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Increasing the capacity of health cadres to prevent and self-management of Osteoarthritis

Arifin Triyanto[1], Heny Suseani Pangastuti[1], Diana Nurlita[2], Anisah Umami[3]

[1]Department of Medical Surgical Nursing, Faculty of Medicine, Public Health, and Nursing, Universitas Gadjah Mada,
[2]Academic Hospital of Gadjah Mada University
Jl. Farmako Sekip Utara, Sleman, Yogyakarta, 55281, Indonesia
[3]Godean II Community Health Center

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ABSTRACT

Osteoarthritis (OA) is a clinical syndrome characterized by joint pain with varying degrees of functional limitations that impact quality of life. Data in Indonesia shows that the national prevalence of osteoarthritis is 7.3%. Several factors in the high prevalence of OA that can be modified require lifestyle modification to prevent OA. Self-management in OA can help maintain the individual's functional capacity, improve self-image and improve quality of life of the patients**.** This community service is health education for health cadres and the general public over the age of 35 years in one of the areas in Godean, Sleman, Yogyakarta. The team measured the level of participants' knowledge about osteoarthritis and self-screening for osteoarthritis in community service. Results obtained the majority of respondents were in the mild osteoarthritis category (36.5%). The results of the respondents' knowledge scores were the difference in average knowledge before and after providing education, there was an increase in knowledge scores of 17.87**.** Providing health education can increasing public knowledge about osteoarthritis before and after health education about prevention and self-management of osteoarthritis.

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1. INTRODUCTION

Osteoarthritis is a clinical syndrome characterized by joint pain with varying degrees of functional limitations that impact quality of life. Osteoarthritis is the most common type of arthritis and a cause of disability. Osteoarthritis is a degenerative disease and the disease progresses slowly but surely. About two-thirds of people over 65 years old have experience osteoarthritis with a prevalence of 60.5% in men and 70.5% in women (Chen et al., 2020) .

Data in Indonesia shows that the prevalence of OA is 65% in the Indonesian population aged over 61 years. Basic health research or RISKESDAS in 2018 show that national prevalence of osteoarthritis is 7.3%. The incidence of osteoarthritis is dominated by population in the age group 45 years and over. This disease does not recognize differences based on education, work or place of residence, so that all age groups over 45 years have the potential to the osteoarthritis (Indonesia Ministry of Health, 2018).

✉ Corresponding Author: **Arifin Triyanto**: Tel. +62 274 631204 | E-mail: arifintriyanto@mail.ugm.ac.id

Osteoarthritis is still a major health problem, WHO states that OA is one of the causes of functional disturbance, lack of movement, decreased ability to work, causes severe pain, disability, and disruption of daily activities. As a result, 80% of the osteoarthritis patient as have adverse effects from the emergence of OA (Clynes et al., 2019) .

OA is a multifactorial disease caused by various risk factors such as age, obesity, joints trauma, genetic abnormalities of joint cartilage and excessive pressure on the joints. The main symptoms most commonly felt by OA are pain and stiffness in the joints (Palazzo et al., 2016). Pain can occur when activity is too excessive. Join stiffness due to lack of movement or activity in the joints, generally occurs in the morning when the patients wake up or after resting during the day. The joints can also have redness, warmth accompanied by tenderness and then there is a feeling of stiffness, immobility and deformity. If the formation of osteophytes occurs in the joints of the hands or leg joints, it can cause swelling or joint deformity which can limit the patient's range of motion, can be disturbing and affect physical well-being. Additionally, OA can have a profound impact on every aspect of a person's life and can lead to disability if not treated properly (Palo et al., 2015).

Several factors in the occurrence of OA that can be modified require lifestyle modification to prevent the occurrence of OA. Lifestyle modification through education can reduce the risk of OA and improve an individual's physical function (Becker et al., 2015). In the case of individuals who have experienced OA, self-management is an important aspect in carrying out daily activities. Self-management in OA patients can help maintain the individual's functional capacity, improve self-image and improve the quality of life (Uritani et al., 2021) .

The Special Region of Yogyakarta, which is a province with high life expectancy, certainly has a fairly large population over 45 years old. Badan Pusat Statistik data shows that Sleman Regency has high population in elderly. One of the sub-districts, Godean, in 2021 have a population of 24,967 people over 45 years of age (Badan Pusat Statistik, 2021). Based on the results of previous study, joint problems are one of the health problem that arise in society, especially in older people. Even though education has been provided, limited time and small targets are weaknesses so that follow-up is needed to carry out activities with broader and more comprehensive targets.

