



Education on Recognizing the Symptoms and Treatment of Knee Osteoarthritis at UNS Hospital

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Abstract

Osteoarthritis (OA) is a chronic degenerative disease characterized by wear on the cartilage structure. In UNS hospital, knee OA is ranked as the 2nd largest case, after low back pain. Misleading beliefs that OA is an incurable, progressive disease that is associated with specific causal factors can lead patients to cut down on physical activities and adapt to a restricted lifestyle with less spontaneity, which in many cases results in a great feeling of loss and isolation associated with a reduction in social relationship. There is an urgent need to mitigate this negative impact, using proper patient-education strategies to better manage the disease and improve the concordance between patients' expectations and treatment outcomes. Overall, patient knowledge about the disease is still inadequate. The aim of this study is to increase the knowledge of patients and patients' caregivers at UNS Hospital about symptoms and treatment of knee OA. The steps of this study consisted of preparation, implementation, and evaluation. Before giving education, the participants did pre-test, and after education, the participants did post-test, to know the level of their knowledge about the education. There were 22 female (67%) and 11 male (33%) participants. The mean of the level of participants' knowledge was about 5,42 before giving education, and 7,31 after giving education, so there was an enhancement of about 1,89. This program ran well. There was an enhanced level of patients' and caregiver's knowledge before and after giving education.

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INTRODUCTION

Osteoarthritis (OA) is a chronic degenerative joint disease characterized by cartilage damage (Kolasinski et al., 2020; Sengul et al., 2022). OA affects 302 million people worldwide and is a leading cause of disability among older adults (Kolasinski et al., 2020; Wang et al., 2022). According to Dantas et al. (2021), OA ranks as the 10th largest contributor to global disability. OA most commonly affects the hip, knee, and hand joints (Kolasinski et al., 2020).

The prevalence and incidence of knee OA have been studied more extensively than other joints. The prevalence of knee OA among individuals over 45 years of age in the United States is 7% (Framingham study). In the Framingham Osteoarthritis Study, from 1983 to 2005, age- and BMI-adjusted prevalence in individuals over 70 years old with knee pain showed a twofold increase in women and a threefold increase in men (Allen et al., 2022). Furthermore, Dantas et al. (2021) reported that the prevalence of OA has more than doubled in the past decade. According to Coaccioli et al. (2022), the global incidence of OA is 20%. In Indonesia, the prevalence of radiologically apparent knee OA is 15.5% in men and 12.7% in women (Indonesian Rheumatology Association, 2014). At Sebelas Maret University Hospital (RS UNS), data from 2022 indicated that knee OA accounted for 1,854 (16.29%) of the total 11,382 patient visits for therapy. Knee OA ranks as the second most common condition at RS UNS, following lower back pain, which holds the first position.

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Risk factors for knee OA include age, gender, genetics, joint trauma, and obesity. The increasing incidence of OA with age is associated with biological changes in joint structures. In a study of individuals over 65 years old, 68% were female and 58% were male. Studies on monozygotic twins aged 48 to 70 years, who share identical genes, indicate that genetic factors account for 65% of OA development. Regarding joint trauma as a risk factor, cartilage, which normally tolerates the load from daily physical activities, loses its flexibility in the event of joint trauma. Obesity contributes to knee OA as the excessive load damages the knee joints (Askavand et al., 2013; Coaccioli, 2022).

Symptoms of knee OA include knee pain, joint stiffness, muscle weakness, and joint enlargement. Chronic pain is a common symptom, and during the progression of knee arthritis, the concentration of excitatory amino acids like glutamate, released by sensory nerves in the spinal cord, increases (Askavand et al., 2013). According to the Indonesian Rheumatology Association (2014), the diagnosis of knee OA can be classified as shown in Figure 1.

