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Research Article

QUALITY OF LIFE AMONG SOUTH INDIAN PATIENTS WITH RHEUMATOID ARTHRITIS

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ABSTRACT

Introduction: Rheumatoid arthritis (RA) is a chronic disorder couldn't be completely cured by the current medical treatment and can lead to reduced quality of life(QOL).The aim of the study is to assess the QOL. Thus, a need based intervention can be prepared for self-care management skill.
Methods: This cross sectional study was performed on 111 patients in South India using convenient sampling. The collected data included demographic, clinical characteristics and Short form (SF)36.
Results: The mental and physical components were assessed using SF 36.The mean (S.D) of physical components were PF 48.329(25.69), RL -PH 31.76(42.1) , Pain 50.56 (20.77), GH 46.44 (15.29) and mental components were RL-EH 43.84(46.92), Energy 54.19(16.73), EW 61.19(16.84), SF 56.08(23.16). Association found with age, education, income, marital status, DAS, global functional status and duration of illness with the components of QOL atP> 0.05 level of significance.
Conclusion: The physical components of QOL are lower with RA patients. It important to know the QOL to plan for better care provided by the health care professionals.

INTRODUCTION

A physically active individual lives much healthier and active life than people who are physically inactive. This is true for everyone but especially for people with rheumatoid arthritis. Rheumatoid arthritis (RA) is a chronic, progressive, systemic, autoimmune disease associated with inflammation of the synovial joints characterized by episodes of remission and flare-ups that have a major impact on the patient's physical, emotional and social well-being and also the sexual functioning. (Kremers, 2004) (Helmick 2008) (Tristano AG, 20140). It can result in significant joint destruction, disability and excess mortality if untreated or inadequately treated. (Russell, 2008) (Solomon *et al*., 2003) (Salaffi *et al*., 2003). RA is traditionally considered to be a disease with a major impact on all aspects of quality of life. (Tander *et al*., 2008)

Daily pain, stiffness, fatigue, and physical disability are common features of RA. These problems, and the way patients cope with them, can affect their quality of life (QOL) (Utsinger P *et al*, 2000). RA has a significant negative impact on the ability to perform daily activities, including work and household tasks, and health- related QOL. RA causes significant physical (work related disability) psychological and social disability, decreased QOL and co-morbidities besides being an economic burden(Mould *et al*., 2011).

Having a rheumatic disorder requires ongoing psychosocial adjustment and behavioral change to deal with fluctuations, pain, restricted mobility and fatigue in daily life (Homer D, 2005). The results of two multinational surveys showed that the RA patients had a substantial negative effect on many aspects of their lives (work productivity, daily routines, participation in social and leisure activities) and emotional well-being (loss of self-confidence, feelings of detachment, isolation). Daily pain and fatigue were a paramount issue. (Strand *et al*., 2015) (Ryan, 1996). Chronic pain makes performing daily activities like cleaning the house, dressing, or looking after children more difficult and painful. (Arthritis Research UK Pain Center, 2012). Many people describe fatigue as severe weariness and overwhelming exhaustion that doesn't get better with sleep. (Repping-Wuts, *et al*, 2009)

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CDC also reported that anxiety was almost twice as common as depression. Most people who had depression (85%) also had anxiety. Depression has been shown to be associated with reduced health status, as well as higher pain and fatigue levels and reduced quality of life (Scott *et al*, 2010).

QOL assessments are particularly important in the absence of a cure for RA (Russell, 2008) It can help in finding out the way to improve the quality of life measures in this disabling illness.

METHODS

A cross sectional design was adopted for this study. The objectives of the study were to assess the Quality of life of patients with Rheumatoid arthritis and to associate the selected baseline and clinical variables with the quality of life. The setting of the study was Rheumatology OPD of tertiary care hospital, Bangalore, south India. In this study 111 sample were selected using convenient sampling. The inclusion criteria for the study were all patients who were diagnosed to have RA by the American Rheumatism Association 1987 revised criteria, adults with the age above 18 years, duration of illness above 2 months. Patients who were disabled and use the assistive ambulatory device were excluded. The tools used for the study were demographic and clinical characteristics and SF -36. The demographic characteristics of the subjects include age, gender, education, marital status, occupation, income and family history. And the clinical characteristics of the study subjects include Disease activity score, Global functional status, duration of illness and Co morbidities. QOL was assessed by SF-36 consists of 8 components which includes physical functioning, role limitations due to physical health, role limitations due to mental problems, energy/fatigue, emotional wellbeing, social wellbeing, pain and general health. Ethical clearance from Institutional Ethics Committee and written informed consent from the participants of the study was obtained.

