


Literature Review: Characteristics Of Patients With Osteoarthritis Genu

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Article Info	ABSTRACT
<p>Keywords: osteoarthritis genu, literature review, risk factors</p>	<p>Osteoarthritis genu is one of the degenerative diseases that often occurs in the elderly population, characterized by progressive damage to the knee joint cartilage that causes pain, limited mobility, and decreased quality of life. This study aims to analyze the characteristics of osteoarthritis genu patients, including demographic profiles, risk factors, severity, and selected treatment patterns, in order to provide more effective intervention recommendations. The method used is a literature review by collect and analyzing various previous studies related to osteoarthritis genu, especially those discussing risk factors, treatment patterns, and health service challenges. The results of the study showed that the majority of patients were postmenopausal women with high levels of obesity, low physical activity, and a history of joint injury. Many patients are late in accessing medical treatment and rely on alternative therapies that have not been proven effective. This study highlights the importance of public education, increasing access to health services, and more targeted health policies to prevent and treat osteoarthritis genu optimally.</p>
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INTRODUCTION

Osteoarthritis (OA) genu is one of the most common degenerative diseases found in the elderly population. This disease is characterized by progressive damage to the joint cartilage, leading to pain, stiffness, limited mobility, and decreased quality of life. OA can affect an individual's ability to perform daily activities, thus impacting their independence. Globally, OA is one of the leading causes of disability, especially in developing countries with increasing elderly populations. Risk factors such as age, obesity, and joint injuries contribute to the development of this disease. Management efforts for OA involve non-pharmacological, pharmacological, and in certain cases, surgical interventions. (Ayu, 2018) .

Epidemiological data show that the prevalence of osteoarthritis (OA) genu continues to increase with age. According to the World Health Organization (WHO), more than 10% of the population over the age of 60 suffers from symptoms of osteoarthritis. Women are known to be more susceptible to OA than men, thought to be due to hormonal factors and different joint structures. In Indonesia, the results of the 2018 Basic Health Research (Riskesdas)

reported that the prevalence of joint pain, including that caused by osteoarthritis, reached around 23.5% in the elderly population. This figure shows a significant health burden, considering that the elderly population in Indonesia continues to grow. Risk factors such as obesity, heavy physical activity, and a history of joint injury also contribute to this condition. Therefore, a comprehensive prevention and handling strategy is needed to reduce its impact (Anisia & Umam, 2020) .

In particular, osteoarthritis (OA) of the genu is often associated with various risk factors, such as obesity, history of joint injury, genetic factors, sedentary lifestyle, and aging. Obesity is a major risk factor that increases the mechanical load on the knee joint, thereby accelerating cartilage damage. A history of joint injury, such as sports trauma or accidents, can also accelerate the process of cartilage degeneration and worsen symptoms of OA genu. Hormonal factors, especially in postmenopausal women, have been reported to contribute to the high prevalence of OA genu in this group, as decreased estrogen levels can affect joint health. In addition, genetic factors are known to play a role in individual susceptibility to OA, while a sedentary lifestyle worsens the condition by weakening the muscles supporting the joint (Nuralamsyah et al., 2023) .

In theoretical studies, osteoarthritis (OA) genu is caused by an imbalance between the degradation and regeneration processes of cartilage that occurs progressively. This damage is triggered by various factors, including chronic inflammation of the synovial membrane that produces inflammatory mediators, such as pro-inflammatory cytokines (IL-1, TNF- α), which accelerate the degradation of the cartilage matrix. In addition, decreased production of proteoglycans and collagen by chondrocytes also contributes to the weakening of the cartilage structure. Biomechanical changes in the joints, such as uneven mechanical loads, also exacerbate this degenerative process. Decreased quality and quantity of synovial fluid reduces joint lubrication, thereby increasing friction between bones and accelerating damage. This process is often exacerbated by oxidative stress that damages cartilage cells and other supporting tissues (Australian Commission on Safety and Quality in Health Care, 2017) .

The phenomenon of osteoarthritis (OA) genu is increasingly relevant in the context of increasing life expectancy and changes in modern lifestyles that tend to be more sedentary. Increased life expectancy has resulted in a larger elderly population, who are at high risk of developing OA and experience symptoms such as chronic pain, stiffness, and activity limitations. These symptoms often interfere with an individual's productivity, reduce their quality of life, and affect their ability to carry out daily life independently. In rural areas, access to OA diagnosis and treatment is often a challenge. Lack of adequate health facilities, limited public knowledge, and a lack of trained medical personnel mean that many OA cases are not handled properly. In addition, economic factors are also an obstacle for some patients to obtain proper treatment, making the disease increasingly difficult to control.