The health education for health cadres and residents who have elderly family members. Health cadres become agents of change and vanguard in the region to prevent osteoarthritis and can help people in the region who have symptom of osteoarthritis. Early prevention and self-management of osteoarthritis in cadres and residents can reduce the incidence of osteoarthritis and make people more independent. The aim of this program is to provide education to health cadres and the public about prevention and self-management of osteoarthritis to maintain functional status, daily activities and quality of life.

2. METHODS

Preparation Phase

Implementation of community service activities starts from the preparation phase. This phase includes the coordination of the community service team consisting of academic teams, hospitals, health centers and students. Each member of team prepares the material that will be presented from each activity. The team prepared and copied questionnaires that would be used in community service activities.

Coordination Phase

Before carrying out educational activities, the team coordinated with the hamlet head and head of health cadres. In this phase, team and health cadres discuss about the time of the health education, equipment needed, and determining participants who will be involved in educational activities.

Implementation Stage

Activities are carried out targeting health cadres and the general public over 35 years of age. Activities were carried out centrally with participants gathering at the village head's house. At the beginning of the session, participants are given a participant identity sheet and can take a pretest to determine the participant's knowledge about osteoarthritis before taking part in the health education. Activities are carried out through the delivery of material using lecture, discussion and watch a video. The material consist of an introduction to osteoarthritis, physical activity for osteoarthritis, the role of nutrition in prevention of osteoarthritis and non-pharmacological pain management for osteoarthritis. At the middle of the session, participants were guided to carry out self-screening for osteoarthritis using the Lequesne index. At the end of the event, participants were asked to return to work on post-test questions.

Evaluation Design

In this community service activity, the team measured level of knowledge of the participants about osteoarthritis and self-screening for osteoarthritis. Measuring knowledge about osteoarthritis was carried out with a questionnaire containing 15 questions from the resource material provided, the grid of questions was include on Table 1.

Table 1. Knowledge questionnaire grid

Topic	Number of questions
Getting to know osteoarthritis	3
Physical activity	5
The role of nutrition	2
Pain management	5
Total	**15**

Osteoarthritis screening is carried out independently using the Lequesne index. The lequesne index grid is in Table 2.

Table 2. Lequesne index grid

Items	Number of questions
Complaints of Pain or Discomfort	5
Maximum distance traveled in walking	2
Ability to do daily physical activity	4

3. RESULTS AND DISCUSSION

Results

In this activity, the team collected data on respondents' characteristics consisting of age, gender, Body Mass Index (BMI) and previous access to information about osteoarthritis. The results are in Table 3.

Table 3. Characteristics of respondents (n=22)

Characteristics	n	%
Gender		
Man	1	4.5
Woman	21	95.5
Age		
< 45 years	1	4.5
45 – 59 years old	17	77.3
60 – 74 years old	4	18.2
BMI		
< 18.5	2	9.1
18.5 -22.9	11	50
23 – 24.9	6	27.3
25 – 29.9	2	9.1
>30	1	4.5
Access information about previous osteoarthritis		
Yes	18	81.8
No	4	18.2
Source of osteoarthritis information		
Internet	3	13.6
TV	10	45.4
Book	1	4.5
Chat Group	0	0
Other	8	36.5

Based on Table 3, it is known that the majority of respondents were female (95.5%), with ages ranging from 45-59 years (77.3%). The majority of BMIs are in the range 18.5-22.9 (50%). The majority of respondents had received information about osteoarthritis before (81.8%), mostly from television (45.4%).

During the activity, respondents also carried out self-screening for osteoarthritis using the Lequesne index. The results of the screening carried out can be seen in Table 4.

Table 4. Results of osteoarthritis screening of respondents (n=22)

Osteoarthritis Categories	n	%
Normal	3	13.6
Mild Osteoarthritis	8	36.5
Moderate Osteoarthritis	5	22.6
Severe Osteoarthritis	6	27.3
Very Severe Osteoarthritis	0	0
Very Severe Osteoarthritis	0	0

Table 4 shows that based mostly on the results of self-screening for osteoarthritis, the majority of respondents were in the mild osteoarthritis category (36.5%). In this activity, respondents' knowledge was measured before and after the health education was carried out. The results of the respondents' knowledge scores can be seen in table 5. Based on this table, it is known that the difference in the average knowledge before and after providing education is that there was an increase in the knowledge score of 17.87 (in Table 5).