RESULTS

Data was analyzed using SPSS version 22. The descriptive and inferential statistical methods used for analysis were mean, standard deviation, number, percentage and ANOVA (Kruskalwallis), Chi square and fried man Chi square.

The data presented in table -1 showed that out of one hundred eleven subjects, majority (33.3%) of them were in the age group of 41-50 years and females were (86.5%) and males were only one fifth. Regarding education majority (22.5%) had high school education and post graduates were very minimal (7.2%). Most of them (82%) were married. Majority (76.6) of them were involved in sedentary work and very few (9.9%) were doing heavy work. Almost half (43.2%) of the patients had income of Rs.10000-20000. And one fourth of them (24.3%) had a family history of RA.

The data presented in Table-2 reported the clinical characteristics. Regarding the Disease activity score (DAS) majority (34.2%) had low disease activity and (29.7%) had high disease activity score. Majority of them (70.3%) were from Class I Global functional status. Regarding the duration of illness majority (38%) had 1 year- 3 years, (37%) had 3 years - 5 years. Almost half (45.9%) of the subjects were with co morbidities.

Table 1 Description of demographic characteristics of the study subjects N=111

No	Baseline variables	Frequency (f)	% Distribution
1	**Age in years**		
	a.21-30	7	6.3
	b. 31-40	23	20.7
	c.41-50.	37	33.3
	d.51-60	27	24.3
	e .> 60	17	15.3
2	**Gender**		
	a.Male	15	13.5
	b. Female	96	86.5
3	**Education**		
	a. Post graduate	8	7.20%
	b.Under graduate	19	17.1
	c.Intermediate / Hig sec school/PUC	16	14.4
	d .High school	25	22.5
	e .Middle education	17	15.3
	f. Primary education	13	11.7
	g. Illiterate/No formal education	13	11.7
4	**Marital status**		
	a. Married	91	82
	b. Unmarried	2	1.8
	c. Widow/ Widower	15	13.5
	d.Divorced/ Separated	3	2.7
5	**Occupation**		
	a. Sedentary worker	85	76.6
	b. Moderate worker	15	13.5
	c. Heavy worker	11	9.9
6	**Income**		
	a. ≥10000	37	33.3
	b.10001-20000	48	43.2
	c.20001-30000	14	12.6
	d.30001-40000	11	9.9
	e.≤40001	1	1.9
7	**Family history of RA**		
	a. Yes	27	24.3
	b. No	84	75.7

Table 2 Description of clinical characteristics of the study subjects N=111

No	Clinical characteristics	Frequency (f)	% Distribution
1	**Disease Activity Score**		
	a. Remission	19	17.1
	b. Low disease activity	38	34.2
	c. Moderate disease activity	21	18.9
	d.. High disease activity	33	29.7
2	**Global functional status**		
	a. Class I	78	70.3
	b. Class II	25	22.5
	c. Class III	8	7.2
3	**Duration of illness**		
	a.≥1 Year	9	8.1
	b. 1Year 1 mon- 3 years	42	37.8
	c. 3 Years 1 month - 5 years	41	36.9
	d. < 5 Year	17	15.3
4	**Comorbidities**		
	a.Yes	51	45.9
	b.No	60	54.1

The data on Fig-1 showed the mean (SD) QOL of RA patients. In the physical component the role limitations due to physical health had a very low mean (SD) of 31.76(42.1). And in the mental component the role limitations due to mental health had a very low mean (SD) of 43.84(46.9). The data on the Table-3 showed the association between the demographic, clinical characteristics and the QOL of RA subjects. The commonly used ANOVA (Kruskalwallis) and chisquare, Fried man Chisquare was helped to identify the association.

