



Correlation of Knowledge Level with Pain Management in Elderly with Osteoarthritis

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ABSTRACT

Pain is the most common symptom felt by the elderly with osteoarthritis. Poor management of pain would impact their health status and quality of life in the end. Therefore, an adequate level of knowledge required to manage this pain properly. This study aimed to examine the correlation of knowledge level and pain management in the elderly population with osteoarthritis in WanaSraya Nursing Home. This study applied an analytic observational design with a cross-sectional approach to examine the correlation between the knowledge level and pain management in the elderly. Research participants that involved a total of 30 respondents selected by the total sampling technique. In this study using a questionnaire. Data analysis was carried out by using bivariate data analysis test using Pearson Correlation Test. The study result showed that the majority of the respondent has a good level of knowledge related to osteoarthritis and pain management. Pearson Correlation Test with the degree of significance of $p < 0.05$ revealed that the p -value was 0.000. There was a correlation between the level of knowledge with pain management in elderly with osteoarthritis.

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INTRODUCTION

The impact of epidemiological changes in the disease in the elderly population tends to be degenerative. A well-known disease experienced by the elderly population is a disease that is closely related to the area of motion in the elderly knee joint. Disturbed area of motion of the joints in the elderly significantly impacted their daily body functions. Among them are dependency and low quality of life. One common problem related to area of motion disorder is osteoarthritis (OA) that attacks several lower extremity joints, such as the joints of the fingertips, knees, and heels [1].

Osteoarthritis is a disease of joint failure, in which all joint structures undergo pathological changes, are chronic in nature, and the main cause of pain. The prevalence of OA will increase with age. The women population also had a higher risk to be affected by OA more often than the man population. The percentage of people over 65 years of age will increase by 16.2% in 2040. This increase will also accompany by the increase in the incidence of diseases experienced by the elderly, especially OA. In 2040, 95% of OA

cases estimated to happen in the human population. Data from Bali Regional Health Department (2015) revealed that OA that classified into muscles and connective tissue disease is part of the ten most common diseases found in health care providers with the number of cases of 57,124. The number of OA cases in Denpasar City had reached 7,894. The highest number of cases happened in the woman population with a total of 4,546, followed by 3,348 cases on man population[2].

One of the common symptoms of OA is pain felt in the joints, knees, and ankles. Pain is an unpleasant sensory and emotional experience due to actual and potential tissue damage[3]. Pain that occurs in the elderly have physiological impacts on their body such as, increased respiration rate, peripheral vasoconstriction, increased blood sugar, increased muscle strength, decreased GI motility, pupil dilation, pale face, and rapid breathing [4].

Pain management in OA addressed by pharmacological and non-pharmacological approaches. Pharmacological approaches more extensively used in pain management than non-pharmacological approaches. Non-pharmacological approaches are also considered as an effective, cheaper, and

potential treatment for mild pain with minimal side effects. Some non-pharmacological pain approaches that are widely conducted to manage the pain are massage, relaxation, imagery, transcutaneous electrical nerve stimulation, and compress technique [5].

Complaints of pain in the elderly population usually influenced by several factors and could face some hindrances in its management. Poor management of pain will affect the health status and quality of life of the elderly. One factor that influences the management of OA among the elderly is knowledge or information. Knowledge defined as the result of knowing that occurs after an individual sense a certain object. Experiences and research had proven that knowledge-based behavior would be more sustainable than non-knowledge-based behavior[6].

Several factors significantly affected the level of knowledge of pain management, especially education. Together with attitude and practice, it affected the way to deal with pain properly. Good management of pain begins with a proper pain assessment: including pain, intensity, characteristics, and disturbances; painful condition; pain behavior; pain-related morbidity; pain treatment; and coping mechanism. Pain management in the elderly could be affected by various factors. An adequate level of knowledge required in managing pain due to chronic diseases experienced by the elderly[7].

This study aimed to examine the correlation between the level of knowledge and pain management in the elderly population with osteoarthritis in WanaSeraya Nursing Home.