Based on the author's observations, osteoarthritis patients genu in rural areas often receive medical care late. Most patients only seek treatment when the pain has disrupted their daily activities. On the other hand, many patients rely on traditional or alternative medicine, the effectiveness of which has not been scientifically proven. This observation indicates a gap between patient needs and available health services. A literature review shows that most

studies on osteoarthritis genu still focuses on pain treatment and management. Research on patient characteristics, especially in the local context, is still very limited. This creates an important research gap to address in order to understand risk factors, disease patterns, and patient needs more comprehensively.

This study aims to explore more deeply the characteristics of osteoarthritis patients genu, including demographic profile, risk factors, severity, and treatment patterns chosen. By understanding these characteristics, it is hoped that more effective interventions can be developed that are in accordance with patient needs. This study is also expected to contribute to the development of more inclusive health policies, especially for vulnerable groups in society. Through a data-based and observational approach, this study is expected to provide a clearer picture of the phenomenon of osteoarthritis genu in Indonesia. Thus, the results of this study can be the basis for designing better prevention and treatment strategies, while reducing the burden of disability caused by this disease.

In the context of health services, understanding the characteristics of osteoarthritis patients genu is not only important for doctors and medical personnel, but also for policy makers and the wider community. Accurate information about risk factors and patient needs can encourage increased awareness, early prevention, and access to more adequate medical services. Therefore, this study is not only relevant to medical science, but also has broad social implications. It is hoped that the results of this study can be an initial step in answering the challenges of osteoarthritis increasingly complex genu in the future.

RESEARCH METHODS

This study uses a literature review approach to analyze various relevant findings regarding osteoarthritis genu, especially in the context of increasing prevalence among the elderly population. This approach allows us to explore various previous studies and research that discuss the causative factors, impacts, and management strategies for this disease. By using a literature review, this study aims to present a comprehensive picture of the condition of OA genu, as well as enrich the understanding of the risk factors that contribute to the development of the disease (Sugiyono, 2021).

In this study, the literature used includes scientific articles, research reports, and epidemiological studies that discuss the relationship between risk factors such as obesity, joint injury, genetic factors, and sedentary lifestyle with increased prevalence of OA. In addition, studies on the biological mechanisms underlying OA, such as the role of inflammation and biomechanical changes in the joints, are also discussed to better understand the degenerative process that occurs in patients with en OA genu. This study attempts to integrate various findings from the literature to provide a picture comprehensive information about this condition.

One of the main objectives of this literature review approach is to evaluate the effectiveness of various management strategies that have been implemented in managing OA genu. Various therapies, ranging from non-pharmacological approaches such as physiotherapy and lifestyle modification to pharmacological and surgical interventions, were evaluated to determine the extent to which they can help reduce symptoms and improve the

quality of life of patients. The literature reviewed also includes research on challenges in accessing treatment, especially in rural areas, which are often a barrier to managing this disease (Rachmat et al., 2021) .

Through this approach, it is hoped that this study can provide useful insights for the development of more effective and accessible health policies for all levels of society, especially in areas with limited health facilities. By identifying various factors that contribute to the increasing prevalence and impact of OA genu, and assessing the effectiveness of various treatment approaches, this study aims to provide recommendations that can help in preventing, managing, and alleviating the impact of this disease in the future.

RESULTS AND DISCUSSION

Results

Table 1. Literature Review

No.	Author and Year	Title	Method	Research result
1	O'Leary, Shaun et al., 2020 (O'Leary et al., 2020)	Patient characteristics associated with a poor response to non-surgical multidisciplinary management of knee osteoarthritis	Multisite prospective longitudinal study	Identifying characteristics of patients who have a poor response to non-operative multidisciplinary management.
2	Bedenbaugh, A.V. et al., 2021 (Bedenbaugh et al., 2021)	The patient journey on knees osteoarthritis- variations in diagnosis, patient characteristics, and treatment by doctor specialty	Observational	Variations in diagnosis, patient characteristics, and treatment by physician specialty.
3	Rheumatology, 2019 (Georgiev, 2019)	Clinical characteristics and disability in patients with knee osteoarthritis : Real world experience from Bulgaria	Real world experience study	To examine the clinical characteristics and disability of knee osteoarthritis patients in Bulgaria.
4	Osteoarthritis and Cartilage, 2021 (Ng & Baynton, 2021)	Assessing the characteristics and management of knee osteoarthritis patients with hypertension by clinician specialty	Analysis by clinical specialty	Assessing the relationship of hypertension with the characteristics and management of knee osteoarthritis.
5	Garini, Hapsari Ardha, 2024	Characteristics of elderly osteoarthritis patients at Dr. H.	Descriptive study	Describe the characteristics of elderly patients with

