QUALITY OF LIFE OF ELDERLY WOMEN WITH KNEE OSTEOARTHRITIS

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Abstract

Elderly women who had the symptoms of knee osteoarthritis are reported to have a higher, more pain, and loss of knee function related to quality of life (27.5%) compared to elderly males (21.8%). The purpose of this study was to examine the quality of life of elderly women with knee osteoarthritis. Method, this study is a cross sectional research design with a linear regression analysis method. The population were all elderly women with osteoarthritis (age> 45 years) in General Hospital of Bekasi as many as 80 elderly women were taken by consecutive sampling. Data was collected by interviews with a questionnaire. The Variables analyzed demographic characteristics such as age, body mass index (BMI), education, exercise routine, a history of osteoarthritis in their family, employment status, and the use of walking aids to determines about factors that associated with osteoarthritis index through the instrument of WOMAC (the Western Ontario and McMaster Universities Osteoarthritis Index) as a measuring instrument joint pain and disability of osteoarthritis patients,we correlate the osteoarthritis index to the quality of life through a questionnaire WHOQOL-OLD. The average score obtained is 2.71 in the Standardized Total Score (range 1-5) in the WHOQOL-OLD guide, which means they have a poor quality of life with the correlation value obtained from the relationship of the Osteoratritis Index with quality of life is r = - 0.601 (p value <0.001). Elderly women with knee osteoarthritis are in a position of poor quality of life.

Keywords: elderly, osteoarthritis, hospital

1. INTRODUCTION

The prevalence of osteoarthritis in Indonesia by 5% at age <40 years, 30% at age 40-60 years. The prevalence in those aged> 60 years, reaching 65% [1]. Prevalence based on data from the World Health Organization (WHO), impaired OA population in Indonesia is 8.1% of the total population and women have twice risk higher than men. According to data from 2013 from Basic Health Research (Riset Kesehatan Dasar) the highest prevalence at age ≥75 years (33% and 54.8%). Prevalence at the diagnosis of health workers is higher in women (13.4%) than men (10.3%) were diagnosed as well as health workers or symptoms in women (27.5%) is higher than men (21.8 %). The prevalence in West Java, and for the second largest known is East Nusa Tenggara (33.1%) about 32.1% [2]. While the prevalence of osteoarthritis in the Regional General Hospital of Bekasi continues to increase which in 2013 amounted to 11.2% (97 people), in 2014 was 12.5% (105 people), and in 2015 by 16% (154 people) with prevalence of 78.6% were female between 50-81 years old. Women are more often affected osteoarthritis knee with more pain and functional loss associated with quality of life than men. While men more often osteoarthritis thigh, wrist and neck. Overall, under 45 years, the frequency of osteoarthritis (OA) approximatelyequally between the men and women, but over the age of 50 years (after menopause) frequency osteoarthritis more in women than men. This shows the hormonal role in the pathogenesis of osteoarthritis[3].The prevalence of hand and knee of OA increases and more in women than men, especially those aged over 50 years old. The number of individuals affected by osteoarthritis are estimated continue increase with increasing age of the population. Various impacts of

OA be a significant issue for everyone, especially the elderly, which is potentially cause a lot of negative impact on the lives of the elderly, such as independence of activity and quality of life of the elderly [4].

2. MATERIAL AND METHODS

The study was conducted at the Regional General Hospital of Bekasi. The research was in November 2015 - April 2016. The population in this study were all patients with osteoarthritis elderly women who visited the Regional General Hospital of Bekasi from January 2016 to April 2016 in as many as 80 people and the sample taken by consecutive sampling. This research is an analytical survey using a quantitative approach with cross sectional study. Data for the dependent variable quality of life of elderly women with osteoarthritis obtained with questionnaires WHOQOL-OLD (WHO Quality of Life-OLD), the WHOQOL-OLD consist of 24 Likert-scale items assigned to six facets: "Sensory Abilities" (SAB), "Autonomy" (AUT), "Past, Present, and Future Activities" (PPF), "Social Participation" (SOP), "Death and Dying" (DAD) and "Intimacy" (INT). The "Sensory Abilities" facet assesses sensory functioning and the impact of loss of sensory abilities on quality of life. The "Autonomy" facet refers to independence in elderly and thus describes the amount of being able to live autonomously and to take owndecisions. While the "Past, Present, and Future Activities" facet describes satisfaction about achievements in life and at things looking forward to, the "Social Participation" facet delineates participation in activities of daily living, especially in the community.The "Death and Dying" facet is related to concerns, worries, and fears of death and dying, while the "Intimacy" facet assesses being able to have personal and intimate relationships [5]. The Independent variables such as Osteoarthritis Index adopted to Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) to assess the functional status include evaluation of symptoms and function, specifically in patients with OA of the knee and hip with three subscales: (1) measures the severity of pain in change of position and movement, (2) measures the severity of stiffness, and (3) measures the degree of difficulty in performing functional activities of daily activities [6]. Osteoarthritis Index gained from the interview questionnaire, while biomedical factors of the elderly woman obtained from direct measurement results and medical records.This study is an analytic survey research using a quantitative approach with cross sectional study design.

