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## ASSESSMENT OF QUALITY OF LIFE: AMONG OSTEOARTHRITIS PATIENTS ATTENDING PRIMARY CARE HOSPITAL

Shaik Firoz<sup>1</sup>, KarriJemini Charan<sup>2</sup>, JaggavarapuVasantha<sup>3</sup>, NattaPratibha<sup>4</sup>.

<sup>1</sup>Assistant Professor, Department of Pharmacy Practice, QIS college of pharmacy, Ongole, Prakasam ( Dist.), Andhra Pradesh, India, 523002.

<sup>2</sup>Assistant Professor, Department of Pharmacy Practice, Aditya pharmacy college, Aditya Nagar, Surampalem, Andra Pradesh India, 533437.

<sup>3</sup>Clinical data analyst, data management department, PEREXEL International Pvt. ltd.

<sup>4</sup>Assistant professor, department of pharmacy, Vijaya Institute of Pharmaceutical Sciences for women, Enikepadu, Vijayawada,521108.

### Abstract

**Background:** Osteoarthritis is the most common chronic inflammatory musculoskeletal condition in older people. It's a major cause of disability in elderly populations around the world, particularly in developed countries.

**Objective:** The objective study was to assess the quality of life in Osteoarthritis patients by using adaptive SF-36 questionnaire form based on their physical and mental status.

**Methods:** A prospective observational study conducted in both the outpatient and inpatient department of orthopaedics at the primary care hospital, Rajahmundry, Andhra Pradesh. An adaptive SF-36 questionnaire form was used which consists of 36 questions of 8 subscales in that, 4 sub-scales assess physical status and remaining 4 sub-scales assess the mental status of osteoarthritis patients to determine the quality of the life.

**Results:** A total of 108 patients were screened for assessing QOL in OA. Among them, 55.6% of males are affected by OA more than 44.4% of females. A total of 39 (51-60 years of patients) 53.97% women's detect worse health than men, based on their PCS and MCS.

**Conclusion:** We assessed QOL in osteoarthritis patients based on their physical and mental status questions (sub-scales) in adaptive SF-36 Questionnaire form. Our study concludes that women's health is in worse condition at the age of 51-60 than men.

**Keywords:** Quality of life, Osteoarthritis, Physical Component System, Mental Component System.

**\*Corresponding Author:** Dr. Shaik Firoz Pharm. D, Assistant Professor, Department of Pharmacy Practice, QIS College of Pharmacy, Ongole Prakasam Dist AP, India.

**E Mail Id-** zorif22@gmail.com

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### INTRODUCTION

Quality of life is an imperative consideration in medical care. Some medical treatments can seriously impair quality of life without providing appreciable benefit, whereas others greatly enhance the quality of life. The involvement of OA to the impairment of quality of life (QOL) is unclear<sup>1</sup>. It's a major cause of disability among older people around the world, particularly in developed countries. It covers around 15% proportions, among all musculoskeletal problems<sup>2</sup>.

Osteoarthritis is a chronic disease characterized by erosion of cartilage and decrease in joint space, and finally, synovial fluid is decreased in patients, mostly this disease prevalence among older people above 45 years in male and female patients<sup>3</sup>. Osteoarthritis (OA) is the most common type of arthritis also called degenerative arthritis or degenerative joint disease<sup>4</sup>. Arthritis is a general term that means inflammation of joints. OA is the most common joint disease, and it is one of the most frequently occurring health problems for middle-aged and older people seen almost especially among older ages, affecting about 50% of those over 65 years of age and almost all individuals over age 75 years<sup>5</sup>.

Osteoarthritis primarily affects the weight-bearing joints of the axial and peripheral skeleton, having pain, restriction of motion, deformity, progressive disability and diminished tone of liveliness<sup>6</sup>. It is characterized by progressive decline in quality and loss of articular cartilage and by reactive bone changes at the margins of joints and covers the ends of bones<sup>7</sup>. While osteoarthritis is at risk of damage to the knee, in a majority of the cases, knee problems are the most common results in loss of cartilage and remodeling of subarticular bone, osteophyte formation, ligament laxity, synovial inflammation and damage to particular bones is higher, the most common symptoms are joint pain, stiffness, limitation of movement, Grating sensation, Bone spurs, loss of flexibility, Tenderness<sup>8,9</sup>.

