

# A Survey Of Patient's Knowledge On Rheumatoid Arthritis

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## Abstract-

### BACKGROUND OF THE STUDY

Patient awareness in chronic diseases like Rheumatoid arthritis enable them to improve self-management, employ appropriate lifestyle changes and help to assume the responsibility for day-to-day disease management.

### OBJECTIVE

To determine the level of disease specific knowledge of Rheumatoid arthritis patients and its relationship to various socio-personal and clinical variables.

### METHODS

A cross-sectional study was conducted at the Rheumatology Clinic, Government Medical College, Kozhikode from 22nd March 2019 to 26th April 2019 among patients with rheumatoid arthritis. A semi-structured interview schedule was used to collect socio-personal and clinical data. A self-prepared Rheumatoid Arthritis awareness questionnaire was used to determine the level of disease awareness among rheumatoid arthritis patients. The questionnaire consisted of 8 subsections with total 50 questions. The sections were on Anatomy of joints, Arthritis-An overview, Rheumatoid Arthritis- Basic facts, Rheumatoid Arthritis-Disease activity, Clinicalfeatures, Diagnostic Tests, Treatment and non-pharmacologic interventions and Self-care management in Rheumatoid Arthritis.SPSS 16 was used for data analysis.

### RESULTS

Of the 54 participants, 46 (85.2%) were females and 8 (14.8) were males. The mean age of the participants was 49.13 ( $\pm$  10.69). Findings shown that (85.2%) had poor knowledge on rheumatoid arthritis and remaining 14.8% fall in moderate knowledge category. The mean knowledge on rheumatoid arthritis was 9.22 ( $\pm$  5.90) ranging from 0 to 24. The highest knowledge score obtained in the area "arthritis-an overview" (36.3%). It is also found that there is no

significant association between knowledge scores and socio-personal and clinical variables.

### CONCLUSIONS

Rheumatoid arthritis is a chronic inflammatory disease requiring long-term management and counselling. Assessment of disease specific knowledge revealed that majority of the patients are unaware about the various aspects of the disease and the knowledge score has no association with socio-personal and clinical variables.

**Keywords-** Survey, Patient's Knowledge,Rheumatoid arthritis.

## I. INTRODUCTION

Rheumatoid arthritis (RA) is an autoimmune disease that mainly attacks the synovial tissues within the joints. Autoimmune diseases occur when the body's immune system mistakes its own tissues for foreign invaders, such as bacteria or viruses. The confused immune system develops antibodies to seek out and destroy the "invaders" in the synovium (Smith H R et al, 2018)

It tends to strike during the most productive years of adulthood, between the ages of 20 and 40, and is a chronic disabling condition often causing pain and deformity. The prevalence varies between 0.3% and 1% and is more common in women and in developed countries. (Medscape. March 17, 2019)

Symptoms vary from pain, stiffness and fatigue to malaise, and rheumatoid arthritis can cause functional impairment and reduced general health. Treatment of rheumatoid arthritis is multi-disciplinary involving medications, regular follow-up, physiotherapy, joint protection, self-management and psychosocial support (Jahanbin I, Hoseini, Nazarinia, Ghodsbin, Bagheri and Ashraf 2014)

Patient education is very important for the patient to comply with the treatment, to change behaviors and thus to prevent disability. The precondition of education is to decide patient knowledge, because the equilibrium between what patients is in need of and what physician wants to teach should be well set when the contents of the training programs are being decided (Anadolu Kliniği Tıp Bilimleri Dergisi, Ocak 2018)

Guidelines for rheumatoid arthritis management state that 'education for patients with rheumatoid arthritis should be provided since first medical encounter' or must be based on a decision between the patient and the rheumatologist. Shared decision-making process requires the need to inform the patient of the risks of rheumatoid arthritis and the benefits of reaching the optimal disease activity states, and also the pros and cons of respective therapies through two-way communication on the therapeutic target and management plan as well as support for the patient to develop personal preferences. (Soha H. Senaraa, Wafaa Y. Abdel Wahedb, Shimaa E. Mabroukb, 2018)

Patient education aims to enable people to improve self-management, appropriately employ lifestyle changes (e.g. exercise) and help shift the responsibility for day-to-day disease management from health professionals to the individual. (Hammond A et al, 2008)

If rheumatoid arthritis patient's needs are not taken into consideration in the contents of education, the education will remain only as a routine program applied by health workers and it will not function properly. (Ndosi M et al, 2016)

One way to identify the individual educational need is by measuring the patient knowledge regarding the disease and self-management. So far, no attempts have been made in India to assess the knowledge of patients regarding rheumatoid arthritis. This study was aimed to assess the level of disease specific knowledge of rheumatoid arthritis patients and its relationship to various socio-personal and clinical variables.