Klasifikasi diagnosis OA lutut ICD-10 kode: M17
<ul style="list-style-type: none"> Berdasarkan kriteria klinis: <ul style="list-style-type: none"> Nyeri sendi lutut dan paling sedikit 3 dari 6 kriteria di bawah ini: <ol style="list-style-type: none"> 1. krepitus saat gerakan aktif 2. kaku sendi <30 menit 3. umur > 50 tahun 4. pembesaran tulang sendi lutut 5. nyeri tekan tepi tulang 6. tidak teraba hangat pada sinovium sendi lutut. <p>Sensitivitas 95% dan spesifisitas 69%.</p>
<ul style="list-style-type: none"> Berdasarkan kriteria klinis dan radiologis: <ul style="list-style-type: none"> Nyeri sendi lutut dan adanya pteofit dan paling sedikit 1 dari 3 kriteria di bawah ini: <ol style="list-style-type: none"> 1. kaku sendi <30 menit 2. umur > 50 tahun 3. krepitus pada gerakan sendi aktif <p>Sensitivitas 91% dan spesifisitas 86%.</p>
<ul style="list-style-type: none"> Berdasarkan kriteria klinis dan laboratoris: <ul style="list-style-type: none"> Nyeri sendi lutut dan paling sedikit 5 dari 9 kriteria berikut ini: <ol style="list-style-type: none"> 1. Usia >50 tahun 2. kaku sendi <30 menit 3. Krepitus pada gerakan aktif 4. Nyeri tekan tepi tulang 5. Pembesaran tulang 6. Tidak teraba hangat pada sinovium sendi terkena 7. LED>40 mm/jam 8. RF<1/40 9. Analisis cairan sinovium sesuai OA <p>Sensitivitas 92% dan spesifisitas 75%.</p>

Catatan:
LED=leju endap darah; RF= Rheumatoid factor

Figure 1. Diagnosis of knee OA (Perhimpunan Rheumatologi Indonesia, 2014)

The management of OA includes non-pharmacological, pharmacological, and surgical approaches. Non-pharmacological therapy consists of patient education, exercise, weight loss, orthoses (assistive devices), and medical rehabilitation therapies such as heat therapy, cold therapy, electrical therapy, hydrotherapy, and laser therapy. Pharmacological treatments involve the use of pain relievers (oral, topical, or injectable) and supplements like glucosamine and chondroitin sulfate (Dantas et al., 2021).

OA is no longer regarded solely as a degenerative disease, but age remains one of its risk factors. Among individuals over the age of 65, only 50% present radiological evidence consistent with OA. Although only 10% of men and 18% of women show clinical symptoms of OA, and around 10% experience disability due to OA, it is understandable that the likelihood of developing OA increases with age. As life expectancy rises, WHO predicts that by 2025, the elderly population in Indonesia will have increased by 414% compared to 1990 (Indonesian Rheumatology Association, 2014).

Education plays a crucial role in managing knee OA. The negative impact of knee OA on patients is significant. Misunderstandings about OA being incurable, and its progressive nature, often lead patients to cease physical activities and adopt a limited lifestyle. In some cases, this results in a profound sense of loss and isolation, leading to diminished social relationships. To mitigate these negative effects, appropriate patient education strategies are urgently needed to better manage the disease and align patient expectations with treatment outcomes. Overall, patient knowledge about this disease remains insufficient (Dantas et al., 2021).

Several community service activities related to knee OA, such as Hermawan et al. (2019), who conducted health education at the Kemiling Health Center in Bandar Lampung, found that health

education effectively increased participants' knowledge about OA. The goal of this community service was to provide health education to enhance awareness, enabling patients to manage OA independently and avoid complications. Similarly, in the community service by Ulfa et al. (2021) on educating osteoarthritis patients in Trimurjo District, Central Lampung, participants' knowledge about osteoarthritis improved. In the community service by Sari et al. (2024), educating the elderly about knee osteoarthritis at the Elderly Posyandu in Timuran Setabelan, Surakarta, led to an increase in osteoarthritis-related knowledge among the elderly at the posyandu.

However, there is no data on education regarding knee OA symptoms and management at RS UNS, despite knee OA being the second most common condition at RS UNS, following lower back pain, which ranks first. Based on this background, the author is interested in conducting educational activities for patients and their caregivers at RS UNS to improve knowledge about the symptoms and management of knee OA.

METHOD

The community service activity, in the form of a counseling session, was conducted on Wednesday, June 14, 2023, in the waiting room of the Central Polyclinic, 2nd floor, RS UNS. The counseling session was attended by 33 participants, consisting of patients and their caregivers who were receiving treatment at RS UNS.