Table 3 Association between selected demographic, clinical characteristics and QOL

Characteristics	Physical functioning	RL-PH	RL-EH	Energy/ Fatigue	Emotional wellbeing	Social wellbeing	Pain	General health
				Chi square (p value)				
				Selected Demographic characteristics				
Age in years	13.676 (0.03) *	5.173 (0.16)	5.86 (0.11)	0.72 (0.53)	1.346 (.26)	6.789 (0.07) *	4.392 (0.22)	3.584 (0.31)
Education	10.88 (.02)*	6.07 (0.194)	6.9 (0.14)	3.71 (.446)	7.93 (0.09)	7.171 (0.12)	11.332 (0.02)	8.222 (0.08)
Income	9.56 (0.008)*	8.93 (0.01)*	8.813 (0.01)*	5.402 (.006) *	8.87 (0.000)*	4.745 (0.09)	10.214 (0.006)*	6.5 (0.03) *
Marital status	510 (0.01)*	718 (0.35)	590 (0.03)*	465.5 (0.004)*	590 (0.03)*	603.5 (0.07)	553 (0.02)*	430.5 (0.001)*
				Selected Clinical Characteristics				
DAS	20.836 (0.00) *	8.838 (.032)*	13.61 (0.003)*	11.142 (0.00)*	9.459 (0.00)*	8.297 (0.04)*	20.331 (0.000)*	24.721 (0.001)*
Duration of illness	3.982 (0.26)	7.871 (0.04)*	7.063 (0.07)	0.198-(0.89)	255 (.85)	2.761 (0.43)	3.59 (0.3)	1.89 (0.59)
Global functional staus	15.547 (0.001) *	8.573 (0.014) *	11.88 (0.003) *	15.59 (0.001)*	13.817 (0.001) *	10.64 (0.005) *	22.71 (0.001) *	13.97 (0.001) *

*Significant at 0.05

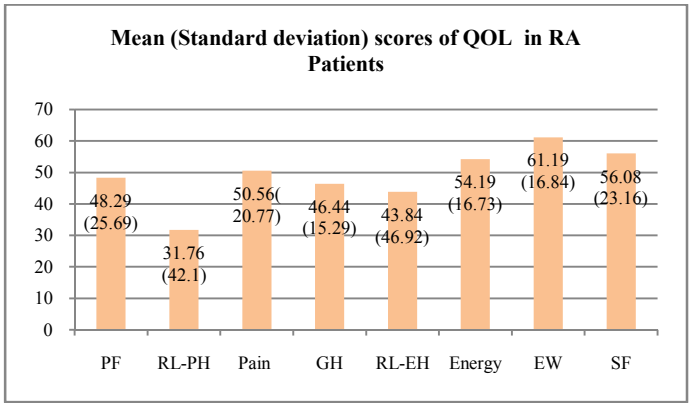

Fig1 Mean (SD) scores of Quality of life in Rheumatoid arthritis patients

(PF-Physical Functioning , RL-PH -Role limitation physical health, GH- General Health, RL-EH-Role limitation-Emotional health, Energy, EW-Emotional wellbeing ,SF-Social functioning)

There were four demographic characteristics ie age, education, income and marital status were found significant at < 0.05 level of Significance with different sub components of QOL. In the clinical characteristics DAS, Global functional status and duration of illness were found significant at < 0.05 level with different subcomponents of QOL.

DISCUSSION

Rheumatoid arthritis is a chronic condition but it is not usually life threatening. Because of the inherent unpredictability and progressive nature of the illness, the QOL can get affected. And there were very limited Indian studies done related to the QOL of RA patients.

In this study the mean (S.D) age was 47.5(11.7516) years which was very close to a retrospective observational study conducted in south India with the mean age of 47.6(12.6) of females and 47.1(14.4) years of males (Saeidkashefi, 2016) and Karnataka Rheumatoid Arthritis Comorbidity (KRAC) study subjects had a mean (SD) age of 48.1 (12.71) years (Chandrasekr *et al*., 2016) a Brazilian study with a mean age of 47.5years (ranging from 22 to 83 years), (Maria, 2014). The present study reflects the prevalence of rheumatoid arthritis is common in this age group of 35-50 years. This was supported by an American study (Lynda Martin, 2004).

In this study the female: male ratio was 6.4: 1 (F- 86.5 %, M- 13.5%). The similar proportion of gender were reported by the GLADAR study (Estel, 2008) (F- 85% and M- 15%) and also in a prospective study. (Licia Maria, 2010).

It is notable that the female: male ratio was 8:1 in an another study (Maria, 2014).

