

## PROFILE OF KNEE OSTEOARTHRITIS PATIENTS IN THE DEPARTMENT OF PHYSICAL MEDICINE AND REHABILITATION, MOHAMMAD HOESIN HOSPITAL, PALEMBANG

Rara Intan Rachmawati<sup>1</sup>, Jalalin<sup>2</sup>, Indri Seta Septadina<sup>3\*</sup>, Margareta Dewi Dwiwulandari<sup>2</sup> Nyimas Fatimah<sup>2</sup>

<sup>1</sup>Medical Education Program , Faculty of Medicine, Universitas Sriwijaya , Palembang, Indonesia

<sup>2</sup>Department of Physical Medicine and Rehabilitation , Faculty of Medicine, Universitas Sriwijaya , Palembang, Indonesia

<sup>3</sup>Department of Anatomy , Faculty of Medicine, Universitas Sriwijaya , Palembang, Indonesia

### ARTICLE INFORMATION

#### Corresponding author:

Indri Seta Septadina  
Department of Anatomy ,  
Faculty of Medicine, Sriwijaya  
University , Palembang,  
Indonesia

#### E-mail:

[indrisetaseptadina@fk.unsri.ac.id](mailto:indrisetaseptadina@fk.unsri.ac.id)

#### Keywords :

Osteoarthritis  
Rehabilitation medical  
personnel  
Characteristics clinical  
Physiotherapy

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*Osteoarthritis*  
*Medical Rehabilitation*  
*Clinical Characteristics*  
*Physiotherapy*

#### Original submission:

December 8, 2025

#### Accepted:

January 12, 2026

#### Published:

January 24, 2026

### ABSTRACT

Osteoarthritis (OA) is a musculoskeletal degenerative disease that often occurs in old age, with osteoarthritis Genu is the most common form. The main symptoms include pain, stiffness, and limited range of motion, which impact physical function and quality of life. This study aims to describe the characteristics of genu OA patients at Mohammad Hoesin Hospital, Palembang, based on sociodemographics , body mass index (BMI), clinical manifestations, duration of diagnosis, comorbidities , therapies, and their completeness. This study used a descriptive observational design with a cross-sectional approach. Data were obtained from interviews and medical records of patients who met the inclusion criteria, and were analyzed using SPSS version 26. The results showed that most patients were female, had normal BMI, had mild pain, mild bilateral OA, moderate functional ability, and had been diagnosed for more than one year. Patients most likely had no history of trauma or comorbidities . The most frequently administered therapies were TENS and exercise, with most patients receiving more than two types of therapy and using NSAIDs. Most patients did not use walking aids and did not undergo TKR. Therapy compliance was very good, with all patients attending therapy 2–3 times per week.

### ABSTRACT

**Profile from Knee Osteoarthritis Patient in the Department Physique Drug And Rehabilitation at Mohammad Hoesin Hospital, Palembang.** Osteoarthritis (OA) is a common disease . degenerative musculoskeletal disease , especially between That elderly . Osteoarthritis of the knee is That most common form And is marked by pain , stiffness , and limited range from movement , leading to decrease physique function And quality from This life descriptive cross-sectional study aims to describe That characteristics from knee OA patients at Mohammad Hoesin Regional Hospital , Palembang, including sociodemographic factors , BMI, clinical manifestation , duration diagnosis , comorbidities , treatment , and Compliance . Data obtained . from Be patient interview And medical notes And analyzed using SPSS version 26. Most of the Patients were mostly female (88.5%), had normal BMI (61.5%), and mild symptoms. pain (69.2%), bilateral involvement (73.1%), mild OA value (76.9%), and currently functional ability (46.2%) . The majority have diagnosed For Again compared to One years (92.3%), with NO history trauma (61.5%) or comorbidities (69.2%). TENS and the exercise is most often managed therapy , with Again compared to two treatment modality provided (100.0%) and use of NSAIDs reported in 30.4% of patients . Most of them not using ongoing assistance (96.4%) and did not undergo TKR (96.4%). Treatment obedience is very good , with all patient attend therapy 2–3 times per week . In conclusion , knee OA patients on this hospital is mostly Woman with mild bilateral disease And Good treatment compliance .

