A Study To Assess The Correlation between Quality of Life, Pain, Severity And Duration of Disease In Arthritis Patients

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Abstract: Background: Pain is a prominent symptom of arthritis. It may increase during a flare and subside but generally arthritis patients suffer from chronic pain. Aim: To study the correlation between pain, duration and severity of disease with quality of life among Indian adults suffering from arthritis in a tertiary care centre. Methods: The study sample comprised of adults age between 18-70 years with clinician diagnosed arthritis (n=370). Pain was assessed using a linear visual analogue scale ranging from 1 to 10 and quality of life was assessed by WHOQOL-BREF score. Results: On applying Pearson Product Moment Correlation between both the scores pain was found to be negatively correlated with quality of life. (r - 0.32, P < 0.000). On applying Pearson Product Moment Correlation between both the scores duration of disease was found to be negatively correlated with quality of life (r -- 0.17 P 0.001). On applying Pearson Product Moment Correlation between both the scores Severity of arthritis was found to be negatively correlated with quality of life (r -- 0.11 P 0. 045). Conclusion: The present study had limitations of a hospital based investigation as it may not reflect the picture at the population level. Also, instead of screening instruments structured interviews would have been useful in establishing clinical diagnosis. But considering the fact that pain, duration and severity of disease have much effect on health related quality of life as syndromal diagnoses this study can be considered to be of some value. [H Singh Natl J Integr Res Med, 2018; 9(1):41-44]

Key Words: Arthritis, Duration of disease, Pain, Severity of disease, Quality of life.

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Introduction: Rheumatoid arthritis is a chronic systemic disease that affects joints, muscles, tendons and connective tissue. Its prevalence ranges from 0.3 to 1% in adults, affects 21 million and accounts for about 5 million 'Disability Adjusted Life Years' (DALY) worldwide[1]. Osteoarthritis is a degenerative joint disease which mainly affects the articular cartilage. 10% of people above 60 have symptoms of osteoarthritis. It is the 10th leading cause of nonfatal burden in the world and accounts for 15 million DALYs globally[2].

Despite the slow development arthritis is progressive in nature and eventually leads to joint destruction, significant loss of function and reduced quality of life in many patients. Psychosocial factors are being suggested as mediators or moderators in the mediation of relation between arthritis and psychological functioning[3].

In India 15% of people i.e. 180 million suffer from arthritis the prevalence is higher than many well known diseases such as hypertension, diabetes, AIDS and cancer[4].

Pain is a prominent symptom of arthritis. Patients with arthritis often report high levels of pain that can result in increased levels of disability and distress. It may flare and subside but generally arthritis patients suffer from chronic pain. The chronic nature of arthritis pain requires patients to make constant adjustments to learn to live with their disease.

Over the last two decades clinicians are focusing on quality of life in addition to symptom relief in measuring progress or response to treatment. Quality of life is a broad term which includes economic, political, cultural and spiritual factors in addition to health. Clinicians are concerned with health related quality of life. Most health related quality of life will include physical, social, mental health and general health perceptions[5].

Musculoskeletal disorders are associated with some of the poorest quality of life issues. Quality of life scores in arthritis is poor (78.5) than gastrointestinal (69) Lung diseases (52.5) and cardiovascular diseases (37) High scores for pain indicate poor quality of life[6].

Methods: It was a cross-sectional observational study conducted in a tertiary care health center in central India. 370 consecutive patients who had arthritis were selected as per inclusion and exclusion criteria. Institutional research and ethical committee approval was obtained prior to the study. Informed consent was obtained from each patient to participate in the study was obtained. Inclusion criteria is subjects between ages of 18 and 70 years and subjects

diagnosed as suffering from various types of arthritis by orthopaedicians, rheumatologists and physicians and Exclusion criteria is patients with presence of psychosis, substance use disorders, and mental retardation.

Procedure: Socio-demographic and clinical data were obtained and meticulously documented on a specially prepared Performa. The following psychological instruments were used to obtain information about pain and quality of life in every case. The Investigator was not involved in the management of the cases.

Visual Analogue Scale: Pain was assessed using a linear visual analogue scale ranging from 1 to 10. For pain intensity, the scale is most commonly anchored by "no pain" (score of 0) and "pain as bad as it could be" or "worst imaginable pain" (score of 100 [100-mm scale]). Using a ruler, the score is determined by measuring the distance (mm) on the 10-cm line between the "no pain" anchor and the patient's mark, providing a range of scores from 0–100. The pain VAS is self-completed by the respondent. The respondent is asked to place a line perpendicular to the VAS line at the point that represents their pain intensity[7].

WHOQOL-BREF: It contains a total of 26 questions to provide broad and comprehensive assessment one item from each of the 24 facets contained in WHOQOL-100 has been included. In addition 2 items from overall quality of life and general health has been included. Each item is measured on a Likert scale ranging from 1-5. Raw scores obtained from each of the four dimensions are transformed into WHOQOL-100 standard scores by means of a key provided. Scores from each dimension is added up to obtain a summary score[8].

WHOQOL BREF: Higher scores denote higher quality of life and vice versa.

Statistical Analysis: Obtained data were subjected to statistical analysis using SPSS software version 20.0. Correlation was found by Pearson product moment correlation.

Results: In our study, out of total 370 cases of arthritis almost two thirds were females (64%) and (36%) were males. 78% were urban dwelling. 90% were married but a substantial number were widowed (8%), 65% were unemployed, 59% belonged to nuclear families. 55% belonged to low economic status. Three quarters of the patients (75%) had primary/secondary education. 60% of Rheumatoid Arthritis (RA) cases were below 50 years of age while 66.5% of Osteoarthritis cases were above 50 years of age. Distribution of the subjects according to the age and type of arthritis is shown in table no. 1.

