Health-Related Quality of Life of Patients with Rheumatoid Arthritis Attending in a Rheumatic Centre, Lalitpur, Nepal

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ABSTRACT

Introduction: Rheumatoid Arthritis (RA) is a systemic autoimmune disorder, whose major distinctive feature is chronic, symmetrical and erosive inflammation of the synovial tissue of joints which has a significant impact on patients' physical, mental and social well-being, resulting in low health-related quality of life. The objective of the study was to find out the health-related quality of life of patients with rheumatoid arthritis in a selected rheumatic Centre, Lalitpur, Nepal.

Methods: A descriptive cross-sectional study was carried out among 115 RA patients attending rheumatic center by using a pretested structured interview schedule. Non probability purposive sampling technique was used. During data collection privacy and confidentiality was ensured. Data were analyzed through descriptive and inferential statistics using SPSS version 16.

Results: In this study, the mean score of the overall health-related quality of life was 55.84 ± 13.43. The mean physical component score was 55.96 ± 13.61 and the mental component score was 45.42 ± 13.84. Regarding association with the physical quality of life, age (p = 0.008) and type of family (p = 0.04) which were significantly associated. Regarding association with mental quality of life, age (p = 0.02), marital status (p = 0.03) and BMI (p = 0.001) which were significantly associated with mental quality of life.

Conclusions: The overall health-related quality of life of patients with RA was good. The physical health was good among rheumatoid arthritis patients while comparing with mental health.

Keywords: Health-related Quality of life, Rheumatoid arthritis, SF-36v1

INTRODUCTION

Rheumatoid Arthritis (RA) is a chronic systemic autoimmune disorder which causes inflammation of the synovial tissue of joints. The severity of the joint disease may fluctuate over time, but progressive development of various degrees of joint destruction, deformity, and disability is the most common outcome of the disease. It occurs at any time of life but its incidence tends to increase with age, peaking between the fourth and sixth decade. Women are affected two to three times more often than man.[1] Worldwide 0.3% to 1% general population is affected by RA. WHO estimated that 50% of RA patients in the developed countries are unable to hold down a full-time job.[2] Over 400,000 (1%) people in the United Kingdom (UK) have RA.[3] Estimated of 4,56,000 Australians (1.9%) have RA, affecting 2.3% of females and 1.5% of males.[4] Prevalence of RA was 2.28% - 0.7% comparing urban and rural areas.[5]

Patients diagnosed with RA have a significant decrease in health-related quality of life resulting from pain, impaired physical function and fatigue.[6] Depression is more common in RA patients than in healthy individuals.[6] Lower self-efficacy, greater fatigue, greater functional disability, lower social support, more co-morbidities, lower-income level, being female, living in rural settings, and increasing age significantly affect health-related quality of life of the patient.[7] A study in Nepal on 184 rheumatoid arthritis patients showed 163 (88.59%) were females, thus making male-female ratio as 1:7. The mean age of patients was 46.5 ± 13.4 (11 - 86 years) and the median duration of disease was 24 months.[8] However, no significant studies were found in Nepali context about the health quality of life of a patient with RA.

The general objective of the study was to find out the health-related quality of life of patients with rheumatoid arthritis. The specific objectives were to assess the level of health-related quality of life in physical health components and mental health components and to measure the association between health-related quality of life among the patient with RA and selected variables. This study might help health care providers aware about the need for care in holistic approach such as physical, mental and social which would directly facilitate the patients to maintain best health-related quality of life with a current disease condition.

METHODS

The descriptive cross-sectional research design was adapted to find out the quality of life of patients with RA attending in a rheumatic Centre, Lalitpur, Nepal. The study was conducted at the outpatient department of Aarogya Health Home, Arthritis & Rheumatic Diseases Treatment Centre, Jawalakhel, Lalitpur, Nepal. By reviewing patient registration, it was found that weekly 35 RA patients visit in the Centre on an average. The data was collected within four weeks of period with 115 sample size. The sample size was calculated using Cochran's formula[9] with a finite population with a prevalence rate of 50%, the margin of error 5% at 95% confidence level and adding a 10% non-response rate. Non- probability purposive sampling technique was used to select RA patients more than 18 years old. Ethical approval was obtained from the Institutional Review Committee (IRC) Tribhuvan University, Institute of Medicine. Formal permission was obtained from Aarogya Health Home, Arthritis & Rheumatic Diseases Treatment Centre, Jawalakhel, Lalitpur, Nepal. The objective of the study was explained and written informed consent was obtained from each respondent. Privacy was maintained by interviewing the individuals in a separate place. Data was collected by face to face interview by using a standardized structured questionnaire ensuring their authority to leave the interview without any explanation. Confidentiality was maintained by assuring respondent that the information provided by them will be used only for the study purpose.