The community service steps included preparation, implementation, and evaluation (Figure 2). The method used in this activity was counseling, aimed at improving the understanding of patients and caregivers at RS UNS regarding the symptoms and management of knee osteoarthritis. Before the material was presented, participants were given a pre-test, and after the material was delivered, a post-test was administered to assess the participants' understanding of the material presented. The pre-test and post-test consisted of the same 10 multiple-choice questions covering the material discussed. Details related to the pre-test and post-test questions are further elaborated in Figure 3.

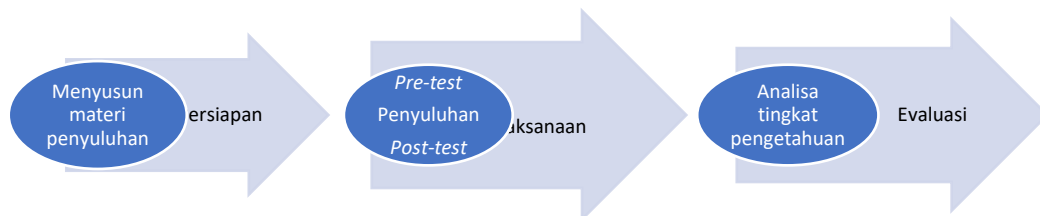


Figure 2. Steps for implementing community service

Preparation:

This stage involves planning and preparing the materials that will be presented during the counseling session. The community service team prepares all the necessary items, including the pre-test and post-test questions, as well as the presentation materials. Preparation also includes coordinating with RS UNS to arrange the location and time for the event, ensuring that all targeted participants can attend.

Implementation:

In this stage, the counseling session is conducted as scheduled, on Wednesday, June 14, 2023. The session took place in the waiting room of the Central Polyclinic, 2nd floor, RS UNS, and was attended by 33 participants, including patients and their caregivers. During the session, participants were given a pre-test to assess their initial knowledge about the symptoms and management of knee osteoarthritis. Following this, the counseling material was presented interactively, aiming to enhance the participants' understanding of the discussed topic. After the material was delivered, participants were asked to complete the same post-test to evaluate the improvement in their understanding.

Evaluation:

The final step involves evaluating the outcomes of the counseling session. This evaluation is conducted by comparing the pre-test and post-test results to determine the extent of the participants' understanding after the session. Additionally, the community service team reflects on the overall activity to identify what went well and areas that need improvement for future similar activities. The

results of this evaluation are crucial in ensuring that the objectives of the community service are met and that the participants benefit optimally.