Table 1: Distribution of the subjects according to the age and type of arthritis

Age in years	Rheumatoid Arthritis(n=30)	Osteoarthritis (332)	Others (n=8)
< 40	9	14	1
41-50	9	94	2
51- 60	10	114	4
≥ 60	2	110	1
Total	30	332	08

In our study, out of total 370 subjects maximum 203 (54.8%) subjects had WHOQOL-BREF scores between 200 – 300 and 05 (1.3%) had minimum WHOQOL-BREF scores between 00–100. Out of total 370 subjects 153 (41.3%) subjects had Visual Analogue Scale between 0-3 and 215 (58.1%) subjects had Visual Analogue Scale between 3 to 7 and only 02 (0.05%) subjects had Visual Analogue Scale between 0-3. On applying Pearson Product Moment Correlation between both the scores pain was found to be negatively correlated with quality of life. (r 0.32 P 0.0001) Distribution of the subjects according to the quality of life scores (WHOQOL BREF) and pain score (Visual Analogue Scale) is shown in table no. 2.

Table 2: Quality of life scores (WHOQOL BREF) and pain score (Visual Analogue Scale)

Quality of life scores WHOQOL BREF	No. of Subjects n=370 (%)	Pain Score (Visual Analogue Scale)	No. of Subjects n=370 (%)	Significance
0 – 100	05 (1.3%)	0-3	153(41.3%)	R value 0.32
101 -200	154(41.6%)	3-7	215(58.1%)	P value 0.0001
201 -300	203(54.8%)	7-10	02(0.05%)	
>300	08(02.1%)			
Total	370		370	

*WHOQOL BREF: Higher scores denote higher quality of life and vice versa.

Out of total 370 subjects maximum 202 (54.5%) subjects had duration of disease less than 2 years and minimum 23 (6.2%) subjects had duration of disease more than 6 years. On applying Pearson Product Moment Correlation between WHOQOL-BREF scores and duration of disease, quality of life was found to be negatively correlated with the duration of the disease in arthritis patients (r -- 0.17 P 0.001). Distribution of the subjects according to the quality of life scores (WHOQOL BREF) and duration of disease is shown in table no. 3.

Table 3: Quality of life scores (WHOQOL BREF) and duration of disease

Quality of life scores WHOQOL BREF	No. of Subjects n=370 (%)	Duration of disease (years)	No. of Subjects n=370 (%)	Significance
0 – 100	05 (1.3%)	<2 years	202(54.5%)	R value 0.17 P value 0.001
101 -200	154(41.6%)	2-4 years	91(24.5%)	
201 -300	203(54.8%)	4-6 years	54(14.5%)	
>300	08(02.1%)	>6 years	23(6.2%)	
Total	370	Total	370	

*WHOQOL BREF: Higher scores denote higher quality of life and vice versa.

Out of total 370 subjects 86 (23.2%), 150 (40.5%) and 134 (36.2%) subjects had mild, moderate and severe type of disease respectively. On applying Pearson Product Moment Correlation between (WHOQOL BREF) scores and severity of arthritis, quality of life was found to be negatively correlated with the severity of disease in arthritis patients (r -- 0.11 P 0. 045). Distribution of the subjects as per the quality of life scores (WHOQOL BREF) and severity of disease is shown in table no. 4.

Table 4: Quality of life scores (WHOQOL BREF) and severity of disease

Quality of life scores WHOQOL BREF	No. of Subjects n=370 (%)	Severity of disease	No. of Subjects n=370 (%)	Significance
0 – 100	05 (1.3%)	Mild	86(23.2%)	R value 0.11 R value 0.045
101 -200	154(41.6%)	Moderate	150(40.5%)	
201 -300	203(54.8%)	Severe	134(36.2%)	
>300	08(02.1%)			
Total	370		370	

*WHOQOL BREF: Higher scores denote higher quality of life and vice versa.

Discussion: Musculoskeletal disorders are some of the common and important conditions that afflict humans and exact significant toll in terms of restricted function, pain, loss of work, loss of self esteem, helplessness and reduced quality of life.

In a study conducted by Taylor et.al in 2004, they concluded that there was significant correspondence between this and each domain (Pain and duration of disease) on the WHOQOL-BREF, suggesting that when scores in these domains does change, it represents meaningful change[9].

Pain also contributes to the poor quality of life in arthritis patients. In the present study, higher pain scores were found correlated with the poor quality of life which was ascertained by Visual Analogue Scales. This is in conformity with others[10-13].

In a study conducted by Bedi et. Al in 2005, they concluded that Disease activity had a negative influence on the physical and psychological domains[14].

In the present study, duration of the disease was found to be negatively correlated to quality of life. Matcham et al found in a meta-analysis of 31 studies. Severity of illness was also found to be negatively correlated to illness severity and long duration[15].

Lot of similar type of studies showed similar type of correlation between quality of life and pain, duration and severity of disease in arthritis patients by using different types of quality of life measuring scales [16,17].

Conclusion: The present study had limitations of a hospital based investigation as it may not reflect the picture at the population level. Also, instead of

screening instruments structured interviews would have been useful in establishing clinical diagnosis. Our findings indicate that WHOQOLBREF has adequate role in patients with RA and may be a useful means of assessing treatment effects. But considering the fact that pain, duration and severity of disease have much effect on health related quality of life as syndromal diagnoses this study can be considered to be of some value.

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