## INTRODUCTION

Osteoarthritis (OA) is one of the most common degenerative diseases in chronic musculoskeletal disorders, especially in the elderly.<sup>1</sup> OA can affect various joints, but the most common is knee OA. Prevalence of Osteoarthritis. The incidence of OA is higher than that of other OA joints.<sup>2</sup> Some clinical symptoms experienced by OA patients include pain, stiffness, and limited joint movement, which result in decreased physical function and difficulty in performing *activities. Daily Living* (ADL) and quality of life.<sup>3</sup>

Prevalence of knee OA according to *the World Health Organization (WHO)*. *The World Health Organization (WHO)* reported that approximately 250 million people worldwide (3.6% of the population) suffered from joint disease in 2020. Based on data from the 2020 Basic Health Research (RISKESDAS), the prevalence of joint disease in Indonesia is approximately 7.3%.<sup>4</sup> The prevalence of knee OA is approximately 22% of total OA cases.<sup>5</sup> This condition has led to an increase in the incidence of knee OA in Indonesia. Based on research data, approximately 80% of OA sufferers experience limitations in their activities, and 25% of them are unable to perform ADL independently.<sup>3</sup>

Prevention and treatment efforts for knee OA patients can be provided pharmacologically, non-pharmacologically, and surgically.<sup>6</sup> It is necessary to provide patient education on lifestyle modification and weight control, as well as on aerobic exercise programs and physiotherapy. To be more effective in reducing symptoms, pharmacological drugs commonly used in OA patients, such as acetaminophen and non-steroidal anti-inflammatory drugs (NSAIDs), can be prescribed while still paying attention to their contraindications and side effects, based on the patient's clinical condition.<sup>2</sup> If the patient with knee OA does not improve after being managed both pharmacologically and non-pharmacologically, surgical procedures can be performed on the OA knee called Total Knee *Replacement* (TKR). TKR is usually given to patients with severe OA. *Knee TKR* is a surgical procedure that replaces a damaged knee joint with an artificial one. The goal of TKR is to reduce pain and improve mobility or physical function in patients with OA.<sup>7</sup>

Treatment of patients with knee OA requires medical management in medical rehabilitation, especially in conservative therapy, according to the patient's condition, to demonstrate the effectiveness of the provided medical management. Medical rehabilitation is a medical service that addresses illnesses/conditions through a combination of medical interventions and physical therapy according to the patient's condition, with the aim of alleviating pain, discomfort, and disability and improving physical function.<sup>8</sup> To achieve these goals, treatment of abnormalities and decreased physical function is necessary. Treatment in medical rehabilitation typically involves therapy. Common types of medical rehabilitation therapy include physical therapy (physiotherapy), focusing on muscle mobilization and strength; occupational therapy, focusing on ADL skills; and speech therapy, focusing on speech and motor skills.

Patients with knee OA are generally given a combination of physiotherapy, *exercises*, and walking aids. Physiotherapy is a medical rehabilitation effort to prevent physical limitations caused by injury or disease. Examples of physiotherapy often given to patients with OA of the knee include transcutaneous Electrical Nerve Stimulation (TENS), neuromuscular plastering, ultrasound, microwave *diathermy* (MWD), and so on, with the aim of reducing pain and spasms and increasing muscle strength.<sup>9</sup> In addition to physiotherapy, efforts are made to facilitate mobility for OA patients, including prosthetic orthotics (walking aids). Examples of prosthetic orthotics for OA patients include the *knee. knee orthosis, disarticulation, knee prosthesis, ankle foot orthosis*, etc.<sup>10</sup>

The impairment experienced by patients with OA genu in performing ADL is a significant problem because it directly impacts the patient's quality of life. This condition requires serious treatment, especially through an appropriate medical rehabilitation approach. Based on these considerations, the author is interested in conducting a study on the profile of OA genu patients at the Medical Rehabilitation Installation of Mohammad Hoesin Hospital (RSMH) Palembang. The study provides a more complete and in-depth profile of knee OA patients, addressing not only their risk factors, socio-demographic and clinical factors, but also their treatment and history. The profile of OA genu patients that will be studied in detail includes age, gender, physical activity, severity, frequency of diagnosis, number of affected joints, pain scale, physical function, history of trauma and comorbidities, TKR, BMI, comorbidities, pharmacological history, type of therapy received, frequency and duration of treatment, patient compliance, and walking aids. Through this study, it is hoped that a picture of the condition of OA genu patients can be obtained, which can later serve as the basis for more effective rehabilitation planning. The purpose of this study is to determine the profile of Osteoarthritis Patients Genu at the Medical Rehabilitation Installation of Mohammad Hoesin Hospital (RSMH) Palembang.

