at 4, categorized as moderate pain. After back massage was administered on the seventh day, the pain scale score decreased to 2, which was categorized as mild pain. This indicated a reduction in pain after back massage was performed on Mrs. B and Mrs. A.

In patients with rheumatoid arthritis, chronic pain occurs due to the inflammatory process in the synovial membrane that triggers the release of inflammatory mediators, causing pain, stiffness, and activity disturbance (18). Nursing implementation in both respondents was Pain Management. In the intervention, actions carried out included pain assessment using PQRST pain assessment, measurement of pain intensity using the Numeric Rating Scale (NRS), and implementation of non-pharmacological action in the form of back massage. The implementation of back massage in this case study was carried out as part of Pain Management implementation. This action was given gradually for seven days with the aim of helping to reduce pain and increase comfort, which was in line with the concept of the benefits of back massage according to (15).

The results of implementation in this case study were in line with the theory of rheumatoid arthritis management according to (17) which stated that in addition to pharmacological therapy, management can also be carried out through non-pharmacological therapy, such as resting painful joints, maintaining ideal body weight, eating a balanced diet, using warm compresses, performing physiotherapy, and complementary therapy in the form of back massage.

The results of this evaluation were also supported by research (Abdillah & Suwandi, 2020) which showed that the intensity of rheumatic pain in the elderly was in the moderate pain category and after intervention, the majority was in the mild pain category.

3.2 Average Reduction of Pain Scale

The difference between the pain measurements taken before and after the procedure is explained below

Table 2. Average Reduction of Pain Scale

Pain Scale Reduction	Respondents	
	Mrs. B	**Mrs. A**
Pre	5,14	3,71
Post	3,57	2,71
Mean Reduction	1,57	1

Based on the data above, the mean pain scale before and after back massage administration showed a decrease in pain intensity in both respondents. The mean pain scale of Mrs. B before the intervention was 5.14 and after the intervention it became 3.57. Meanwhile, in Mrs. A, the mean pain scale before the intervention was 3.71 and after the intervention it became 2.71. From these data, the mean reduction in pain scale in Mrs. B was 1.57 points, while in Mrs. A it was 1 point.

Based on the evaluation of results, both respondents showed improvement after seven days of nursing implementation. In Mrs. B, the evaluation results showed a decrease in pain scale from 6 on the first day to 3 on the seventh day, so the pain which was initially in the moderate category decreased to mild. In addition to the decrease in scale, changes were also seen in the quality of pain, where the painful sensation which initially felt hot and numb gradually became numb only.

In Mrs. A, the evaluation results also showed a decrease in pain scale from 4 on the first day to 2 on the seventh day, indicating that pain decreased from the moderate to mild category. The quality of pain in Mrs. A, which was initially felt as hot and numb, also changed to numb only, and complaints in the left hand felt lighter than before the intervention was given.

3.3 Results of Pain Observation Using PQRST

Pain assessments performed on the patient before and after the procedure also utilized the PQRST approach, which is described below.

Table 3. PQRST Observation

Aspect Assessed	**Mrs. B**		**Mrs. A**	
Method	Pre	Post	Pre	Post
PQRST	Monday, May 18 2026	Monday, May 25 2026	Monday, May 18 2026	Monday, May 25 2026
P	Mrs B stated that pain was felt upon waking up in the morning, when standing too long and sitting too long	Mrs B tated that pain was felt upon waking up in the morning, when standing too long and sitting too long, the joint did not feel too hot	Mrs A stated that her hand felt painful when riding a motorcycle and would decrease if rested	Mrs A stated that her hand felt painful

Q	Mrs B stated that her hand joints felt hot and numb	Mrs B stated that after 7 days of back massage intervention, the joint pain did not feel too hot	Mrs A that her hand joints felt hot and numb	Mrs A stated that her hand joints felt hot and numb
R	Mrs. B stated that joint pain was felt in both hands	Mrs. B stated that after 7 days of back massage intervention, the joint pain in both hands was reduced	Mrs. A stated that both hand joints were painful, but the left side was more dominant	Mrs. A stated that after back massage intervention for 7 days, the joint pain in her left hand began to feel lighter and she was able to concentrate while riding a motorcycle
S	Mrs. B stated that the pain scale was 6 or moderate pain	Mrs. B stated that the pain scale was 3 or mild pain	Mrs. A stated that the pain scale was 4 or moderate pain and interfered with concentration	Mrs. A stated that the pain scale was 2 or mild pain
T	Mrs. B stated that the pain had been felt for 6 months, was felt continuously, and worsened in the morning and evening	Mrs. B stated that the pain had been felt for 6 months	Mrs. A stated that the pain had been felt for 4 months	Mrs. A stated that the pain had been felt for 4 months