No.	Author and Year	Title	Method	Research result
	(Garini et al., 2024)	Chasan Regional Hospital Boesoirie the North Maluku Province Report		osteoarthritis at Dr. H. Chasan Regional Hospital Boesoirie.
6	Dharmmika, Susanti et al., 2022 (Dharmmika et al., 2022)	Correlation of Knee Osteoarthritis Patients ' Characteristics and the Results of 30-Second Sit- to - Stand Test with Quality of Life	Correlational study	The relationship between characteristics of knee osteoarthritis patients with Sit- to - Stand test results and quality of life.
7	Dharmmika, Susanti et al., 2022 (Dharmmika et al., 2022)	Correlation of Knee Osteoarthritis Patients ' Characteristics and the Results of 30-Second Sit- to - Stand Test with Quality of Life	Correlational study	Confirms the results of previous studies regarding the relationship between patient characteristics and quality of life.
8	St. Nur Ashilah Nafi'ah et al., 2023 (St. Nur Ashilah Nafi'ah et al., 2023)	Osteoarthritis Patients in the Outpatient Unit at Ibnu Sina Hospital Makassar 2018-2021	Retrospective study	Characteristics of osteoarthritis patients in outpatient care at Ibnu Sina Hospital Makassar.
9	Garini, Hapsari Ardha, 2024 (Astri Wahyuni et al., 2024)	Characteristics of Osteoarthritis Genu in the Elderly Who Receive Medical Rehabilitation at Hajjah Andi Depu Regional Hospital	Descriptive study	Characteristics of the elderly with osteoarthritis genu who received medical rehabilitation.
10	Prevention, Osteoarthritis, 2024 (Prevention, 2024)	OA Signs & Symptoms Osteoarthritis Prevention and Management in Primary Care	Clinical guidelines	Osteoarthritis prevention and management strategies in primary health care.

Discussion

Osteoarthritis (OA) is one of the most common forms of arthritis, especially in the elderly population. It is characterized by the breakdown of joint cartilage, changes in bone structure,

and mild inflammation of the tissues surrounding the joint. The main symptoms of OA include pain, stiffness, and limited mobility, which can significantly affect the quality of life of sufferers. OA usually affects weight-bearing joints such as the knees, hips, and spine, although other joints can also be affected. Risk factors for OA include age, gender, obesity, genetics, and injury or stress to the joint. (Ayu, 2018) .

OA management includes a multidisciplinary approach involving lifestyle modification, physical therapy, pharmacotherapy, and even surgical intervention in severe cases. Research on OA continues to grow to better understand patient characteristics, disease progression, and treatment effectiveness. Studies conducted focus on various aspects such as the relationship between OA and comorbidities, patient clinical characteristics, and its impact on quality of life. This information is very important to design better management strategies for OA sufferers.

Figure 1. Characteristics of Osteoarthritis



From the picture above, it gives an overview of the condition of osteoarthritis genu, which is a degenerative disorder of the knee joint that often occurs in the elderly population. Some important parts are shown in the picture:

1. **Damaged Cartilage**
The cartilage in a normal knee joint acts as a cushion to protect the bones from friction. In osteoarthritis, the cartilage degrades, becoming thin, cracked, or even missing in some areas. As a result, the bones rub together and cause pain.
2. **Inflamed Synovial Membrane**
Inflammation of the synovial membrane causes the production of inflammatory mediators, such as cytokines, which worsen cartilage damage. It can also trigger swelling in the joint.
3. **Synovial Fluid Decreased in Quality**
Synovial fluid is responsible for lubricating joints to facilitate movement. In osteoarthritis, the quality of this fluid decreases, increasing friction between bones.
4. **Joint Space Narrowing**

The image shows a narrowing of the space between the thigh bone and the shin bone, which is a typical sign of osteoarthritis. This indicates that the protective cartilage has been damaged or lost.

5. Formation of Bone Spurs (Osteophytes)

At the edges of the joints, bone spurs (osteophytes) are often found as the body's response to cartilage damage. Although osteophytes aim to stabilize the joint, they often cause pain and limited movement (Dharmmika et al., 2022) .