METHOD

This study applied an analytic observational design with a cross-sectional approach to examine the correlation between the knowledge level and pain management in the elderly population with Osteoarthritis at WanaSeraya Nursing Home The study conducted on July 19th, 2020. Research participants that involved a total of 30 respondents selected by the total sampling technique. In this study using a questionnaire measuring instrument made by the researcher and the validity and reliability tests. Data obtained directly from the respondent by using an elderly knowledge questionnaire about Osteoarthritis that consisted of 10 question items and an elderly pain management questionnaire that consisted of 18 statement items. The questionnaires were employed a Gudman Scale with the "Yes" and "No" answer's option. Data analysis was carried out by using bivariate data analysis test using Pearson Correlation Test.

RESULTS AND DISCUSSION

Table 1. Characteristics of Elderly Respondent with OA at WanaSraya Nursing Home

Characteristic	Respondent (n=30)	
	Frequency (f)	Percent (%)
Age (Years)		
60-70	11	36.3
71-80	19	63.3
<i>Mean = 72.93</i>		
Sex		
Male	5	16.7
Female	25	83.3
Duration of Pain (Years)		
1-5	29	96
6-10	1	0.03
<i>Mean = 1.88</i>		

Based on Table 1., 19 respondents (63.3%) were in the range of > 70 years of age. The elderly over the age of 65 years usually has a physical decline which results in pain. This decline is due to the thinning of the cartilage resulting in pain, stiffness, limitation in movement due to decreased synovial fluid production, causing joint inflammation and

pain. The sex characteristics showed that the majority of respondents were female, with a total of 25 respondents (83.3%). Elderly women will experience a loss of bone mass by 40-50%. Twenty-nine respondents (96%) stated that the duration of pain they experienced had occurred for one to five years.

**Table 2
 Overview of Elderly Knowledge Level about OA**

Category	Frequency	Percent (%)
Good	9	30
Moderate	11	36.7
Poor	10	33.3
Total	30	100

Based on Table 2., the majority of respondents (36.7%) had a good level of knowledge. They possibly obtained OA information from counseling sessions conducted at

WanaSraya Nursing Home by health students. These sessions could improve their level of knowledge about the health and diseases in the elderly population.

Table 3
Overview of Pain Management in the Elderly in Overcoming Pain

Category	Frequency	Percent (%)
Good	8	26.6
Moderate	12	40
Poor	10	33.3
Total	30	100

According to Table 3., the majority of the respondent had adequate pain management (40%). They managed their pain by some methods: massaging to the painful knee, applying warm compresses to the knee area, providing warmth by giving infrared rays, and if it is unbearable, the elderly will seek help at the Elderly Care Clinic to get the pharmacological treatment of pain.

Study Variable Analysis

Pearson correlation test conducted to analyze the study variables with the level of significance of $p < 0.05$. The result from the Pearson Correlation Test revealed that $p = 0.000$. This result indicated there was a correlation between knowledge of OA and pain management on the elderly population.

DISCUSSION

Respondent's Characteristics

The majority of the elderly at WanaSraya Nursing Home who were experiencing osteoarthritis (OA) are aged between 71 to 80 years old. Knee OA is the most common joint disease in the elderly population and the significant cause of functional disability on 80% of people aged >65 years with the radiological presentation of osteoarthritis [8]. The case of OA in Indonesia was high. It had occurred on 5% of people aged >40 years old, 30% of people aged between 40 to 60 years old, and 65% of people aged >61 years old. The joint degeneration on clinical OA syndrome mostly occurs in the hands, stage, feet, and spine joints. It also can happen in some parts of synovial joints. The prevalence of damage that happens on the synovial joints increases with age. Older age would result in a higher chance of synovial joint damage. It estimated that one to two million elderly population in Indonesia would suffer from disabilities due to the OA. Therefore, the challenges to deal with OA will be more complex due to the high of elderly population [9].

The aging process considered as a cause of the weakness around the joint, alteration of joint flexibility of the cartilage calcification, and decreased chondrocyte function, which will support the occurrence of OA[10]. Most of those who experienced pain were female (83.3%). The incidence of OA in the last 20 years provided evidence that OA incidence doubled for women. Apart from age, genetic and sex (female) are major risk factors for OA[8]. Besides, the women population at this age was experiencing a significant reduction in estrogen production [10].

Knowledge Level

OA disease is one of the most common musculoskeletal disorders worldwide and a major cause of impairment and disability. Knowledge related to OA for the elderly population is required, especially in managing the pain in the knee. This treatment could be conducted in a healthy or sick condition. Pain management could be made the recovery

duration shorter. It also helps them to manage their health issue independently [11].