Based on Table 3, the pain assessment using the PQRST method before back massage administration showed that both respondents experienced pain complaints due to rheumatoid arthritis, characterized by pain in the hand joint area, a sensation of heat, and limitations in performing daily activities

In the aspect of Provocation/Palliation (P), the observation results showed that before and after the intervention, Mrs. B and Mrs. A still gave the same response. Mrs. B stated that pain was felt mainly upon waking up in the morning, when standing too long, and when remaining still for a long time, while Mrs. A stated that hand pain appeared during activities such as riding a motorcycle and decreased when the hand was rested.

In the aspect of Quality (Q), before the intervention, Mrs. B described pain as a sensation of heat and numbness in both hands. After back massage, Mrs. B stated that pain and discomfort in both hands had decreased. Meanwhile, Mrs. A gave the same response before and after the intervention, stating that her hand joints felt hot and numb.

In the aspect of Region (R), before the intervention, Mrs. B felt pain in both hands. After 7 days of back massage, Mrs. B stated that pain in both hands had decreased. In Mrs. A, before the intervention, pain was felt in both hands but was more dominant in the left hand. After back massage, Mrs. A stated that pain in her left hand had begun to decrease and activities such as riding a motorcycle became easier to perform.

In the aspect of Severity (S), before the intervention, Mrs. B had a pain scale of 6 (moderate pain) and after 7 days of back massage, the pain scale decreased to 3 (mild pain). Meanwhile, in Mrs. A, before back massage, the pain scale was 4 (moderate pain) and after back massage, it decreased to 2 (mild pain). This indicated a decrease in pain intensity after therapy administration.

In the aspect of Time (T), both respondents showed complaints of chronic pain.

4. CONCLUSIONS

Nursing implementation was carried out for 7 days in both respondents according to the planned intervention. The implementation included periodic pain assessment using PQRST pain assessment, measurement of pain intensity using the Numeric Rating Scale (NRS), and administration of back massage therapy for 7 days performed for 10-15 minutes as an additional therapy to help reduce chronic pain in both respondents.

Nursing evaluation showed that the intervention given had a positive impact on pain reduction in both respondents. In Mrs. B, the pain scale decreased from 6 to 3 with an average decrease of 1.57 and changes in aspects Q, R, and S. In Mrs. A, the pain scale decreased from 4 to 2 with an average decrease of 1 and changes in aspects R and S.

The focus of the case study results can be concluded that the provision of back massage therapy as part of pain management intervention can help reduce chronic pain in patients with rheumatoid arthritis, both in terms of decreasing pain scale and changes in several aspects of PQRST.

ACKNOWLEDGEMENTS

We extend our gratitude to the respondents who dedicated their time and allowed us to perform the back massage procedure, and who derived significant benefits from this treatment. We also thank the research team for their excellent collaboration, which ensured the study proceeded smoothly and met its objectives

REFERENCES

[1] Hernawati, D., Rija'I, H. R., & Rijai L. Analisis Penggunaan DMARD dan Antiinflamasi Pada Penderita Rheumatoid Arthritis Di RSUD Abdoel Wahab Sjahranie Samarinda. J Mandala Pharmacon Indones [Internet]. 2024;10(1):74–9. Available from: https://doi.org/10.35311/jmpi.v10i1.498

[2] Hidayat, R., Suryana, B. P., Wijaya, L. K., Ariane A, Hellmi RY, Adnan E & S. Diagnosis dan Pengelolaan Artritis Reumatoid. Perhimpunan Reumatologi Indonesia. 2021.

[3] Sastra SA. Faktor-Faktor Yang Berhubungan Dengan Kejadian Rheumatoid Artritis Pada Lansia Di Wilayah Kerja Puskesmas Anggaberi Kabupaten Konawe Tahun 2024. J Penelit Sains Dan Kesehat Avicenna. 2025;4(1):37–48.