In this study majority had high school education, illiterates and primary education were 11.7 %. It was absolutely supported by Punjab Institute of Medical Sciences research (*Amarjit Singhetal*, 2015) and 38.7 % had college education which was lower than 45.7% reported in the above mentioned studies (*Amarjit*,2015)

In this present study most of them (82%) were married. A similar finding was reported (85.2%) (Adja *et al*, 2015) in Turkey and (88.9%) in a multi-center cross sectional study in China. (Li Liu, 2017).

Almost half (43.2%) of the patients had income of Rs.10000-20000. The findings were consistent with an Indian study evaluated the physical, psychosocial, and economic impact in RA. In that study the income was categorized with the annual income of Rs. 1,00,000- 1,50,000 (26%) and 1,50,000-2,00,000(18%) (Amita *et al*., 2006).

Majority (76.6%) of them were involved in sedentary work (House wife, tailor etc). It was highly supported with 74.6 %of home maker (Adja *et al*, 2015) in a descriptive study. Therefore, RA can lead to dysfunction in the roles of housewives, which in turn will cause loss of labor at home, resulting in an increase in the indirect costs of the disease.

And one fourth of them (24.3%) had a family history of RA. It was also consistent with the descriptive survey (20.3%) (Adja *et al*, 2015) and it was little higher than 14.8% reported in an Indian study (Amita *et al*., 2006).

Regarding the clinical characteristics, the mean (S.D) of Disease activity score was 4.33 (1.31). In few studies similar findings were found (4.0+ 1.4) (Adja *et al*, 2015) and (5 ± 1.17) (Amita *et al*., 2006).

The remission and high disease activity rate was 17.1 % and 29.7%. Both the values were consistent with the results (14.1% and 25.5%) of a research study in turkey (Adja *et al*, 2015). But low and moderate disease activity rates were 34.2% and 18.4%. Which was contrast to the values of the above mentioned study (14.1% and 42.7%) (Adja *et al*, 2015). As compared to the other studies the Global functional status (GFS) and duration of illness were varied in the present study. Regarding the GFS, there were many patients in Class II (52%), and class III (18%) (Rafael, 2012), Class II (41.3%), class III (16.3%) (Tae-Jin Lee, 2012) but in the present study class I (70.3%) was more.

Regarding the duration of illness, the mean (S.D) was 49.8(40.58) months (ie) 4.15years. Many subjects in other studies had 11.2(7.2) years, (Rania, 2016) 6. 7 years (Elizabeth K. Pradhan, *et al* 2007) and 7.29 years (Mathew *et al* 2009), which was higher than the present study subjects.

Almost half of the patients were observed with co morbidities in (45.9%) in the present study. It was supported by a prospective Indian study (44%) (AG Tembe, 2008) and a Turkey study (57.1%) (Adja *et al*, 2015)

The QOL of RA patients in mental health was better than physical health in the present study (Fig-1). Similar reports were found in a study conducted among 1056 patients in Netherland (Chorus,2003).In this study the QOL was assessed using SF-36 , the summary of physical and mental components of the present study were 44.26 and 53.82 respectively with the total QOL of 49.02. It was almost similar with 47.49 and 59.93, with the total QOL 52.47 of an another study with Iranian subjects (Saied Karimi *et al*, 2013). The 8 components of QOL (Fig 1) in the present study was highly supported by the Iranian study with the scores of PF(48.9), RL-PH (43), Pain(47.2), General health(48.4), Energy (55), EW (63.1) except Emotional health(58.9) and SF (63.4) (Saied Karimi *et al*, 2013).

While associating QOL with the demographic and clinical characteristics, there were significant association found between the demographic characteristics age, education, income and marital status with different components of QOL. It was highly supported by few studies. (Atapour J, 2002) (Zahra Monjamed *et al*., 2008). In the clinical characteristic DAS, GFS and Duration of illness also had association with different components of SF-36 QOL. Disease duration had a significant relationship with QOL in ananother similar study (Saied Karimi *et al*, 2013) (Atapour J, 2002).

CONCLUSION

This study showed relatively low quality of life is present with Rheumatoid arthritis patients in general. And also the females are mostly affected which can affect the total family system itself. Since it is a chronic health burden , self -care abilities can be improved by focusing on giving awareness regarding the management, thus can improve the quality of life among Rheumatoid arthritis patients .

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