A good level of knowledge regarding pain management is vital for the elderly. It can estimate the pain that occurs in 45% to 85% of the elderly population. Untreated pain will lead to other problems: a decrease quality of life, problem in socializing, the occurrence of depression, sleep disturbance, cognitive impairment, and malnutrition. Pain management in geriatric patients could be complicated due to the physiological changes that occur with the aging process[12].

Based on the result, the majority of respondent' level of knowledge classified in the moderate category (11; 36.7%). This level of knowledge could be related to the educational background. It provides a strong influence on access to information sources. Higher education related to broader access to information sources [8].

Information obtained from various sources provided a broader range of knowledge. Even though a person had a low educational background, but if they consumed accurate information from some sources (television, radio, magazine, counseling session, smartphone, and other sources), the information gathered will influence their knowledge [13]. The elderly at WanaSeraya Nursing Home obtained knowledge about OA from various counseling sessions conducted by students who had their field practice. Thus, the respondent had exposed to information about the diseases that are often experienced by the elderly population.

Pain Management

Elderly pain is an unpleasant sensory and emotional experience of actual and potential tissue damage. When humans experience aging, there will be problems with physical decline which results in pain. Physical decline that causes pain is caused by, among others, the thinning of the cartilage, the cartilage that was originally smooth, white, translucent into opaque and yellow, thin, resulting in pain, stiffness, loss of movement, decreased production of synovial fluid, causing inflammation in the joints which also causes pain. Pharmacological approaches are more widely used in pain management, but non-pharmacological approaches are an effective treatment for mild pain and fewer side effects and are cheaper. Pain management in the elderly with non-pharmacological methods is proven to be able to help the elderly in reducing pain and only causes minimal side effects. Therefore, the use of non-pharmacological methods is highly recommended in reducing elderly knee pain [7].

Based on the results, 12 respondents (40%) had conducted adequate pain management. Pain is the most common complaint stated by OA survivors. Pain complaint in the elderly population triggers by multifactorial causes and sometimes encounter many hindrances in its management. The poor management of pain complaints leads to deterioration of health status and quality of life of the elderly.

Adequate information is a factor that affects the level of knowledge [11]. Pain management conducted by the elderly

at WanaSeraya Nursing Home was sufficient. They had received accurate information from health education sessions about pain management on OA. Simple interventions such as massage on the painful knee, warm compresses to the knee area, providing warmth by giving infrared rays, and accessing Elderly Care Clinic if the pain unbearable had already delivered during the health education session.

Correlation between the Knowledge Level and Pain Management in the Elderly with OA

Based on the results, the p-value was <0.05. This result indicated that there was a correlation between the level of knowledge and pain management in the elderly with OA. Knowledge is very significant in shaping one's actions [13]. A good level of knowledge about OA had a strong influence on the practice of managing OA. A good level of knowledge of diseases and pain management is required to manage the pain adequately. There are still many patients with poor level knowledge about the disease and pain management, so they could not manage the pain adequately and consequently will make the duration of recovery longer [14].

Knowledge is the basis of a person in taking action, where the level of knowledge of the elderly is closely related to how to treat their disease. According to the results of a study done by Isrizal and Lestari (2019) conducted at the TresnaWerdha Budi Luhur Nursing Home in Linggau City, there were 16 (53.3%) respondents who had a good level of knowledge and 22 (73.3%) respondents who had a sufficient pain management method[15]. In a study done by Andri (2020), among 25 elderlies, there were 13 (52%) elderlies who had a good level of knowledge and disease management. These results indicated that the level of knowledge and disease management has a very strong correlation [16].

The level of knowledge had a very strong correlation to how a person manages their illnesses. Poor management of disease correlated with a poor level of knowledge [17]. The respondent's good level of knowledge resulted in good practice in managing the disease [6]. Knowledge had a strong correlation with pain management. Knowledge about pain management was the background of their way of dealing with pain.

Limitation of The Study

In the Covid-19 pandemic situation, researchers had difficulty finding Research participants, especially the elderly who were sick or undergoing intensive care, so researchers only got 30 Research participants.

CONCLUSION AND RECOMMENDATION

There was a correlation between the knowledge level and pain management in elderly population with osteoarthritis. We suggested the routine delivery of health education related with pain management to the elderly population to improve their knowledge; Other research can conduct this research with quantitative methods so that the results can be generalized

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