## **METHODS**

This research is a descriptive observational study with a cross-sectional design (*sectional*) which aims to determine the profile of Osteoarthritis patients Genu at the Medical Rehabilitation Installation of Mohammad Hoesin Hospital (RSMH) Palembang. This study was conducted on 26 patients who were treated at the Medical Records Installation and Medical Rehabilitation Installation of Mohammad Hoesin Hospital (RSMH), Palembang, in August 2025, who met the inclusion and exclusion criteria using a consecutive sampling method.

The variables observed in this study include patient profiles (age, gender, physical activity, severity, frequency of diagnosis, number of joints affected, pain scale, physical function, history of trauma, history of TKR, BMI, comorbidities, pharmacological history, type of therapy received, frequency and duration of treatment, patient compliance, walking aids) of osteoarthritis of the knee at the Medical Rehabilitation Installation of Mohammad Hoesin Hospital (RSMH) Palembang. This research has also received ethical approval from Mohammad Hoesin Hospital, Palembang No. DP.04/03/D.XVIII.06.08/ETIK/162/2025

## **RESULTS**

The research data were obtained from secondary data collection in the form of medical records and primary data through questionnaires conducted through structured interviews by the researcher. This study included 37 patients, 26 of whom had osteoarthritis. Genu met the inclusion criteria and were taken as the study sample. Eleven patients were excluded due to missing study variables in their medical records. The data obtained were processed using the program *Statistics Product and Service Solutions* (SPSS) version 26.0, then explained univariately. The research results are presented in tabular and narrative form as follows.

**Table 1. Frequency Distribution of OA Genu Patient Profiles at the RSMH Palembang Medical Rehabilitation Installation based on patient characteristics, based on sociodemographics, and BMI**

| Demographics   | O'clock |      |
|--|---------|------|
|  | N       | %    |
| Age  |         |      |
| Productive adult age (25-55 years)                     | 9       | 34.6 |
| Elderly ( $\geq 55$ years)                             | 17      | 65.4 |
| Gender   |         |      |
| Man  | 3       | 11.5 |
| Woman  | 23      | 88.5 |
| Physical Activity (PAL )                               |         |      |
| Light (1.4 – 1.69)                                     | 10      | 38.5 |
| Medium (1.7 – 1.99)                                    | 10      | 38.5 |
| Weight ( > 2.0)  | 6       | 23.1 |
| Body Mass Index  |         |      |
| <i>Underweight</i> ( $\leq 18.49$ kg/ m <sup>2</sup> ) | 1       | 3.8  |
| Normal (18.5 - 24.9 kg/ m <sup>2</sup> )               | 16      | 61.5 |
| <i>Excess weight</i> (25-27 kg/ m <sup>2</sup> )       | 9       | 34.6 |
| Obesity ( $\geq 27$ kg/ m <sup>2</sup> )               | 0       | 0    |

**Table 2. Frequency Distribution of OA Genu Patient Profiles at the Medical Rehabilitation Installation of RSMH Palembang based on clinical manifestations of OA (n= 26)**

| Clinical Manifestations of OA                   | O'clock |      |
|---|---------|------|
|   | N       | %    |
| Pain Rating Scale (NPRS)                        |         |      |
| 1. 0: No pain                                   | 0       | 0    |
| 2. 1-3: Mild pain                               | 6       | 23.1 |
| 3. 4-6: Moderate pain                           | 18      | 69.2 |
| 4. 7-10: Severe pain                            | 2       | 7.7  |
| Genu Joints Affected                            |         |      |
| 1. Unilateral                                   | 7       | 26.9 |
| 2. Bilateral                                    | 19      | 73.1 |
| Degree of Severity ( <i>Kallgren Lawrence</i> ) |         |      |
| 1. Grade 1:                                     |         | 0    |
| 2. Grade 2: mild                                | 0       | 76.9 |
| 3. Grade 3: moderate                            | 20      | 23.1 |
| 4. Grade 4: severe                              | 6       | 0    |
|   | 0       |      |
| Functional Ability (WOMAC)                      |         |      |
| 1. 0-24: light                                  | 11      | 42.3 |
| 2. 24-48: moderate                              | 12      | 46.2 |
| 3. 48-72: heavy                                 | 3       | 11.5 |
| 4. 72-96: very heavy                            | 0       | 0    |

**Table 3. Frequency Distribution of OA Genu Patient Profiles at the RSMH Palembang Medical Rehabilitation Installation based on the duration of diagnosis and the history contained (n = 26)**

|                            | O'clock |         |
|----------------------------|---------|---------|
|                            | N       | %       |
| Diagnosed Duration         | 24      | 92.3    |
| 1 year                     | 2       | 7.7     |
| < 1 year                   |         |         |
| Compliance History         |         |         |
| Regularly (2-3 times/week) |         |         |
| Irregular                  | 26      | 100,000 |
|                            | 0       | 0       |
| Total                      | 26      | 100,000 |

There are two types of profiles based on previous illnesses: history of trauma and history of comorbidities ( Table 4). Based on the history of trauma in OA genu patients at RSMH, the majority of patients had no history of previous trauma, with a frequency of 16 samples (61.5%). Furthermore, based on the history of comorbidities, the results showed that the majority of knee OA patients had no comorbidities, with 18 samples (69.2%).