Each respondent was interviewed for 25 to 30 minutes. Nepali version of pretested structured interview schedule was used. After completion of the interview, height and weight were taken and BMI was calculated. Respondents were weighted barefoot after removing heavy clothing (if any). The anthropometric instruments were cross-checked periodically. For taking height respondents were asked to stand barefoot against a wall, marking on the wall was done at the level of scale placed across the top of the head. The height was measured by using measuring tape from ground to the mark. Data collection was conducted from 2nd September to 28th September 2018.

*Sample size (n) = $(z^2 pq)/d^2$ (Cochran's formula[9])

Table 1. Mean Score of Various Domains of Quality of life of Respondents (N = 115)

Domains	Item	Minimum	Maximum	Mean	Std. Deviation
Physical Functioning	10	0	100	44.04	30.84
Role Limitation due to Physical Health	4	0	100	65.21	45.96
Pain	2	0	100	58.15	32.12
General Health	5	0	100	56.43	12.63
Role Limitation due to Emotional Problems	3	0	100	23.76	42.29
Energy/ Fatigue	4	0	100	54.3	25.14
Emotional Well-being	5	0	100	32.24	19.25
Social Functioning	2	0	100	71.36	27.01

Table 2. Physical and Mental Component Score of the Respondents (N = 115)

Components	Minimum	Maximum	Mean	Std. Deviation
Physical Component Score	28.13	77.5	55.96	13.61
Mental Component Score	23.25	79.25	45.42	13.84
Total Health Related Quality of Life (HRQOL)	17.75	79.67	55.84	13.43

Table 3. Association between Physical Component Quality of Life and Socio-demographic Characteristics

Variables	Level of HRQOL		Chi-Square	p-value
	Poor n (%)	Good n (%)		
Age				
18 - 40	9 (45)	11 (55)		
41 - 65	28 (38.4)	45 (61.6)		
66 +	2 (9.1)	20 (90.9)	9.68	0.008**
Sex				
Female	36 (36.4)	63 (63.6)		
Male	3 (18.8)	13 (81.3)	1.9	0.16
Marital Status				
Married	32 (34.8)	60 (65.2)		
Others	7 (30.4)	16 (69.6)	0.15	0.69
Occupation				
House maker	31 (34.8)	58 (65.2)		
Others	8 (30.8)	18 (69.2)	0.14	0.7
Type of Family				
Nuclear	21 (44.7)	26 (55.3)		
Joint	18 (26.5)	50 (73.5)	4.11	0.04*
Religion				
Hinduism	33 (32.4)	69 (67.6)		
Others	6 (46.2)	7 (53.8)	0.98	0.32
Education				
Up to secondary	21 (38.9)	33 (61.1)		
Above secondary	18 (29.5)	43 (70.5)	1.125	0.289

*p value < .05 = significant *significant **highly significant*

RESULTS

After collecting data, data were checked for completeness of the information. All the data were compiled, coded, classified manually on the same day of collection and transferred to Statistical Package for Social Science (SPSS-16version) for further analysis. Data were recorded as per guideline given by Rand SF36 version 1 tool. Descriptive statistics i.e. frequency, percentage, mean and standard deviation were used for analysis. Inferential statistics (chi-square test) was used to determine the association of quality of life of a patient with RA and selected variables. Statistical significance was set at 5% level of significance.

Based on demographic characteristics of respondents, 63.5% were from under age group 41 to 65 years with mean ± SD 53.94 ± 13.70. Likewise, most of the respondents (86.1%) were females. More than half of the respondents (53.9%) live in rural area. Highest proportions (80.0%) of the respondents were married. Similarly, almost half of the patient were literate (47%), among them 70.4% had at least primary level education. More than half (59.1%) belonged to a joint family.

Table 4. Association between Mental Component of Health-related Quality of Life and Socio-demographic characteristics

Variables	Level of HRQOL		Chi Square	p-value
	Poor n (%)	Good n (%)		
Age				
18 - 40	12 (60)	8 (40)		
41 - 65	60 (82.2)	13 (17.8)		
66 +	13 (59.1)	9 (40.9)	7.1	0.02*
Sex				
Female	74 (74.7)	25 (25.3)		
Male	11 (68.8)	5 (31.3)	0.25	0.61
Marital Status				
Married	72 (78.3)	20 (21.7)		
Others	13 (56.5)	10 (43.5)	4.51	0.03*
Occupation				
House maker	67 (75.3)	22 (24.7)		
Others	18 (69.2)	8 (30.8)	0.38	0.53
Type of Family				
Nuclear	32 (68.1)	15 (31.9)		
Joint	53 (77.9)	15 (22.1)	1.4	0.23
Religion				
Hinduism	75 (73.5)	27 (26.5)		
Others	10 (76.9)	3 (23.1)	0.06	0.79
Education				
Up to secondary	42 (77.8)	12 (22.2)		
Above secondary	43 (70.5)	18 (29.5)	0.78	0.37