Osteoarthritis genu is a complex condition that involves not only structural damage to the knee joint, but also a chronic inflammatory process that affects the overall function of the joint. Cartilage damage, inflammation of the synovial membrane, and decreased quality of synovial fluid are the main factors that accelerate this degenerative process. As a result, sufferers often experience chronic pain, stiffness, swelling, and significant limitations in movement. This condition not only affects physical health, but also the patient's quality of life, as it can limit daily activities such as walking, climbing stairs, or even standing for long periods. Therefore, a thorough understanding of the mechanisms of damage in osteoarthritis Genu is an important key in the efforts of proper diagnosis and treatment.

The images presented in this explanation help to visually illustrate how the degenerative process occurs in the knee joint. By seeing details such as damaged cartilage, inflammation of the synovial membrane, and narrowing of the joint space, patients can better understand the cause of their symptoms. For health care providers, these visualizations are an effective educational tool to explain the patient's condition and discuss treatment strategies, from prevention to treatment. This information is also important to raise public awareness of the importance of maintaining joint health through a healthy lifestyle, such as maintaining an ideal body weight, doing regular light exercise, and avoiding activities that can accelerate joint damage. With a comprehensive approach, both through education and evidence-based treatment, it is hoped that osteoarthritis sufferers Genu can live a more productive life with minimal disabilities.

Osteoarthritis joint pain is an increasingly complex health challenge as the population ages and modern lifestyles change. It significantly impacts patients' quality of life, causing chronic pain, mobility limitations, and decreased productivity, especially in the elderly. By understanding the various risk factors, such as obesity, age, history of injury, and hormonal changes, early preventive measures such as weight control and moderate exercise can be implemented. This approach not only reduces the risk but also raises public awareness of the importance of maintaining joint health. However, major challenges remain, especially in accessing healthcare services in rural areas, where many patients receive adequate medical care late.

Advances in the treatment of osteoarthritis genu offers new hope, including anti-inflammatory therapies, injection technologies, and regenerative treatments such as stem cells. However, gaps in access and public knowledge about treatment options remain obstacles. Education involving medical personnel, government, and communities is needed to provide accurate information, raise awareness, and motivate patients to undergo consistent

treatment. In addition, local research that explores patient characteristics in Indonesia can help design more inclusive and relevant health policies, especially for vulnerable groups.

Collaboration between various parties, including medical personnel, researchers, policy makers, and the community, is essential to address the burden of osteoarthritis. genu comprehensively. Education, prevention, and evidence-based treatment must go hand in hand to create a more effective health system. The hope is that these efforts will not only improve the quality of life of current patients, but also protect future generations from the same risks. With a holistic approach and continued innovation, we can reduce the impact of disability due to osteoarthritis genu while creating a healthier future for society.

CONCLUSION

Osteoarthritis genu is one of the degenerative diseases that has a major impact on the quality of life, especially in the elderly population. This disease is characterized by progressive damage to the joint cartilage, which is caused by various risk factors such as obesity, aging, history of injury, and hormonal changes. In addition to triggering chronic pain and limited mobility, osteoarthritis genu also often reduces productivity and limits the patient's daily activities. In this context, it is important to understand the mechanisms of the disease, including cartilage degradation, synovial membrane inflammation, and biomechanical changes, in order to develop effective prevention and treatment strategies. Although modern treatments such as physical therapy, anti-inflammatories, and regenerative technologies have made great progress, major challenges remain, especially in terms of disparities in access to healthcare services in different regions. Further research into the characteristics of osteoarthritis patients genu in Indonesia is very important to answer this need. By understanding patient profiles, disease patterns, and local factors, more inclusive health policies can be designed to reach vulnerable groups in society. In addition, public education about prevention and early treatment must be improved through collaboration between medical personnel, government, and communities. With a data-based approach and technological innovation, it is hoped that the burden of disability due to osteoarthritis genu can be reduced, so that patients can live more productive and meaningful lives. Through strong collaboration between various parties, this effort not only provides medical solutions, but also broader social impacts, creating a more resilient health system for the future.

REFERENCES

- Anisia, D., & Umam, F. N. (2020). Pengaruh Nyeri Sendi Terhadap Kualitas Tidur dan Kualitas Hidup Pada Lansia Penderita Osteoarthritis. *Jurnal Keperawatan*, 1, 7. <https://ejournal.lpppmdianhusada.ac.id/index.php/jk/article/download/74/68>
- Astri Wahyuni, Imran Safei, Prema Hapsari Hidayati, Sultan Buraena, & Shulhana Mokhtar. (2024). Karakteristik Osteoarthritis Genu pada Lansia yang Mendapatkan Rehabilitasi Medik di RSUD Hajjah Andi Depu. *Fakumi Medical Journal: Jurnal Mahasiswa Kedokteran*, 4(1), 62–72. <https://doi.org/10.33096/fmj.v4i1.437>
- Ayu, Y. A. (2018). Palliative Therapy of Esophageal Stent Installation with Shim Modified Fixation Techniques on An Esophageal Adenocarcinoma Patients. *Biomolecular and*