Table 5. Results of respondents' knowledge about osseoarthritis

Measurement	Mean ± SD	Delta Mean
Pre-test	40±18.85	17.87 ± 15.31
Post-test	57.87 ± 17.86	

Discussion

Community service participants are predominantly female. This is in line with the target that the global prevalence of OA is 16% in individuals aged 15 years and over and 22.9% in individuals aged 40 and over. In 2020, approximately 654 million individuals aged 40 and over with OA worldwide. The comparison of the prevalence and incidence of OA in men is smaller, only 1.39, while in women it is 1.69 (Cui et al., 2020) . In cases of OA, women also access more health services, have a higher prevalence of OA, experience more pain and inflammation, decreased cartilage volume and difficulty with physical activity (Tschon et al., 2021) .

Based on BMI data, the majority are at a normal BMI. However, there were several respondents who had an excess BMI. The BMI aspect has a significant relationship to OA patients, especially in female (Alisiya et al., 2021) . As one of the risk factors for osteoarthritis, obesity has a significant influence on the emergence of this disease and is associated with clinical consequences for the patients. Increasing levels of obesity will increase the risk of developing osteoarthritis by 35% (Raud et al., 2020) .

Service activities are carried out through health education through various methods such as lectures, viewing educational videos and osteoarthritis screening practice. Education aims to increase knowledge, health behavior and health outcomes. The media that can be used vary, such as verbal communication, video or booklets (McDonald et al., 2014) .

From the results of the community service, it was found that the results of independent screening using the Lequesne index showed that participants varied from mild to severe osteoarthritis, but the majority had mild osteoarthritis. This is in line with previous research which shows that the majority of osteoarthritis patients suffer from mild to moderate categories. The use of the Lequesne index is known to have a significant relationship with clinical radiological features in osteoarthritis, so the Lequesne index can be a good screening for osteoarthritis (Buana & Kusmala, 2021) .

In this activity, the average knowledge score of participants was 40. This result is in line with the results of research in the general public which shows that public knowledge about osteoarthritis is considered less than satisfactory. Approximately 59.1% have poor knowledge (Alahmed et al., 2023) . Respondents' knowledge about osteoarthritis varied greatly between individuals. Patients with osteoarthritis reveal that they need a lot of information about the disease, self-management skills and healthy lifestyle guidance (Kamsan et al., 2020) . In another research, the level of awareness of respondents, especially women, with obesity is still quite low. There are misconceptions about osteoarthritis among the majority of respondents so that it requires intervention from health professionals (Almoftery et al., 2023) .

The results of the activity showed that there was an increase in the participants' knowledge score of 17.87 ± 15.31. These results are in line with the results of previous research that there was an increase in knowledge in the community after health education about osteoarthritis was carried out (Ismunandar et al., 2020) . Education of osteoarthritis can help the patients to reduce pain, increase functional capacity, self-management and improve quality of life. Providing information about disease and management can help people change their lifestyle towards positive outcomes (Kamsan et al., 2020). Lack of public knowledge regarding osteoarthritis requires education, especially to help sufferers reduce risk factors and increase the ability to detect osteoarthritis early (Alahmed et al., 2023) . Educational programs for osteoarthritis sufferers can increase understanding of disease diagnosis and management of osteoarthritis (Ettlin et al., 2021).

4. CONCLUSION AND RECOMMENDATIONS

The majority of community service participants have mild osteoarthritis with a percentage of 36.3%. Community service activities are carried out by providing health education about osteoarthritis through specific topics such as the introduction of osteoarthritis, physical activity in osteoarthritis, nutrition in preventing osteoarthritis and non-pharmacological pain management in osteoarthritis. There was an increase in knowledge scores among participants before and after the activity with an increase of 17.87.

Health education activities about osteoarthritis have had a positive impact participants, in the future similar activities can be carried out again with more detailed sub-topics. The target of counseling can be expanded starting from a younger age range so that it can prioritize preventive aspects of osteoarthritis, and it is also necessary for male participants.

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