## II. PATIENTS AND METHODS

A descriptive cross-sectional study was done on rheumatoid Arthritis patients attending the Rheumatology Clinic of New Medical College Hospital, Kozhikode. The study was approved by Institutional Research Committee (SRC No:163/19 Dated 05/03/2019)) and Institutional Ethical Committee (IEC number: CNC/105/2019-PhD Dated 15/03/2019), of Government College of Nursing, Medical College, Kozhikode. Administrative permission was obtained

from the Medical Superintendent, Principal and Head of Department of Medicine, New Medical College Hospital of Government Medical College, Kozhikode. A written informed consent was obtained from all the participants before enrollment into the study. The researcher assured voluntary participation in study with right to withdraw from the study. Rheumatoid Arthritis patients who fulfill the eligibility criteria were recruited by convenient sampling. A Semi-structured interview schedule was used to collect Socio-personal and clinical data. It consisted of 2 sections. Section I contains 14 items to collect socio-personal data including patient's age, sex, religion, educational status, type of family, role in the family, economic status, support system. Section II had 21 items to collect clinical variables such as family history of rheumatoid arthritis, duration of diagnosis, joint problems, exercise habits, and adoption of joint protection strategies. A self-prepared patient awareness questionnaire was used to determine the level of disease awareness among rheumatoid arthritis patients. The questionnaire consisted of 8 subsections with total 50 questions. The sections were on Anatomy of joints (Maximum score 2), Arthritis - An overview (Maximum score 7), Rheumatoid Arthritis- Basic facts (Maximum score 5), Rheumatoid Arthritis-Disease activity (Maximum score 1), Clinical features (Maximum score 6), Diagnostic Tests (Maximum score 3), Treatment and nonpharmacologic interventions (Maximum score 10) and Self-care management (Maximum score 16) in Rheumatoid Arthritis. Total Score is 50. To establish content validity, the tool along with a brief description of the study, objectives and methodology were given to 9 experts. The experts included 2 Medicine Specialists in charge of Rheumatology clinic, 1 Doctor from Physical Medicine and Rehabilitation Department, and 6 nursing experts. Category rearrangements of two items were made based on their suggestion. One item was excluded from the nonpharmacologic intervention section. The final version was given to experts again and there was 100% agreement. The content validity index was found to be 0.98. After obtaining content validity, the tool was translated to Malayalam and given to Language expert in Malayalam for language validation. Then the tool was retranslated to English and given to English language expert. Modifications were incorporated and tools were finalized. The Malayalam version of the tool was administered to 10 subjects similar to the study sample by the researcher and it was found that the language used in the tools were clear, simple and the participants were able to understand and respond to items effectively. Statistical analysis was performed using SPSS Statistics for Windows, version 16.0.

III. RESULTS

The study was conducted among 54 Rheumatoid Arthritis patients attending the Rheumatology clinic of NMCH, Kozhikode from 22nd March 2019 to 26th April 2019. The eligible patients meeting the criteria and willing to participate were enrolled. The reliability of the instrument was tested by administering to 10 rheumatoid arthritis patients. The Cronbach’s alpha computed was 0.8.

**Table 1: Frequency and percentage distribution, mean and standard deviation of socio- personal variables of rheumatoid arthritis patients.**

N=54

Socio- personal variables	Frequency	Percentage	Mean (± SD)
<b>Age in years</b>			
a) ≤ 40	10	18.5	49.13 (± 10.69)
b) 41-50	20	37.0	
c) 51- 60	12	22.2	
d) > 60	12	22.2	
<b>Sex</b>			
a) Male	8	14.8	-
b) Female	46	85.2	
<b>Religion</b>			
a) Hindu	23	42.6	-
b) Islam	27	50.0	
c) Christian	4	7.4	
<b>Educational status</b>			
a) Lower Primary /Upper Primary	25	46.3	-
b) High School / Plus Two	22	40.7	
c) College	3	5.6	
d) Not attended school	4	7.4	
<b>Type of family</b>			
a) Nuclear	32	59.3	-
b) Joint	22	40.7	