- Health Science Journal*, 1(1), 52. <https://doi.org/10.20473/bhsj.v1i1.8209>
- Bedenbaugh, A. V., Oderda, G., Lee, V. C., Moller, J., Brixner, D., Kennedy, S., McAlindon, T., & Tambiah, J. R. (2021). The patient journey in knee osteoarthritis-variations in diagnosis, patient characteristics, and treatment by physician specialty. *Osteoarthritis and Cartilage*, 29(2021), S281–S282. <https://doi.org/10.1016/j.joca.2021.02.370>
- Dharmmika, S., Waspodo, S., Rachmi, A., Gunarto, S., Az Zakiyah, F., Qothrunnada, S. D., Robbani, A., & Alfina, N. Z. (2022). Correlation of Knee Osteoarthritis Patients' Characteristics and the Results of 30-Second Sit-to-Stand Test with Quality of Life. *Global Medical & Health Communication (GMHC)*, 10(2), 128–135. <https://doi.org/10.29313/gmhc.v10i2.9379>
- Garini, H. A., Program, S., Garini, H. A., & Program, M. S. (2024). *CHARACTERISTICS OF ELDERLY OSTEOARTHRITIS PATIENTS AT RSUD DR. H. CHASAN BOESOIRIE the North Maluku Province Report on*. 8(2), 192–199.
- Georgiev, T. (2019). Clinical characteristics and disability in patients with knee osteoarthritis: Real world experience from Bulgaria. *Reumatologia*, 57(2), 78–84. <https://doi.org/10.5114/reum.2019.84812>
- Ng, C., & Baynton, E. (2021). Assessing the characteristics and management of knee osteoarthritis patients with hypertension by clinician specialty. *Osteoarthritis and Cartilage*, 29(2021), S102. <https://doi.org/10.1016/j.joca.2021.02.141>
- Nuralamsyah, R., Kedokteran, P. S., Kedokteran, F., Kesehatan, D. A. N., & Jakarta, U. M. (2023). *PASIEEN OSTEOARTHRITIS GENU DI RUMAH SAKIT UMUM DAERAH KABUPATEN SUBANG TAHUN 2022 PASIEEN OSTEOARTHRITIS GENU DI RUMAH SAKIT UMUM DAERAH KABUPATEN SUBANG TAHUN 2022*.
- O'Leary, S., Raymer, M., Window, P., Swete Kelly, P., Elwell, B., McLoughlin, I., O'Sullivan, W., Phillips, B., Wake, A., Ralph, A., O'Gorman, H., Jang, E., Groves, K., Hislop, A., Lee, D., Garsden, L., Conroy, M., Wickins, D., Vicenzino, B., ... McPhail, S. (2020). Patient characteristics associated with a poor response to non-surgical multidisciplinary management of knee osteoarthritis: A multisite prospective longitudinal study in an advanced practice physiotherapist-led tertiary service. *BMJ Open*, 10(10), 1–10. <https://doi.org/10.1136/bmjopen-2020-037070>
- Prevention, O. (2024). OA Signs & Symptoms Osteoarthritis Prevention and Management in Primary Care. *The Osteoarthritis Action Alliance*. <https://oaaction.unc.edu/oa-module/oa-signs-and-symptoms/>
- Rachmat, N., Minulyo, A. J., & Zubaidi, A. (2021). An overview of the quality of life of Knee osteoarthritis patients at the Surakarta Orthopedic Hospital. *Jurnal Keterampilan Fisik*, 6(1), 38–48. <https://doi.org/10.37341/jkf.v0i0.271>
- St. Nur Ashilah Nafi'ah, Prema Hapsari Hidayati, Andi Kartini Eka Yanti, Sam, A. D. P., & Abdullah, R. P. I. (2023). Karakteristik Pasien Osteoarthritis pada Unit Rawat Jalan di Rumah Sakit Ibnu Sina Makassar Tahun 2018-2021. *Fakumi Medical Journal: Jurnal Mahasiswa Kedokteran*, 3(3), 178–189. <https://doi.org/10.33096/fmj.v3i3.219>
- Sugiyono. (2021). *Metode penelitian kuantitatif, kualitatif, dan R&D* (cetakan ke). Alfabeta.