The questionnaire form for quality of life was adopted from the short-form (SF-36) health survey website, with only 36 questions used as a multi-purpose of the health survey<sup>10-12</sup>. The short- form (SF-36) the health survey was developed by Ware, Snow, Kosinski, &Gandek, in 1993. Version 2.0 Short form - 36 (SF-36v2, by Ware et al., 2000; Ware & Kosinski, 2001; Ware

et al., 2003) questionnaire was adopted to assess the quality of life in arthritis patients with treatment<sup>13,14</sup>.

## METHODS

A prospective observational study was carried out for 6 months (May 2014 to October 2014) in outpatient and inpatient departments of orthopaedics at primary care hospital, Rajahmundry, Andhra Pradesh. Patients age >30 years either gender diagnosed in or outpatients without co-morbid conditions, and the physical and mental status of the patient is considered by using an adoptive SF-36 Questionnaire form in the given study period were included. The exclusion criteria are set for patients age <30 years and > 30 with co-morbid conditions<sup>15</sup>. A total 108 patients who met the inclusion criteria were recruited in the study. After that time, patient demographics, reasons for admission and medical history were collected in a specially designed data collection form and are asked to answer the adaptive SF-36 questionnaire. It consists of 8 sub-scales, 4 scales come under physical status and the remaining 4 scales come under mental status. While the severity of the pain of the osteoarthritis and normal physical functioning of the patient is determined and in mental status, the patient's emotional levels and social functioning are noticed, the quality of life in patients is assessed by using the adoptive Questionnaire form and scoring has been given to each patient.

## DATA ANALYSIS

After collecting data from patients, the questionnaire was scored individually by using the algorithm provided by the developer. In the scoring system each item is scored in the 0 to 100 range so that the lowest and highest possible scores are 0 and 100, respectively based on the score the high score defines a more favourable health state<sup>15-17</sup>. Reliability or internal consistency of the eight subscales and two summary components which measure the degree of the same construct in every test item; measures have been estimated to be using Cronbach's alpha coefficients<sup>18</sup>.

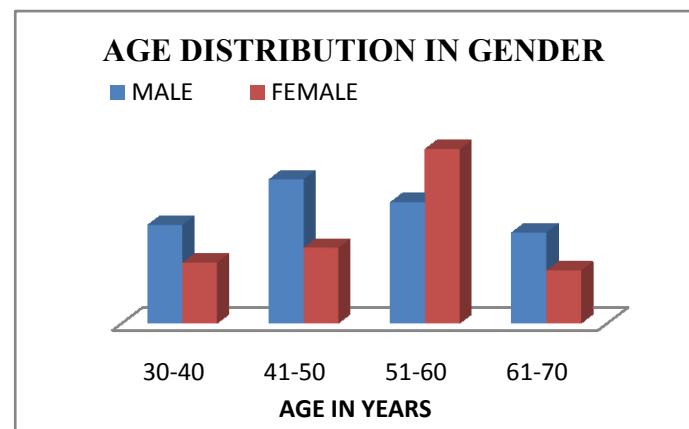
## RESULTS

Data were examined as described earlier in the plan for work and methodology. The obtained data from patient data forms and questionnaire-based information on osteoarthritis was thoroughly analyzed.

## AT-RISK POPULATION

While many types of research are described as gender distribution in past conditions, females are more prone to osteoarthritis than males, as in our study, observation; we found that males are mostly affecting 55.6% than females 44.4%. The total number of patients included in the study was 108, We found the frequency of age distribution many people are affected by Osteoarthritis at the age of 51-60(36%) as shown in the fig.1 in this females(21.29%) are more prone than male(14.81%) as shown in the fig.2, in which 27% cases of age between 41-50(males:17.59%; females 9.25%), 19% cases of age between 30-40(males12%,females7.41%), 18% cases of age 61-

70(male11.11%, females 6.48%). Details of the age and gender distribution are depicted below in the **Figure 1**

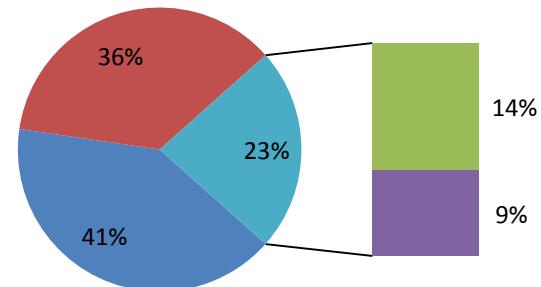


**Figure 1: AGE DISTRIBUTION IN GENDER**

In an attempt to study, we noticed different types of occupational status, in which we were, categorized occupational status, such as Daily wage workers, House wife's, Farmers, and Drivers. According to the study results, the effect of OA in the occupation are daily wage workers (41%), < housewife (36%) < farmers (14%) < drivers (9%). In an attempt at the study, daily wage workers are more affected with OA than other occupational

## OCCUPATION DISTRIBUTION

■ DAILY WAGE ■ HOUSE WIFE  
■ FORMER ■ DRIVER



**Figure 2 OCCUPATION DISTRIBUTION**

distribution, as shown in **Figure 2**.