**Table 4. Frequency Distribution of OA Genu Patient Profiles at the RSMH Palembang Medical Rehabilitation Installation Based on Previous Medical History (n= 26)**

| Previous Medical History | O'clock |      |
|--------------------------|---------|------|
|                          | N       | %    |
| Trauma History           |         |      |
| 1. There is              | 10      | 38.5 |
| 2. There isn't any       | 16      | 61.5 |
| Comorbid Diseases        |         |      |
| 1. There is              | 8       | 30.8 |
| 2. There isn't any       | 18      | 69.2 |

Knee OA patients are shown in Table 5, which includes therapeutic modalities, the number of therapies, medication type, walking aids, and TKR procedures. Based on the therapeutic modalities, OA genu patients at RSMH mostly received TENS therapy. Based on the number of therapies received, the results showed that all samples fell into the >2 therapies category, indicating that 26 samples (100.0%) had received therapy more than 2 times, which is consistent with the duration of diagnosis. Furthermore, based on the type of medication frequently used in OA genu patients at RSMH, the type of anti-inflammatory NSAID was more common. Then, for the use of walking aids, the results showed that OA genu patients at RSMH were predominantly not using walking aids, with a frequency of 25 samples, and only 1 sample was using a walking aid. In addition, for TKR procedures, OA genu patients at RSMH mostly did not undergo TKR procedures, with a frequency of 25 samples (3.6%).

**Table 5. Frequency Distribution of OA Genu Patient Profiles at the RSMH Palembang Medical Rehabilitation Installation based on treatment (n= 26)**

| Treatment                             | O'clock |         |
|---------------------------------------|---------|---------|
|                                       | N       | %       |
| <b>Medical Rehabilitation Therapy</b> |         |         |
| 1. MWD                                | 8       | 10.7    |
| 2. DOZENS                             | 16      | 21.3    |
| 3. Neuromuscular Recording            | 8       | 10.7    |
| 4. Ultrasonography                    | 12      | 16.0    |
| 5. SWD                                | 7       | 9.3     |
| 6. Exercise Writhing                  | 10      | 13.3    |
| 7. Paraffin                           | 4       | 5.3     |
| 8. Hydrotherapy                       | 10      | 13.3    |
| <b>Number of therapies</b>            |         |         |
| 1. 1 therapy                          | 0       | 0       |
| 2. > 2 therapies                      | 26      | 100,000 |
| <b>Drug Class</b>                     |         |         |
| 1. NSAID                              | 17      | 30.4    |
| 2. Corticosteroids                    | 7       | 12.5    |
| 3. Analgesic                          | 10      | 17.9    |
| 4. CCB                                | 4       | 7.1     |
| 5. PPI                                | 3       | 5.4     |
| 6. Vitamins and Supplements           | 15      | 26.7    |
| <b>Walking Aids</b>                   |         |         |
| 1. There is                           | 1       | 3.6     |
| 2. There isn't any                    | 25      | 96.4    |
| <b>TKR Action</b>                     |         |         |
| 1. There is                           | 1       | 3.6     |
| 2. There isn't any                    | 25      | 96.4    |

## DISCUSSION

Based on findings, older age is a dominant factor in the incidence of OA of the knee, indirectly related to biological changes in the aging process that increase the risk of knee OA.<sup>11</sup> With increasing age, biological changes in the knee joint, such as cartilage thinning, increase pressure on the basal layer, increasing the risk of more severe cartilage damage.<sup>12</sup>

Women are at higher risk, possibly related to several factors related to sexual dimorphism, such as bone shape, cartilage volume, metabolism, and sex hormones. In women, estrogen increases leptin production. Although estrogen levels decrease after menopause, leptin levels are higher in women than in men. Consequently, cartilage volume is smaller in postmenopausal women. Furthermore, hormonal influences in Postmenopausal women accelerate the progression of the disease. In addition to hormonal factors, anatomical differences between men and women also play a role: men have larger tibial and patellar cartilage volumes, while women are more likely to have patellar base defects.