T R A N S L A T I O N	<ol style="list-style-type: none"> 1. Osteoarthritis merupakan penyakit yang terjadi pada..... <ol style="list-style-type: none"> A. Otot B. Tulang C. Tulang rawan 2. Bagian tubuh yang terkena Osteoarthritis adalah..... <ol style="list-style-type: none"> A. Otot B. Sendi C. Tulang 3. Dibawah ini yang termasuk gejala Osteoarthritis lutut, kecuali : <ol style="list-style-type: none"> A. Rasa kesemutan B. Nyeri dan kaku sendi C. Terdengar suara gemetak saat berjalan 4. Di bawah ini faktor resiko Osteoarthritis lutut adalah..... <ol style="list-style-type: none"> A. Usia muda, kegemukan, riwayat jatuh B. Genetik, penuaan, riwayat jatuh C. Penuaan, kegemukan, tempat tinggal 5. Bagaimana tindakan pencegahan Osteoarthritis lutut? <ol style="list-style-type: none"> A. Penurunan berat badan B. Membatasi konsumsi garam C. Konsumsi suplemen kalsium 6. Aktivitas yang perlu dihindari pada pasien Osteoarthritis lutut, kecuali : <ol style="list-style-type: none"> A. Berjalan B. Naik tangga C. Menggunakan sepatu hak tinggi 7. Yang dilakukan saat mengalami gejala Osteoarthritis lutut, kecuali : <ol style="list-style-type: none"> A. Menerapkan gaya hidup sehat B. Konsumsi makanan tinggi gula C. Konsultasi ke dokter saat merasakan gejala 8. Olahraga yang tepat bagi pasien Osteoarthritis lutut adalah..... <ol style="list-style-type: none"> A. Renang B. Marathon C. Lompat tali 9. Terapi yang dapat diberikan pada pasien Osteoarthritis lutut adalah..... <ol style="list-style-type: none"> A. Terapi panas, terapi listrik, treadmill B. Latihan keseimbangan, sepeda statik, lari C. Terapi air, terapi panas, latihan penguatan 10. Edukasi pasien Osteoarthritis lutut di rumah adalah..... <ol style="list-style-type: none"> A. Toilet jongkok B. Kompres air hangat C. Latihan naik turun tangga 	<ol style="list-style-type: none"> 1. Osteoarthritis is a disease that occurs in..... <ol style="list-style-type: none"> A. Muscles B. Bones C. Cartilage 2. The part of the body affected by Osteoarthritis is..... <ol style="list-style-type: none"> A. Muscles B. Joints C. Bones 3. The following are symptoms of knee Osteoarthritis, except: <ol style="list-style-type: none"> A. Tingling sensation B. Joint pain and stiffness C. Cracking sound when walking 4. The following are risk factors for knee Osteoarthritis..... <ol style="list-style-type: none"> A. Young age, obesity, history of falls B. Genetics, aging, history of falls C. Aging, obesity, place of residence 5. How can knee Osteoarthritis be prevented? <ol style="list-style-type: none"> A. Weight loss B. Limiting salt intake C. Taking calcium supplements 6. Activities that should be avoided by knee Osteoarthritis patients, except: <ol style="list-style-type: none"> A. Walking B. Climbing stairs C. Wearing high heels 7. What should be done when experiencing symptoms of knee Osteoarthritis, except: <ol style="list-style-type: none"> A. Adopting a healthy lifestyle B. Consuming high-sugar foods C. Consulting a doctor when symptoms occur 8. The appropriate exercise for knee Osteoarthritis patients is..... <ol style="list-style-type: none"> A. Swimming B. Marathon running C. Jump rope 9. The therapy that can be given to knee Osteoarthritis patients is..... <ol style="list-style-type: none"> A. Heat therapy, electrical therapy, treadmill B. Balance training, static cycling, running C. Hydrotherapy, heat therapy, strengthening exercises 10. Home education for knee Osteoarthritis patients includes..... <ol style="list-style-type: none"> A. Squatting toilet B. Warm compress C. Stair climbing exercises
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Figure 3. Pre-test and post-test questions were given to counseling participants

RESULTS AND DISCUSSION

The community service activity, in the form of a counseling session, was conducted on Wednesday, June 14, 2023, in the waiting room of the Central Polyclinic, 2nd floor, RS UNS, with the topic "Recognizing Symptoms and Management of Knee OA" (Figure 4). The session was attended by 33 participants, consisting of patients and their caregivers who were receiving treatment at RS UNS.



4.1



4.2

Figure 4. Implementation of the community service activity. Counseling session on recognizing symptoms and management of knee OA at the RS UNS Polyclinic.

After the community service activity, the participants' data were analyzed, and it was found that, based on gender, there were 22 female participants (67%) and 11 male participants (33%) (Figure 5).

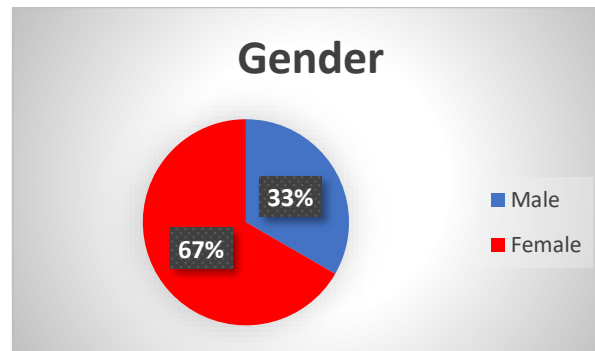


Figure 5. Counseling participants by gender

Table 1. Number of participants by age

Age (years)	Participants	
	Number	Percentage (%)
21-30	8	24,2
31-40	11	33,3
41-50	5	15,2
51-60	5	15,2
61-70	2	6,1
71-80	1	3,0
81-90	1	3,0
Total	33	100

Table 1 shows the participants categorized by age: 8 participants (24.2%) were aged 21-30 years, 11 participants (33.3%) were aged 31-40 years, 5 participants (15.2%) were aged 41-50 years, 5 participants (15.2%) were aged 51-60 years, 2 participants (6.1%) were aged 61-70 years, 1 participant (3%) was aged 71-80 years, and 1 participant (3%) was aged 81-90 years.