*p value < .05 = significant *significant*

Disease-related characteristics of the respondents' shows that 50.4% had disease duration of five years or more with mean 6.09 ± 4.165 years. Regarding BMI, 17.4% were overweight and 27.8% were obese with mean 22.8375 ± 4.27 (BMI was calculated by using guideline given by Asia Pacific). Similarly, few respondents had thyroid and hypertension problems, 19.1% and 18.3% respectively. Among total respondents, 58.3% reported early morning stiffness and among them 56.7% had morning stiffness less than 14 minute's duration. Regarding drugs 90.4% were on NSAIDs, while all of the respondents were using Disease-Modifying anti-rheumatic drugs (DMARDs) and 45.2% were on steroids

DISCUSSION

In this study regarding the health-related quality of life the mean score of the dimensions of Rand-SF36v1 the highest score (71.36 ± 27.01) was obtained in the social functioning domain whereas the lowest score (23.76 ± 42.29) in role limitation due to emotional problem. This finding was contrast with the study conducted by Vilsteren et al. in which emotional role limitation had highest mean score.[9]

The finding related to the level of health-related quality of life of a patient with RA, the mean physical component score was 55.96 ± 13.61 and the mental component score was 45.42 ± 13.84. This shows that physical health is better than mental health. This finding contradicts to the study done by Uhm et al,[10] Matcham et al,[11] Hromadkova et al,[12] Liu et al,[13] in which physical component score was 49.96 ± 21.13; 34.1, 37.6 ± 9.8, 40.67 ± 10.86 respectively and the mental component score was 53.85 ± 24.18, 45.6; 45 ± 10, 59.14 ± 10.3 respectively.

In this study, total SF36 score was 55.84 ± 13.43 in contradict to the study by Abu et al[14] where total SF36 score was 45.69 ± 20.84. Regarding association between HRQOL domain of RA and socio-demographic characteristics of this study, physical health domain (p = 0.008) and mental health domain (P = 0.02) had statistically significantly associated with age of respondents and this finding is similar with the finding of the study by Hussein et al,[6] in which there was a significant association between physical functioning (P = 0.039), role functioning / physical (P = 0.039), energy / fatigue (P = 0.037) and age group. There was statistically significant association between

Table 5. Association between Components of HRQOL and Disease related Characteristics (n=115)

Variables	PCS				MCS			
	Poor n(%)	Good n(%)	χ2	p-value	Poor n(%)	Good n(%)	χ2	p-value
BMI								
Below 18.5 (Underweight)	6 (37.5)	10 (62.5)			6 (37.5)	10 (62.5)		
18.5-22.9 (Normal Weight)	39 (83)	8 (17)			39 (83)	8 (17)		
23-24.9 (Overweight)	13 (65)	7 (35)			13 (65)	7 (35)		
25 and above (Obese)	15 (46.9)	17 (53.1)	4.4	0.2	27(84.4)	5 (15.6)	15.64	0.001**
Duration of Rheumatoid (Years)								
5 years and less	20 (35.1)	37 (64.9)			42 (73.7)	15 (26.3)		
6 - 10	15 (36.6)	26 (63.4)			29 (70.7)	12 (29.3)		
11 and above	4 (23.5)	13 (76.5)	0.98	0.61	14 (82.4)	3 (17.6)	0.84	0.65

p-value < .05 = significant *significant **highly significant

the mental quality of life and marital status (P = 0.03). Similar result was found in the study of Hussein et al,[6] in which role limitation due to emotional problem (P = 0.003) and emotional wellbeing (P = 0.007) were significantly associated with marital status. There was strong statistical significant association between mental quality of life and BMI (P = 0.001) in this study. There was no any other study finding regarding association between mental quality of life and BMI.

In this study there is no significant association between the physical (P < 0.16) and mental (P < 0.61) quality of life and sex of respondents. Similar results were found in the study conducted by Hussein et al.[6] where there were no statistically significant association between physical and mental quality of life domain and sex. Regarding the association between the physical quality of life and marital status (P = 0.69). In contrast to this, study by Hussein et al[6] found a statistically significant association between marital status and mean the quality of life domain of physical functioning (P = 0.014), role functioning / physical (P = 0.001), energy / fatigue (P = 0.012), and pain (P = 0.036). Regarding the association between physical quality of life and BMI (P = 0.2) which means there is no statistical association between physical

quality of life and BMI. There was no any other study finding regarding association between physical quality of life and BMI.

CONCLUSIONS

This study concluded that the overall health-related quality of life of a patient with RA was good. The highest mean score was obtained in social functioning domain, while the lowest mean score was observed in role limitation due to emotional problems domain. Further, it was also observed that mental health quality of life was poor. In the physical component, the significant statistical association was found in age and type of family and in mental component, a significant association was found in age, marital status and BMI.

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