3. RESULT AND DISCUSSIONS

There are 61.3% of elderly women aged 55-64 suffer from OA; 53.8% had a BMI> 27.0; 83.8% had a history of OA at the family; 38.8% of elderly women with OA had completed in high school education,57.5% of elderly women with OA still work; 58.5% had no exercise; 54.9% use a walker. The results of the analysis obtained an average the evaluation outcome of osteoarthritis index is 68.13% (95% CI: 65.60% -70.65%) with a standard deviation of 11.35%. The results of lowest osteoarthritis index outcome is 27.08% and the highest outcome of osteoarthritis index is 82.29%. The first of WOMAC sub-scales is pain, at the most widely perceived by 50% of respondents while walking, climbing up the stairs of 46.3%, 45% at night (nocturnal), 58.8% at rest, and 76.3% when were carrying a load. The second of WOMAC sub-scales is stiffness. The biggest stiffness perceived by the respondents 48.8% during in the morning and 56.3% are rigidity occurs later on the day. The last of WOMAC subscales is assess the degree of difficulty in performing functional activities of daily activities and the levels are (1) Quite difficult to move most felt by 38.8% of respondents, walking on a flat surface, 40% taking off socks, 55% at the entry/exit point of the bath tub, 76.3% sitting,and 60% while doing a light household tasks. (2) The most difficult to move felt by 65% of respondents while going down the stairs, up the stairs 55%, 41.3% while standing up from sitting, 55% standing, 51.3% when turning onto the floor, 75% when getting in/getting out of car , 58.8% when go shopping, 50%

when wearing socks and 51.3% when lying in bed, 55% when getting out of bed, and 57.5% getting on/off toilet. (3) Very difficult to move most felt by 46.3% of respondents while doing a heavy household tasks. The results of the analysis of Quality of Life of Elderly Woman using questionnaires WHOQOL-OLD. The lowest of Quality of Life (QoL) was 22.92% and the highest was 75.00%. From the estimation believed that interval can be concluded 95% that the average Quality of Life (QoL)of respondents are between 39.95% up to 45.92%.

The characteristic of respondents (age, body mass index, last education, and regular exercise) was described in **table 1** with ANNOVA test while there are differences in the results of the evaluation of osteoarthritis index among the four age range (45-54; 55-64; 60-69 years; and >70 years) with a *p value* = 0.001 (alpha 5%). Further analysis proved that a different group range between 55-64 significantly with ≥ 70 years. The increase of the prevalence and incidence of OA age probably is a consequence of cumulative exposure various risk factors and biologic changes that occur with aging that may make a joint less able to cope with adversity, such as cartilage thinning, decreasing muscle strength, poor proprioception, and oxidative damage[4]. Body Mass Index of respondents there is a significant difference (*p value*=0.012; alpha 5%) of osteoarthritis index among the three ranges of the Body Mass Index. Further analysis proved that the different groups was significant with a BMI from 18.5 to 25.0 BMI> 27.0. Increasing loading on the joint probably the main, not only mechanism by which obesity causes knee or hip OA, but also overloading the knee and hip joints could lead to synovial joint breakdown and failure of ligamentous and other structural support[4].In the last study that has been taken by respondents there are differences in osteoarthritis index evaluation result among the four levels of education (*p value*=0.001; alpha 5%). Further analysis proved that different groups shows significant results that graduated from college compare with graduated from elementary school and high school. In the workout routine that is run by the respondent with the provisions of regular exercise <3 times/week / 30 minutes there is a difference between the evaluation results compare with workout routine osteoarthritis index (*p value*<0.001; alpha 5%). Further analysis proved that different groups significant is the respondents who do not do sports with respondents who did not exercise regularly <3 times / week / 30 minutes and respondents who do not do sports with respondents who exercise regularly ≥3 time /week / 30 min.

Table 1. Characteristic Relationships with Osteoarthritis Index (ANOVA test)

No.	Variable characteristics	Osteoarthritis Index			
		Mean	**SD**	**95% CI**	***p value***
1.	Age				
	45-54 years old	62.50	11.38	44.39-80.61	0.001
	55-64 years old	65.29	11.36	62.02-68.55	
	60-69 years old	68.36	12.17	58.19-78.53	
	≥ 70 years old	76.54	6.19	73.55-79.52	
2.	Body mass index				
	18,5 – 25,0	66.99	14.22	60.84-73.13	0.012
	25,1 – 27,0	61.01	5.60	57.78-64.25	
	>27,0	71.05	10.01	67.97-74.14	
3.	Educational background				
	College	63.43	9.62	58.80-68.07	0.001
	Senior high school	65.42	12.39	60.88-69.97	
	Junior high school	72.16	9.48	67.96-76.36	
	Elementary school	78.65	4.20	75.13-82.16	
4.	Exercise routines				
	Do excercise regularly ≥ 3 times/ week /30 minutes	57.30	2.28	65.60-70.65	<0.001
	rarely do exercise regularly <3 times/week/30 minutes	57.45	8.55	54.00-60.91	
	Don't do exercise	75.26	6.86	73.27-77.25	