**Table 1: MEAN AND SD, CRONBACH ALPHA COEFFICIENTS FOR SF-36 SCALES OF THE EIGHT DIMENSIONS**

	PF			RP			BP			GH			VT			SF			RE			MH		
	M	SD	$\alpha$	M	SD	$\alpha$	M	SD	$\alpha$															
<b>TOTAL POPULATION</b>	39.31	23.52	0.82	37.73	40.51	0.78	39.47	12.72	0.80	41.56	18.72	0.81	47.92	17.16	0.80	44.79	13.58	0.80	35.8	43.88	0.80	51.37	16.43	0.80
<b>GENDER</b>																								
<b>MALE</b>	37	24.03	0.79	45	44.03	0.74	40	12.94	0.77	44	19.87	0.78	48	16.87	0.76	46	13.24	0.77	44	47.01	0.76	53	17.17	0.77
<b>FEMALE</b>	42.19	22.64	0.86	28.13	33.67	0.84	38.46	12.59	0.86	38.31	16.83	0.85	47.5	17.69	0.85	42.71	13.85	0.85	24.99	37.35	0.86	49.67	15.46	0.86
<b>AGE</b>																								
<b>30-40</b>	44.52	25.97	0.90	39.29	44.42	0.88	40.52	11.75	0.89	45.52	20.28	0.87	50.24	17.28	0.88	49.24	13.96	0.89	31.74	45.308	0.88	53.74	18.42	0.88
<b>41-50</b>	38.79	28.08	0.66	37.93	44.63	0.56	37.69	11.71	0.65	40.48	19.64	0.64	47.93	17.65	0.66	43.37	13.62	0.64	36.78	46.59	0.58	49.93	16.27	0.77
<b>51-60</b>	37.44	18.7	0.62	37.82	35.3	0.70	37.33	13.03	0.61	38.92	17.86	0.66	46.41	17.92	0.59	41.03	12.15	0.60	38.46	42.95	0.83	49.13	16.29	0.61
<b>61-70</b>	38.16	23.05	0.82	35.53	42.75	0.82	45.42	13.76	0.82	44.26	17.61	0.83	48.42	15.64	0.82	48.68	14.37	0.83	33.33	43.03	0.82	56.21	14.57	0.82
<b>OCCUPATION</b>																								
<b>DAILY WAGE</b>	39.77	22.95	0.82	38.07	42.96	0.76	40.66	12.39	0.79	43.5	19.21	0.79	50	16.98	0.78	47.73	13.01	0.79	36.36	45.93	0.78	52.91	15.85	0.78
<b>HOUSE WIFE</b>	40.9	23.95	0.84	31.41	34.28	0.82	39.05	13.17	0.85	39.51	17.14	0.84	49.1	17.62	0.85	41.67	13.55	0.84	27.34	38.14	0.85	50.26	15.07	0.85
<b>FORMER</b>	35.33	29.12	0.75	35	45.12	0.71	39.47	13.13	0.73	38.67	19.02	0.77	39.67	15.86	0.73	44.17	13.25	0.73	33.33	45.43	0.70	46.93	21.67	0.75
<b>DRIVER</b>	37	16.53	0.87	65	39.44	0.86	35.9	13.45	0.87	45.2	23.13	0.87	46.5	16.67	0.85	45	15.18	0.86	70	42.89	0.88	55.6	15.71	0.85

M = mean, SD = Standard Deviation,  $\alpha$ = CRONBACH ALPHA

PF= Physical Function, RP = Role of Physical, BP = bodily pain, GH = General Health,

VT= vitality, SF = Social Function, RE = Role Emotion, MH = Mental Health

#### ADOPTIVE SF-36 SCALE SCORES:

Completed questionnaires were obtained from 108 people contacted, eight subscales of the adoptive SF-36 were calculated using algorithms recommended by the developers, and the scoring system is based upon the physical and mental status of the patients and the following sub-scales come under physical status PF, RP, BP, VT and the following sub-scales come under mental status SF, RE, GH, MH. Descriptive statistics for the eight sub-scales of the adoptive SF-36 and internal reliability are reported for the sample as a whole in Table 1. All alpha statistics show good ( $\alpha > .70$ ) internal reliability.

