Quality of life (QOL) among people between 30 to 60 years of age with acute Arthralgia.
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Abstract: Introduction: The commonly used measurements of health are in terms of mortality, morbidity, disability etc. However these measurements do not project the impact of disease on daily activities, quality of life of people with the disease, behavior of people, satisfaction levels of people with their disease. A measurement which gives the objective evidence of satisfaction in life lived by the people is needed which is given by Quality of Life (QOL). The World Health Organization Quality of Life Group defines quality of life as "individuals' perceptions of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns(1). This present study focuses on the QOL among people who had any joint pain or multiple joints pain and elicits their level of satisfaction regarding their health and life.

Methodology: This was a Cross sectional study done on 100 people between age 30 to 60 years with any joint pain or multiple joints pain without swelling in the past two weeks and were relatives of patients visiting/staying at the hospital, at a rural health centre in Vellore. The Convenient sampling technique was used to obtain the sample. The study tool WHO-BREF questionnaire was administered by the interviewer. Data entry was done with Epidata and data analysis by SPSS. Results: Physical health was not statistically significant on all four domain of QOL with respect to age, gender, socioeconomic status and marital status and joint pain duration. Age and marital status were found to be statistically significant by Wald chi square test with (p value 0.004) (p value 0.025) respectively in social relationships domain. Socio economic status was found to be statistically significant in environmental support domain with (p value 0.012). There was no statistically significant difference between people with joint pain greater than 3 years and less than three year in QOL. Discussion: Further studies, national and state new policy and program initiatives needed to improve QOL among people with musculoskeletal disorders and chronic degenerative disorders.

Keyword: quality of life, arthralgia, arthritis

Introduction: There are various measurements of health. The commonly used measurements of health are in terms of mortality, morbidity, disability etc. However these measurements do not project the impact of disease on daily activities, quality of life of people with the disease, behavior of people, satisfaction levels of people with their disease. Hence a measurement which gives the objective evidence of satisfaction in life lived by the people is needed which is given by Quality of Life (QOL). The World Health Organization Quality of Life Group defines quality of life as "individuals' perceptions of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns(1). This present study focuses on the QOL among people who had any joint pain or multiple joints pain and elicits their level of satisfaction regarding their health and life.

Joint pain or Arthralgia is one of the common morbidity occurring as age advances. Arthralgia refers to joint pain, whereas arthritis refers to inflammation of the joints. Swollen joints can be painful, stiff, and difficult to move. Arthralgia can be a symptom of arthritis or can be the result of an injury, disease, or infection. The common causes of joint pain are acute joint injury, chronic degenerative disorders and other causes. The acute joint injury or inflammation could be due to trauma which amounts to 12% of the prevalence of osteoarthritis in United States(2), local sepsis in joints, rheumatic fever, bursitis etc. The chronic joint pain conditions include degenerative disorders like osteoarthritis, rheumatoid arthritis, gout, ankylosing spondylitis, psoriatic arthritis etc. The prevalence of various types of arthritis varies greatly depending on the definition used, age, sex and geographical area studied. The age- and sex-standardized incidence rate from the Fallon Community Health Plan in Massachusetts, United States was highest for knee osteoarthritis 240/100,000 person-years, with intermediate rates for hand osteoarthritis (100/100,000 person-years) and lowest observed rates for hip osteoarthritis (88/100,000 person-years)(3). The prevalence Osteoarthritis is one of the common musculoskeletal disorders in ageing people(4,5). The osteoarthritis prevalence estimates are 9.6% of men and 18% women of age more than 65 years in the world(6). The prevalence of rheumatoid arthritis among adults was 0.5% in South East countries like Japan, Korea, China(7).

The prevalence of rheumatic diseases and osteoarthritis and various other joint pain conditions in India among adults were studied in Pune showed 29% prevalence of osteoarthritis, 10% inflammatory arthritis, 0.5% rheumatoid arthritis, 0.12% gout, 0.9% unclassifiable inflammatory arthritis. Also 5.9% of knee pains did not have any clinical evidence of osteoarthritis(8). The community prevalence of rheumatoid arthritis above 18 years of age in India from a study done in Delhi showed 0.75%(9).
Before developing chronic osteoarthritis there is a phase of intermittent joint pain with or without inflammation/swelling during which people tend to do adjustments in life style to compensate the pain. This could happen because of structural lesions in the joints which could cause pain or no pain(10). A study done in United States to find the presence of structural lesions in joints among people without osteoarthritis found osteophytes, cartilage damage and bone marrow lesions among people without osteoarthritis. However the structural lesions were found in 90-97% in people with pain and 86-88% among people with painless knees(10). The higher the age, the higher the prevalence of all types of abnormalities detected by MRI.