Analysis of socio- personal variables revealed that nearly half of samples belonged to the age group 41-50 years. Only 18.5% of samples have age less than 40 years. The mean age of samples was 49.13 (± 10.69). Most (85.2%) of the samples were females. The distribution of samples according to religion revealed that highest percentage (50.0%) were Islam, 42.6% were Hindus and 7.4% were Christians. Educational status of the sample revealed that highest percentage of samples had lower primary/upper primary education (46.3%) and high school/ plus two education (40.7%). Majority (59.3%) of samples hail from nuclear family.

**Table 2: Frequency and percentage distribution of rheumatoid arthritis patients according to socio- personal variables.**

N=54

Socio- personal variables	Frequency	Percentage
<b>Roles in the family</b>		
a) Wife/ husband	24	44.4
b) Mother/ father	9	16.7
c) Others	4	7.4
d) Wife/ husband and Mother/ father	13	24.1
e) Wife/ husband, Mother/ father and Grandfather/ grand mother	4	7.4
<b>Predominant support system</b>		
a) Family	52	96.3
b) Others	2	3.7
<b>Economic status</b>		
a) BPL	38	70.3
b) APL	16	29.7

Data on roles in the family revealed that highest percentage (44.4%) of samples were wife/husband. Few samples (24.1%) played the role both as wife/ husband and mother/ father. Most of the samples (96.3%) revealed that their predominant support system was family. Economic status of the family showed that majority (70.3%) of them belong to BPL category.

**Table 3: Frequency and percentage distribution, mean and standard deviation of age of onset of rheumatoid arthritis patients.**

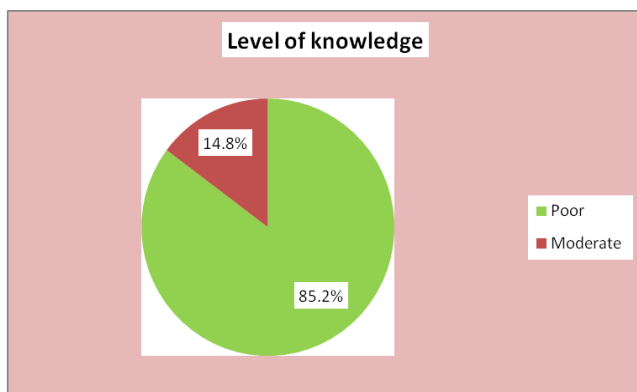
N=54

Clinical variables	Frequency	Percentage	Mean (± SD)
<b>Age of onset of Rheumatoid arthritis (in years)</b>			
a) ≤ 40	19	35.2	43.09(± 9.09)
b) 41-50	24	44.4	
c) 1- 60	11	20.4	
<b>Duration of diagnosis</b>			
a) ≤ 5	35	64.8	6.04(± 4.57)
b) 6-10	8	14.8	
c) 11-15	8	14.8	
d) >15	3	5.6	
<b>Family history of Rheumatoid arthritis</b>			
a) Yes	7	13.0	-
b) No	47	87.0	
<b>Joint problems</b>			
a) Pain	51	94.4	-
b) Warmth	18	33.3	
c) Swelling	32	59.3	
d) Morning stiffness	27	50.0	
<b>Habit of exercise regularly</b>			
a) Yes	46	85.2	-
b) No	8	14.8	
<b>Measure to protect joints</b>			
a) Complete rest	32	59.3	-
b) None	22	40.7	

Regarding the clinical variables- age of onset of the disease, highest percentage of samples (44.4%) had the onset at 41-50 years 35.2% had onset in less than 40 years of age. The mean age of onset of rheumatoid arthritis was 43.09(± 9.09). Rheumatoid arthritis has been diagnosed in less than five years in majority (64.8%) of samples. Only 5.6% samples had duration of diagnosis more than 15 years. Data on family history of rheumatoid arthritis revealed that only 13.0% had the family history. Data on joint problems showed that most of the samples (94.4 %) had pain in joints, 33.3% had warmth, 59.3% had swelling and 50.0% had morning stiffness. Most of the samples (85.2%) had habit of exercise regularly. Majority of samples (59.3%) take complete rest to protect joints and remaining 40.7% do not follow any measures to protect joints.