**Table 2: MEAN AND STANDARD DEVIATION OF PCH AND MCH IN**

	PCS		MCS	
	M	SD	M	SD
<b>TOTAL POPULATION</b>	39.52	17.82	44.97	18.13
<b>GENDER</b>				
<b>MALE</b>	42	17.92	48	18.64
<b>FEMALE</b>	36.77	17.49	41.22	16.99
<b>AGE</b>				
<b>30-40</b>	42.46	21.65	46.13	21.06
<b>41-50</b>	38.72	18.87	44.56	18.17
<b>51-60</b>	37.88	14.41	43.76	17.26
<b>61-70</b>	40.84	18.86	46.66	17.81
<b>OCCUPATION</b>				
<b>DAILY WAGE</b>	40.51	17.57	46.75	18.62
<b>HOUSEWIFE</b>	37.72	18.03	42.09	16.74
<b>FARMER</b>	37.12	18.35	41.03	18.13
<b>DRIVER</b>	45.78	18.24	54.28	19.89

Table 1&2 provide normative data, in the form of mean, Standard deviation and alpha values overall, women reported poorer health on all subscales of the adoptive SF-36 than men, according to the gender, age, and occupation from the whole sample, in which, Item Internal consistency of gender, all item-hypothesized scale correlations were greater than 0.70 (male), 0.80 (female) and thus met the test of item internal consistency is acceptable and good. The developers claim that the newly configured role-emotional and role-physical response formats would lead to the fewer floor and ceiling effects and this was borne out in this study. Fifty (46.29%) respondents scored zero in the role-physical dimension and 23 (21.29%) scored 100. Similarly, the role-emotional Scores were 58 (53.70%) scoring zero and 31 (29%) scoring 100 in this survey. The developers of the adoptive SF36 suggest that changes to the response categories of the role's emotional and role-physical subscale will increase their internal reliability consistency and reduce the floor and ceiling effects that have been reported in the literature. Table 1&2 provide normative data, in the form of mean, Standard deviation and alpha values overall, women reported poorer health on all subscales of the adoptive SF-36 than men, according to the

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#### DISCUSSION

The people who are doing work like lifting heavy objects, walking several hundred yards example occupations like daily wage workers, drivers, farmers, and other workers etc. these people having a higher risk of getting of Osteoarthritis, so to know about the quality of life in Osteoarthritis patients, we used an adoptive SF-36 Questionnaire to assess the quality of life (QOL) in osteoarthritis patients. The aim of our study was to assess QOL in osteoarthritis patients in the study population. Our study simply provides an overall picture of the way in which QOL has been assessed at Osteoarthritis patients.

In our project we recruited 108 patients with osteoarthritis, male and female of age between 30-70 years, those are from different occupations. In our study, we found that the male (55.6%) patients are more prone to osteoarthritis than the female (44.4%) patients. Many studies showed that the prevalence of Osteoarthritis increases in old age, in our project we observed that the age group of 51-60 years, in these females (21.29%) is more prone to Osteoarthritis than males (14.81%), and age of 61-70 (11.11%) male patients are more prone to Osteoarthritis, than female (6.48%), and age of 30-40 (12%) male patients are more prone to Osteoarthritis, than female (7.41%), 41-50 (17.59%) male patients are more prone to Osteoarthritis, than female (9.25%).

In an attempt to study, we noticed that different types of occupational status, in which we were categories of occupational status, such as daily wage workers, house wife's, farmers, and drivers, most of the workers who are exposed to repetitive stress of hands or lower limbs, are at higher risk of getting Osteoarthritis due to increased stress in joints. As per our study, we observed that daily wage workers (41%) are more prone to Osteoarthritis, and daily housewife (36%) is the next place, farmers are 14% and drivers 9%.

Based on our study we fully fill the aim of our study that is assessment of QOL, as our study we noticed the worst health in age of 51-60 year age group female (21.29%) patients and occupation of farmers (9%) based on the lesser score of mean and standard deviation of PCS and MCS that is shown in Table 2.

## CONCLUSION

Finally we are here with results which are our aim, which is an assessment of the quality of life in osteoarthritis patients based on physical and mental status by using adoptive SF-36 questionnaire. Our study assesses that age and occupation status which are etiological factors for OA; affects the quality of life in patients with osteoarthritis patients in the study population.