This study found that 17 samples (11.7%) were in the moderate activity category, and 96 samples (66.2%) were in the light activity category. This study demonstrated that moderate to high levels of physical activity reduced physical function in some patients, suggesting a relationship between increased physical activity and knee pain intensity.<sup>13</sup>

The results of this study indicate that the majority of Genu OA patients visiting the Medical Rehabilitation Clinic of Mohammad Hoesin Hospital (RSMH), Palembang, are in the moderate pain category.<sup>14</sup> Patients with hip and knee OA who were going to undergo joint replacement surgery. The study used *the Brief Painful Inventory (BPI) to determine pain category cutoffs and found that 65% of knee OA patients fell into the moderate pain category*. The prevalence of moderate pain in knee OA is due to the slowly progressive nature of the disease's pathological process.

The results of this study indicate that the majority of Genu OA patients visiting the Medical Rehabilitation Clinic of Mohammad Hoesin Hospital (RSMH), Palembang, mostly have bilateral joint involvement. This could occur for several reasons, including overweight to obesity BMI, comorbidities, age, medication use, and a history of OA diagnosis, which can influence the number of dominant bilateral joints compared to unilateral ones.<sup>15</sup>

The results of this study indicate that most Genu OA patients who visited the Medical Rehabilitation Clinic of Mohammad Hoesin Hospital (RSMH) in Palembang predominantly used TENS electrotherapy with exercise. The results of this study are in line with the research of Wu, *et . al.* because TENS is more effective in reducing pain than placebo, however, the combination of TENS with other therapies such as exercise and other modalities provides greater benefits than just a single therapy that is good for reducing pain and improving daily function and patient quality, especially if given for a period of 1 month.<sup>16</sup> *Exercise* plays an important role in the management of OA genu because it has been proven to reduce pain, improve joint function, and slow the progression of the disease.<sup>17</sup>

The results of this study indicate that most of the Genu OA patients who visited the Medical Rehabilitation Polyclinic of Mohammad Hoesin Hospital (RSMH) Palembang were all knee OA patients, as many as 26 samples (100.0%) had received therapy more than two to three times a week, because this was related to the duration of diagnosis. Most Genu OA patients at the RSMH Rehabilitation Polyclinic had been diagnosed for a long time (>1 year), with an average of 7.7 years, according to previous research.<sup>18</sup> A study with the aim of assessing pain and functional ability in OA patients aged 59 years, regardless of sex, after receiving therapy 6 times, observed the problems of pain, decreased ROM, and decreased muscle and functional limitations in daily activities.<sup>19</sup>

Based on the results and discussion of the research that has been carried out, this research has several limitations that need to be considered, namely, only presenting a picture of the clinical profile of Osteoarthritis (OA) genu patients at the Medical Rehabilitation Polyclinic of Mohammad Hoesin Hospital (RSMH), Palembang, with a *cross-sectional design*. *This study was sectional, so it was not possible to compare patients' conditions before and after therapy*. This limited the assessment of the effectiveness of rehabilitation services. The study used secondary data from patient medical records. However, some medical records were incomplete, particularly regarding management and medication administration, leading to the exclusion of some samples.<sup>20</sup>

## CONCLUSION

The majority of patients were women (88.5%), with the elderly age group (65.4%), and daily physical activity assessment in the light-to-moderate group, with the same proportion (38.5%). Profile based on *Body Mass Index of Osteoarthritis patients*. The dominant knee OA had a normal BMI (61.5%) based on calculations between BB and TB patients during the study. A profile based on clinical manifestations in Osteoarthritis patients' knees showed that the majority of pain levels in the mild group (64.3%) were associated with the mild severity level (76.9%). The most common

complaint was bilateral OA (73.1%), which resulted in functional limitations in the moderate group (46.2%).

Profile based on duration of diagnosis that most of the patients with Osteoarthritis Genu had been diagnosed for more than one year (92.3%), with the majority having no history of trauma (61.5%) or comorbid diseases (69.2%).

Osteoarthritis Patients. The most common choice of knee pain was TENS physiotherapy (21.3%), followed by physical exercise. Furthermore, 26 samples received more than two treatments (100.0%) and were supported by NSAID use (30.4%) and supplementation to reduce genu pain. Invasive procedures, such as assistive devices or TKR surgery, were found in only a small proportion of patients (3.6%). Based on patient compliance, all 26 patients (100.0%) were compliant with therapy at a frequency of 2 times/week.

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