[4] Mustafida, I. & J. Hubungan Tingkat Aktivitas Fisik Dengan Kekambuhan Rheumatoid Arthritis di RSUD Sawah Besar Jakarta Pusat. 2025;4(2):248–55.

[5] Arianita, D., Nurman, M., & Lestari RR. Faktor-Faktor Yang Berhubungan Dengan Kejadian Rheumatoid Arthritis Pada Lansia Di Desa Kampa Kecamatan Kampa. Excell Heal J [Internet]. 2024;2(2):272–80. Available from: https://doi.org/10.70437/excellent.v2i2.49

[6] Susanti, F., Nur, E. S. Gambaran Pengetahuan Lansia Tentang Rheumatoid Arthritis Yang Menjalani Perawatan Di Ppslu Mappakasunggu Kota Parepare. J Kesehat Lentera Acitya. 2019;6(1):401–6.

[7] Hartadinata H. Pengaruh Kompres Hangat Serai Terhadap Penurunan Intensitas Nyeri Rheumatoid Arthritis di Wilayah Kelurahan Pondok Ranggon Jakarta Timur. 2021;

[8] Available from: https://repository.bku.ac.id/id/eprint/1267

[9] Lisdahayati, Pome, G., Saprianto, Martadinata, U. H. & A. Manajemen Nyeri Dengan Kombinasi Terapi Back Massage Dan Slow Breath Exercise Pada Nyeri Pasien Lansia Rheumatoid Arthritis. 2025;10(1):1–7.

[10] Susanto. Konsep keperawatan Dasar. Pustaka Lombok; 2023.

[11] Sihombing. Buku Ajar Keperawatan Keluarga. Eureka Media Aksara; 2024.

[12] El Aoufy, K., Magi, C. E., Melis, M. R., Caffarri, C., Civile, G., Daffini, E., Loss, E., Ortis, H., Rinaldi, A., Zonca, C., Bambi, S. & R. Therapeutic Education for Safer Rheumatologic Care: A Scoping Review to Map Evidence on Infection Prevention [Internet]. Vol. 15. 2025. Available from: https://doi.org/10.3390/nursrep15120431

[13] Ma. H. Analysis of the Effect of Rehabilitation Nursing Intervention on Functional Recovery in Patients with Rheumatoid Arthritis. Bone Arthrosurgery Sci [Internet]. 2024;2(8):38–43. Available from: ttps://doi.org/10.26689/bas.v2i1.5675

[14] Indah, Surnarti. Penerapan Terapi Massage Terhadap Penurunan Skala Nyeri Pada Pasien Rheumatoid Artritis Di Rumah Sehat Zein Holistik Theraphy Kota Makassar. Paradigma. J Filsafat, Sains, Teknol Dan Sos Budaya [Internet]. 2025;31. Available from: https://doi.org/10.33503/paradigma.v31i2.2391

[15] Mailani, R., Lutfi, A. & A. Pengaruh Terapi Back Massage Terhadap Penurunan Nyeri Rheumatoid Arthritis Pada Lansia. J Ners. 2020;4(23):40–6.

[16] Abdillah, A. J., & Suwandi MF. Pengaruh Terapi Back Massage Terhadap Penurunan Nyeri Reumatik Pada Lansia. J Ners [Internet]. 2020;4(2):40–6. Available from: https://www.ejournal.stikesbrebes.ac.id/index.php/jomhear/article/view/43%25 0Ahttps://www.ejournal.stikesbrebes.ac.id/index.php/jomhear/article/downlo ad/43/26

[17] Ayu, S., & Paneo RS. Pengaruh Stimulus Kutaneus Slow Stroke Back Massage Terhadap Nyeri Sendi Pada Lansia Rheumatoid Arthritis di Wilayah Kerja Puskesmas Mamajang. 2025;14(2):92–103. Available from: https://doi.org/10.29238/caring.v14i2.2766

[18] Aryandani, & Hermawati. Penerapan Terapi Back Massage pada Nyeri Lansia Penderita Rematik di Puskesmas kaliwungu. Vitalitas Medis. J Kesehat Dan Kedokt [Internet]. 2017;1(4):35–44. Available from: https://journal.lpkd.or.id/index.php/ViMed/article/view/751/1230

[19] Ningtyas et al. Manejemen Nyeri [Internet]. PT Media Pustaka Indo; 2023. Available from: https://repository.ubr.ac.id/medias/journal/Ebook_Manajemen_Nyeri-1.pdf