## COMPETING INTERESTS

The authors declare that they have no competing interests.

## REFERENCES

1. Kawano MM, Araújo ILA, Castro MC, Matos MA. Assessment of quality of life in patients with knee osteoarthritis. *Acta Ortop Bras.* [online]. 2015;23(6):307-10. Available from URL: <http://www.scielo.br/aob>.
2. Harsha Kumar HN, Nagaraj K, Luthra K, Gupta P, Sapar P, Gupta S, et al. Health-related quality of life among osteoarthritis patients attending primary care clinics of Mangalore city. *Int J Med Public Health* 2015;5:55-8.
3. Felix Angst, Gerold Stucki and André Aeschliman. Quality of life assessment in osteoarthritis. 2003;3(5), 623-636.
4. Zainal F Zakaria, Azman A Bakar, Hadzri M Hasmoni, Fauzi A Rani And Samiah A Kadir. Health-related quality of life in patients with knee osteoarthritis attending two primary care clinics in Malaysia: a cross-sectional study. *Asia Pacific Family Medicine*. 31 December 2009; 8:10. doi:10.1186/1447-056X-8-10
5. Esmeraldino Monteiro de Figueiredo Neto1, Thais Thomaz Queluz2, Beatriz Funayama Alvarenga Freire. Physical activity and its association with quality of life in patients with osteoarthritis. Elsevier Editora Ltda. 2011;51(6):539-549.
6. M.J.E.Wassenaar, N.R. Biermasz, M. Kloppenburg, A.A. van der Klaauw, J.Tiemensma1, J.W.A. Smit, A.M. Pereira, F. Roelfsema, H.M. Kroon, J.A. Romijn. Clinical osteoarthritis predicts physical and psychological quality of life in acromegaly patients. *Growth Hormone and IGF Research*. 2010 February 27; Chapter 7:141-164.
7. Frederic Massicotte. Epidemiology of osteoarthritis. *Research Signpost*. 2011: 1-26.
8. John T. Parsons and Alison R. Snyder. Health-Related Quality of Life as a Primary Clinical Outcome in Sport Rehabilitation. *Journal of Sport Rehabilitation*. 2011; 20, 17-36.
9. Andre Klussmann, Hansjürgen Gebhardt, Matthias Nubling, Falk Liebers et al. individual and occupational risk factors for knee osteoarthritis: results of a case-control study in Germany. *Arthritis Research & Therapy*. 2010; 12:1-15.
10. Ware JE, Bayliss MS, Rogers WH, Kosinski M, Tarlov AR. Differences in 4-year health outcomes for elderly and poor, chronically ill patients treated in HMO and fee-for-service systems. *JAMA* 1996;276:1039-1047.
11. Ware JE Jr, Snow KK, Kosinski M, Gandek B. SF-36 Health Survey Manual and Interpretation Guide. Boston, MA: New England Medical Center, The Health Institute, 1993.
12. McHorney CA, Kosinski M, Ware JE. Comparisons of the costs and quality of norms for the SF-36 Health Survey collected by mail versus telephone interview: Results from a national survey. *Medical Care* 1994;32:551-567.
13. Ware JE, Kosinski M, & Keller SD. SF-36 Physical and Mental Health Summary Scales: A User's Manual. Boston, MA: Health Assessment Lab, 1994.
14. McHorney CA, Ware JE, & Raczek AE. The MOS 36-Item Short-Form Health Survey (SF-36): II. Psychometric and clinical tests of validity in measuring physical and mental health constructs. *Medical Care* 1993; 31: 247-263.
15. Ware JE, Kosinski M, Gandek B et al., The factor structure of the SF-36 Health Survey in 10 Countries: Results from the IQOLA Project. *J Clin Epidemiol* 1998;51(11):1159-1165.
16. Cohen J. *Statistical Power Analysis for the Behavioral Sciences*: Second Edition. Hillsdale, NJ : Lawrence Erlbaum Associates, Inc. 1988.
17. Okamoto LJ, Noonan M, DeBoisblanc BP, Kellerman DJ. Fluticasone propionate improves quality of life in patients with asthma requiring oral corticosteroids. *Annals of Allergy, Asthma, & Immunology* 1996; 5(76):455-61.
18. Hornbrook MC, Goodman MJ. Assessing relative health plan risk with the SF-36 health survey. *Inquiry* 32: 56-74, 1995.