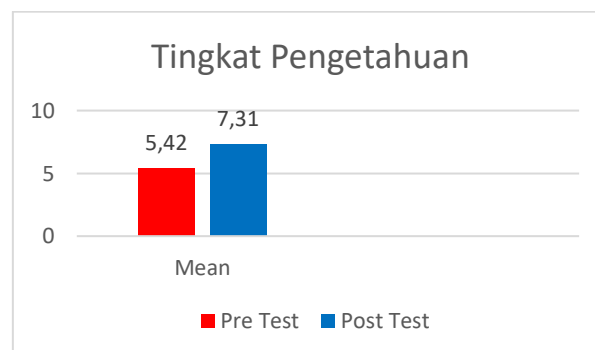


Figure 6. Mean (average value) level of knowledge of counseling participants.

In Figure 6, the mean knowledge level of the participants before the presentation was 5.42, and after the presentation, it was 7.31, indicating an average increase in knowledge of 1.89 points. The data obtained from the pre-test and post-test results of patients and their caregivers at the RS UNS Polyclinic show an increase in knowledge about knee OA by 1.89 points. This suggests that education on the symptoms and management of knee OA can help patients and their caregivers better recognize knee OA. This is consistent with the findings from the community service by Hermawan et al. (2019),

which found that health education effectively increased participants' knowledge, Ulfa et al. (2021), which noted an increase in participants' knowledge about osteoarthritis, and Sari et al. (2024), which observed an increase in osteoarthritis-related knowledge among the elderly at the Posyandu Setabelan.

As people age, the likelihood of developing OA increases. With increasing life expectancy, WHO predicts that by 2025, the elderly population in Indonesia will have increased by 414% compared to 1990 (Indonesian Rheumatology Association, 2014). Education plays an important role in managing knee OA. Misconceptions about OA being incurable, coupled with its progressive nature, often lead patients to cease physical activities and adopt a limited lifestyle, which in some cases results in a profound sense of loss and isolation, thereby diminishing social relationships. To mitigate these negative effects, appropriate patient education strategies are urgently needed to help manage the disease more effectively and align patient expectations with treatment outcomes (Dantas et al., 2021). The community service activity on recognizing symptoms and management of knee OA aims to enhance patients' and caregivers' knowledge of knee OA as an educational strategy to help them manage the disease better and align their expectations with treatment outcomes.

The community service activity was conducted at the RS UNS Polyclinic, which only reached patients and their caregivers who were receiving treatment at RS UNS. Therefore, the knee OA material was also uploaded to RS UNS's Instagram page to reach a broader audience (Figure 7).



Figure 7. Education on recognizing the symptoms and treatment of knee OA on the UNS Hospital Instagram

The limitation of this community service activity is that, since it was conducted at the RS UNS Polyclinic, it only reached patients and their caregivers who were receiving treatment at RS UNS. Although the knee OA material was uploaded to RS UNS's Instagram page to reach a broader audience, it has not yet reached the general public. Hence, further education efforts are needed to inform the general public about the symptoms and management of knee OA.

CONCLUSION

From this community service activity, it can be concluded that the counseling session on the symptoms and management of knee OA was successfully conducted. There was an increase in knowledge about the symptoms and management of knee OA before and after the counseling session. The average knowledge level of the participants before the presentation was 5.42, and after the presentation, it was 7.31, indicating an average increase in knowledge of 1.89 points. With the increase in knowledge regarding the symptoms and management of knee OA, it is hoped that patients and their caregivers will have a better understanding of knee OA. Specifically, for knee OA patients, this increased knowledge is expected to help them manage their condition more effectively and align their expectations with treatment outcomes. To further broaden knowledge about the symptoms and management of knee OA, it is recommended to conduct counseling sessions for the general public. Education can also be provided through other media such as radio or social media platforms.

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