The impact of joint pain in the quality of life is more when compared to those without joint pain and those with other chronic conditions. The Quality of life of people with chronic conditions worsens if they have a joint pain. This is evidenced from a study done in United States by national health interview survey. The study showed that there was a difference in social participation , psychological stress between no arthritis and arthritis patients and the difference widened when arthritis patients were compared with those having arthritis additional to one chronic condition(11).

In a study done on patients with osteoarthritis at Korea it was found that those patients with low vitamin D levels had poor QOL scores than those with normal vitamin D levels(12). In a study done with WHO-BREF questionnaire for people over 16 years of age in Iran it was found that the mean score for all the 26 questions were above 3except for financial support and leisure activity(13). In a study for health care staff in north eastern part of Iran it was found that the mean scores for all questions were above 3 except for financial support and leisure activity(14).

2: Justification:
The musculoskeletal disorders occupy the top 25 causes of lost DALYs for the year 2010 and low back pain ranks within first 10 causes for lost DALYs. Osteoarthritis amounts to one among the ten disabling diseases in the world(6). Osteoarthritis occupies 38th rank in lost DALYs in South East Asia. (7). The various studies done over causes of osteoarthritis showed presence of structural lesions, acute injury as causes of arthritis(2, 10). The occupation farming carried 4.5 times risk of osteoarthritis if done for 1 to 9 yrs and 9.3 times risk if done for more than 10 yrs(6). The effect of osteoarthritis are limitations of movement and reduction in performance of daily activities(6). Usually, the quality of life of people with joint pain is studied before and after a major surgical procedure. The present study was done as there were few evidences available regarding the prevalence of various types of arthritis and quality of life of people with joint pain in south India.

Objective: To assess the quality of life (QOL) among 30-60 yr old people with any joint pain by WHOBREF at a rural health centre, Vellore.

Methodology:
Study setting: The study was conducted at the Community Health and Development (CHAD) hospital, a rural health centre run by the Department of Community Health, Vellore during the period December 2015 and January 2016. Sample size: (4x50x50/10x10) = 100. As previous studies were not done on arthritis using WHO QOL BREF in the southern India the prevalence of better QOL was considered 50 % to calculate sample size.

Inclusion criteria: People within 30 to 60 yrs of age with any joint pain/multiple joint pain with or without swelling in the past two weeks. There was no exclusion criteria adopted.

Study design: This was a Cross sectional study done on 100 people between age 30 to 60 years with any joint pain or multiple joints pain with/without swelling in the past two weeks and were relatives of patients visiting/staying at the hospital, at a rural health centre in Vellore.

Exclusion criteria: nil

Sampling technique: Convenient sample. The relatives of patients were approached and enquired if they have had joint pain with or without swelling in the past two weeks.

An initiative of The Tamil Nadu Dr. M.G.R. Medical University University Journal of Medicine and Medical Specialities
Results:

Demographic characteristics of the study population:
Table 1: Demographic characteristics of study population:
<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>percentage</th>
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<tbody>
<tr>
<td>females</td>
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<td>97%</td>
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<tr>
<td>males</td>
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</table>

<table>
<thead>
<tr>
<th>Age</th>
<th>Frequency</th>
<th>percentage</th>
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<tr>
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<td>6</td>
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<td>30-40</td>
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<td>41-45</td>
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<td>25%</td>
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<tr>
<td>51-55</td>
<td>16</td>
<td>16%</td>
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<tr>
<td>56-60</td>
<td>27</td>
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<table>
<thead>
<tr>
<th>Marital status</th>
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<tbody>
<tr>
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<td>69%</td>
</tr>
<tr>
<td>Widowed/divorced</td>
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<td>30%</td>
</tr>
<tr>
<td>Unmarried</td>
<td>3</td>
<td>3%</td>
</tr>
</tbody>
</table>

There were 100 study participants (Table1) and 97 were females and 3 were males and they constitute 97% and 3% respectively. The proportion of people within 30 to 35 yrs of age were 5%, 36 to 40 yrs were 15%, 41 to 45 yrs were 12%, 46 to 50 yrs were 25%, 51 to 55 yrs were 16% and 56 to 60 yrs were 27% respectively. There were 69% married people, 30% were widow/widower and 1% unmarried people in the study population.