**Table 4: Frequency and percentage distribution of rheumatoid arthritis patients according to level of knowledge**  
N=54

Level of knowledge	Grading of scores	Frequency	Percentage
Poor	0-15	46	85.2
Moderate	16-30	8	14.8
Good	31-50	-	-



**Figure 1: Pie diagram representing percentage distribution of rheumatoid arthritis patients according to level of knowledge**

Table 4 and fig 1 show that most of the samples (85.2%) had poor knowledge on rheumatoid arthritis and remaining 14.8% fall in moderate knowledge category.

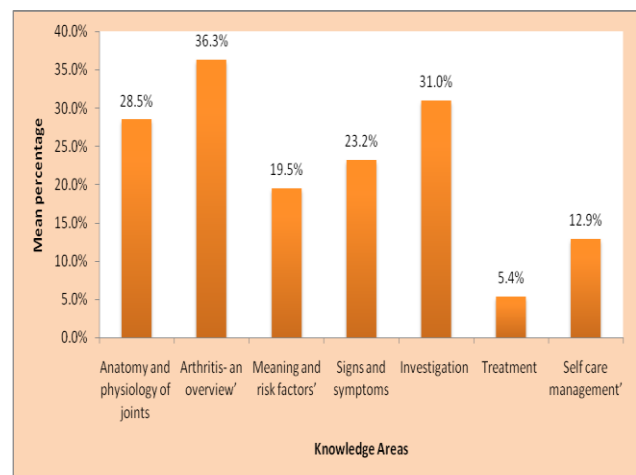
**Table 5: Range, mean, standard deviation, median, and mean percentage of knowledge scores among patients with rheumatoid arthritis**  
N=54

Range	Mean (± SD)	Median	Mean percentage
0-24	9.22 (± 5.90)	8.0	18.44

Table 5 shows that the mean knowledge on rheumatoid arthritis was 9.22 (± 5.90) ranging from 0 to 24. The mean percentage obtained was 18.44

**Table 6: Mean, Standard deviation and mean percentage of area wise knowledge scores among rheumatoid arthritis patients**  
N=54

Areas	Mean (± SD)	Mean percentage
Anatomy and physiology of joints	0.57 (± 0.54)	28.5
Arthritis- an overview	2.54 (± 1.63)	36.3
Meaning and risk factors	1.17 (± 1.18)	19.5
Signs and symptoms	1.39 (± 1.17)	23.2
Investigation	0.93 (± 0.87)	31.0
Treatment	0.54 (± 1.00)	5.4
Self-care management	2.07 (± 2.50)	12.9
<b>Total</b>	<b>9.22 (± 5.90)</b>	<b>18.44</b>



**Figure 2: Bar diagram representing mean percentage of knowledge scores in different areas**

Data in table 6 and figure 2 revealed the area wise knowledge on rheumatoid arthritis among patients with rheumatoid arthritis. The mean knowledge score in the area “Anatomy and Physiology of joints” was 0.57 (± 0.54), “arthritis- an overview” was 2.54 (± 1.63), “meaning and risk factors” was 1.17 (± 1.18), “sign and symptoms” was 1.39 (± 1.17), “investigation” was 0.93 (± 0.87), “treatment” was 0.54 (± 1.00) and “self-care management” was 2.07 (± 2.50). The highest mean percentage was obtained in the area “arthritis-an overview” (36.3%) followed by “investigation” (31.0%) and “Anatomy and Physiology of joints” (28.5%). The area of “treatment” had obtained the least mean percentage (5.4%).

In order to find out the association of knowledge scores of patients with rheumatoid arthritis to selected socio-personal variables,  $\chi^2$  test was done and the following research hypothesis was stated.

**H<sub>1</sub>:** There will be significant association between knowledge scores of patients with rheumatoid arthritis and selected socio-personal variables.