For variables characteristics (Disease History Osteoarthritis in the family, Employment, and Uses of aids walk) could be described in **Table 2** using T test-Independent, while there is a significant difference between the average results of evaluation index osteoarthritis who do not have family history of osteoarthritis compare with having a family history of osteoarthritis (*p value*=0.027; alpha 5%).Genetic factors has been played a role in susceptibility to OA, particularly in cases involving the hands and pelvis. Most of cases is estimated that linkages to chromosome 2 and 11. The presence of a mutation in the gene II procollagen genes or to other structural elements such as the joint cartilage collagen type IX and XII, binding proteins or proteoglycan is said to contribute towards the familial tendency in certain OA. But genetic factor in OA do not determine the severity of pain and the difficulty of daily activities[7]. In the office shown there is a significant difference between the average results of evaluation index osteoarthritis who had worked compare with worked (*p value*=0.001; alpha 5%), and the last in the use of walking aids seen significant difference between the average results of the evaluation osteoarthritis index that does not use a walking aid compare with the use of walking aids (*p value*<0.001; alpha 5%).

Table 2. Characteristic Relationships with Osteoarthritis index (Independent T-test)

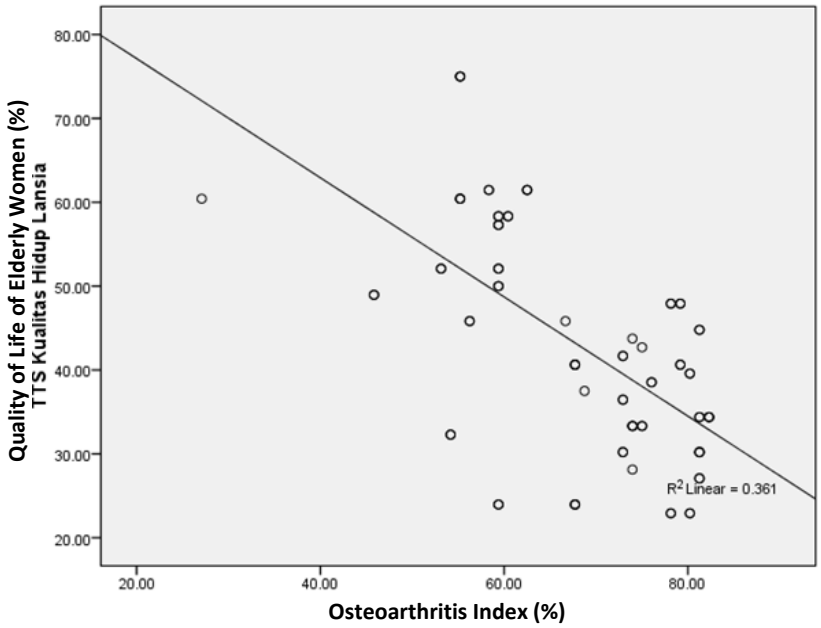
No.	Variable Characteristic	Indeks Osteoarthritis				
		Mean	**SD**	**SE**	***p value***	**N**
1.	Medical history of OA at the family					
	Nothing	74.44	4.24	1.18	0.027	13
	Exist	66.90	11.90	1.45		67
2.	Employement					
	Work	64.56	11.59	1.70	0.001	46
	Do not work	72.95	9.14	1.57		34
3.	Use of aids walk					
	Do not use	57.41	7.82	1.32	<0.001	35
	Use	76.46	4.65	0.69		45

The results of the analysis of the relationship between osteoarthritis index to the quality of life of elderly women suffering from osteoarthritis by using correlation and simple linear regression showed a strong correlation (r=-0.601) and a negative direction **(Fig. 1)** The results of the analysis of correlation and regression between the index Osteoarthritis respondents with quality of life showed powerful correlation (r= -0.601) a negative correlation means increasing the onset of pain, stiffness perceived, and difficulty to perform daily activities suffered by the respondent diminishing the quality of life of respondents. The coefficient of determination is 0.361, it means, regression line which we earn can explain 36.1% of the variation Quality of Life or the equation of the line obtained is good enough to explain the variables Quality of Life. Statistical test results found significant relationship between osteoarthritis index compare with the Quality of Life (*p value*<0.001; alpha 5%) **(table 3)**.

Table 3. Relationship of Osteoarthritis Index and Quality of Life of Elderly Women with Knee Osteoarthritis

Variable	r	R^2	equations	*p value*
Osteoarthritis index	-0.601	0.361	Quality of life=91.341+(-0.711)*Osteoarthritis index	<0.001

Fig 1. Correlation Prediction ofOsteoarthritis Index and Quality of Life



4. CONCLUSION

There are seven variables that could related with Index Osteoarthritis such as Age of respondents, Body mass index, Educational background, Exercise routines, Medical history of Osteoarthritis, Employement, and Use of aids walk. The analysis of correlation and regression between the index Osteoarthritis with quality of life showed negative correlation, it means increasing the onset of pain, stiffness perceived, and difficulty to perform daily activities suffered by the respondent diminishing the quality of life of respondents.

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