Table 2: socio demographic characteristics:

The proportion of people in the study population who did not get school education was 40%. The proportion of people who completed primary school was 36%, middle school was 16%, high school was 7%, and higher secondary school was 1% (table 2).

Among the study population 63% were homemakers, 2% were unskilled laborers, 20% were semi skilled laborers and 4% were skilled laborers. The socio economic status was calculated according to modified kuppusamy scale 2015 income levels. All the study participants belong to lower middle and lower income groups. There were 9% people in lower middle income group, 52% in upper lower income group and 39% in lower income group.

Co-morbidities and Joint pain duration:
Table 3: Co-morbidities and Joint pain duration:

The history of presence of chronic diseases like Diabetes and Hypertension among the study population showed that among the 100 people 23% of people had history of Diabetes and 29% of people had history of hypertension. Among the study population 25% had joint pain less than or equal to one year duration, 37% of them had two to three years duration and 38% had more than three years duration (table 3).

WHO-BREF quality of life questions:
Table 4: Quality of life scores:

There were 26 questions eliciting four domains of life. The mean scores of all the questions and the standard deviation and number of non responses are given in the table 4. Among the 26 questions 18 questions were answered by all the study participants. The highest mean score (high satisfaction levels) was 4.10 present for the question satisfaction about body image and lowest mean score (low satisfaction levels) was 1.31 present for the question about satisfaction in sex and it was not answered by 63% of people. The final mean score for all the 26 questions were 2.96 which means average satisfaction levels.
Multivariate analysis on socio demographic variables and the four domains by linear regression model (table 6) showed that after adjusting for all the confounding factors socioeconomic status was found to be statistically significant in environmental support domain with Wald chi square (p value=0.012) which means that people of higher quality of life on environmental support domain than people of lower socioeconomic status.

Age and marital status were found to be statistically significant with (p value=0.004) respectively in social relationships domain and it means that married people have a better quality of life than who are single. There was no statistically significant difference between people with joint pain greater than 3 years and less than three years.

**Conclusion:** Among people with Arthralgia the total scores of psychological domain 49.850(SD15.60) and environmental domain 55.270(SD10.69) scores were better than other domains indicating better satisfaction levels in those domains and poor satisfaction levels on physical health and social domains. However after confounding for all factors it was observed that people of age more than 50 years have lower quality of health in social relationships. The married people and people of higher socioeconomic status had a better quality of life than others in social relationship and environment domains. Joint pain duration had no significant difference on quality of life.

**Discussion:** Though enjoyment and meaningfulness in life scores are low, participants had high satisfaction levels in terms of their bodily appearance and not so frequent feelings of negative thoughts and these could be the reasons for the higher scores in psychological domain. Also the participants had good satisfaction levels regarding their living places and environment irrespective of their income or economic status. The physical domain was third among all four domains denoting that participants have difficulty in doing motor activities, less energy for daily activities and less sleep satisfaction. This could be due to the joint pain they undergo and restriction of movements when performing the physical activities. The social domain scored last and it could be due to minimal questions for eliciting that domain and 63% participants didn’t respond or answered ‘no sex’ which was considered not applicable as answer to the particular question number 21. The final analysis showed that age more than 50 years had lower QOL in social relationships and it could be due to joint pains restricting mobility and thereby affecting social relationships. The married people had better QOL in social relationships and it could be due to the family being the functional unit of the society and there is a need, chance to have good social relationships. The people from upper socioeconomic status have better QOL in environmental support domain. Although everyone felt that the environment where they stay is safe and good and money was not adequate people from upper socioeconomic levels enjoyed a better and comfortable transport,
Easy access to health services which could have led to the above result.

**Limitation:** The males were smaller in number because females were allowed to stay in the hospital along with patients. Small sample size could have less precise estimates. The QOL obtained represents the quality of life of people with joint pain who are able to come to hospital. It misses the QOL of people who could not come to hospital because of their debility. These results are applicable to people with any joint/multiple joint pains that were mobile enough to visit a hospital. However these study findings could not be applied to the general population due to the above limitations.

**Recommendations:**

Further studies with large sample size are needed to measure the QOL among people with joint pains and musculoskeletal problems. In India there is no national program for prevention, control, rehabilitation of musculoskeletal disorders and chronic degenerative disorders. Policy decisions and newer national and state wise initiatives have to be taken to improve the quality of life of people with Arthralgia in all the four domains and mainly in physical domain.

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