**Table 7:  $\chi^2$  value, df, table value, p value and inference of patients with rheumatoid arthritis and selected socio-personal variables.**

N=54

SL. No	Socio-personalvariables	$\chi^2$ value	df	Table value	p value	Inference
1	Age	2.997	3	7.815	0.392	Not significant
2	Sex	0.775	1	3.841	0.379	Not significant
3	Religion	1.305	2	5.991	0.521	Not significant
4	Educational status	6.622	3	7.815	0.085	Not significant
5	Economic status	4.081	3	7.815	0.253	Not significant
6	Support system	2.950	3	7.815	0.399	Not significant

$\chi^2$  at 0.05 level of significance

Association findings revealed that  $\chi^2$  value obtained for socio-personal variables such as age (2.997,  $p = 0.392$ ), sex (0.775,  $p = 0.379$ ), religion (1.305,  $p = 0.521$ ), educational status (6.622,  $p = 0.085$ ), economic status (4.081,  $p = 0.253$ ) and support system (2.950,  $p = 0.399$ ) were less than the table value of  $\chi^2$  at 0.05 level of significance. Hence the null hypothesis was accepted for these variables. It is concluded that there is no significant association of knowledge scores of patients with rheumatoid arthritis with selected socio-personal variables.

In order to find out the association of knowledge scores of patients with rheumatoid arthritis to selected clinical variables,  $\chi^2$  test was done and the following research hypothesis was stated.

**H2:** There will be significant association of knowledge scores of patients with rheumatoid arthritis with selected clinical variables.

**Table 46:  $\chi^2$  value, df, table value, p value and inference of patients with rheumatoid arthritis and selected clinical variables.**

N=54

Sl. No	Clinicalvariables	$\chi^2$ value	df	Table value	p value	Inference
1	Age of onset	0.236	2	5.991	0.888	Not significant
2	Family history	0.261	1	3.841	0.610	Not significant
3	Exercise habits	0.775	1	3.841	0.379	Not significant

$\chi^2$  at 0.05 level of significance

Data revealed that  $\chi^2$  value obtained for clinical variables such as age of onset (0.236,  $p = 0.888$ ), family history (0.261,  $p = 0.610$ ) and exercise habits (0.775,  $p = 0.379$ ) were less than the table value of  $\chi^2$  at 0.05 level of significance. Hence the null hypothesis was accepted for these variables. There is no significant association of knowledge scores of patients with rheumatoid arthritis with selected clinical variables.

#### IV. DISCUSSION

The knowledge constitutes an essential element of treatment, which allows the patients to take care of themselves, to undertake everyday activities and important decisions. A person suffering from rheumatoid arthritis needs support, family care and medical care. It depends on the patient, how much, the disease will change his life and how he will cope with the problems related to mental, physical and social aspects of life. (Pytel, A., & Wrzosek, Z. 2012). The findings of this study reveal that majority of the patients (85.2%) had poor knowledge about the disease and only 14.8% had moderate knowledge and none had good knowledge. It is also shown that, there is no significant association between knowledge scores of patients and selected socio-personal and clinical variables. This suggests the need for planning patient education programs for patients with Rheumatoid Arthritis. Several studies have demonstrated that increasing knowledge through patient education decreases disabilities. It could be suggested that early onset of Rheumatoid Arthritis is the optimum time to assess the patient's individual educational need. This would enable information provision, support and the answering of questions to begin to empower patients to self-manage. This view is shared by others who state that, from diagnosis onwards, those with Rheumatoid Arthritis require the necessary knowledge and understanding to enable them to make informed decisions regarding treatment options and to carry out self-care (Salman, S, Alnuaimi, A., Lateef, N. and Kadhum, R. (2014) There is also growing evidence that many patients experience significant disability in the very early stages of Rheumatoid Arthritis owing to the variable nature of the disease. At this stage health professionals can play a key role in reducing the effect of the disease through assessment, understanding needs and providing meaningful information (Hallert, E, Thyberg, I. and Hass, U. 2003). So, health care professionals especially nurses should take a lead role to initiate structured teaching programmes for the patients with Rheumatoid Arthritis.

#### V. CONCLUSION

People with arthritis have to learn to successfully manage its impact on their physical, functional, social and psychological status. The findings of the study revealed that majority of the patient's knowledge on Rheumatoid Arthritis is poor and is not associated with socio-personal and clinical variables. Patient education is an easy-to-implement and cost-effective method for improving patients' knowledge of the disease. The patient awareness questionnaire is a reliable and comprehensive instrument suitable for measuring the knowledge of Rheumatoid Arthritis in a group of early onset

Rheumatoid Arthritis patients before planning arthritis information course.

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