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PERCEIVED SELF EFFICACY AND CORRELATES OF RHEUMATOID ARTHRITIS PATIENTS ATTENDING A TERTIARY CARE CENTRE.

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Abstract:

The purpose of this study is to determine the baseline levels of self-efficacy among patients with rheumatoid arthritis and find out its relation to socio-personal and clinical variables.

The setting of the study was Rheumatology clinic of New Medical College Hospital; Kozhikode. A cross sectional survey design was used for the study. The sample consisted of 54 patients with rheumatoid Arthritis recruited by convenient sampling. A semi-structured interview schedule was used to collect socio-personal and clinical data. Self-efficacy level was assessed by Assessment of Self-efficacy scale (ASES). SPSS 16 was used for data analysis. The association of self-efficacy with other variables was analysed using Chi-Square test. The mean age of the participants was 49.13 (\pm 10.69). The mean self-efficacy score was 91.26 (\pm 40.60). The scores obtained in various subscales suggest that patients with rheumatoid arthritis have moderate levels of self-efficacy and self-efficacy has no association with socio-personal and clinical variables.

Key Words: Perceived Self-efficacy, Rheumatoid Arthritis.

INTRODUCTION

Rheumatoid Arthritis is a chronic systemic disease that affects the joints, connective tissues, muscle, tendons, and fibrous tissue. 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. Within 10 years on onset, at least 50% of patients in developed countries are unable to hold down a full-time job (WHO 2020).

Experts predict the number of patients with RA may double by 2030. Due to its severely debilitating nature, especially in advanced stages, the disease burden is considerable in economic and health expenditure terms. (<https://globalranetwork.org> 2019). Individuals affected by RA experience anxiety and depressive symptoms to a greater degree than the general population. It is estimated that between 14% and 62% of those afflicted with RA also suffer from depression. (Ziarko M et. Al)

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

The concept of perceived self-efficacy was developed by Albert Bandura in 1977. Self-efficacy is a person's self-confidence defined as one's belief in one's own ability to successfully organize and accomplish a particular task, behavior or any changes in cognitive status regardless of the underlying terms and conditions; it is also a prerequisite for behavior change which affects the amount of efforts and level of performance in reaching a goal. (Brekke, Hjortdahl, and Kvien, 2001)

The unpredictable course and varying disease activity of Rheumatoid Arthritis may cause patients to view their disease as uncontrollable, leading to lower self-efficacy expectations about the "self-management" of the consequences of the disease. The feeling that they cannot control their disease may cause patients to experience anxiety and depression. This, in turn, can lead to increased perceptions of pain and reduced efforts to cope with the consequences of the disease or to engage in daily activities. As a result, health status will further deteriorate (Colau L et al.)

Self-management involves a constant process of making behavioral choices and decisions. Self-efficacy expectations strongly influence these choices and decisions. These expectations also determine the amount of effort made, and the persistence of the effort, in performing self-management activities. (Brekke, Hjortdahl, and Kvien, 2001) Educational interventions aimed at strengthening self-

efficacy expectations about managing pain and other physical or psychosocial consequences of the disease may lead to better self-management and, eventually, better health status (Colau L et al.)

In the study by Barlow et al., the psycho-educational patient education influenced the patients' practice of physical exercise and joint protection positively and thereby decreased their arthritis pain. Previous studies have also shown that stronger self-efficacy correlates with better health status in of Rheumatoid Arthritis patients. Strong self-efficacy has been found to reduce the number of visits to health care professionals, and results in lower overall health care costs for both the patients and the health care system.

So, a self-efficacy survey of patients with Rheumatoid Arthritis was done as an initial step in planning for a psychoeducation programme. As per the knowledge of the investigator so far, no such studies are done in our country. In this survey, the self-efficacy of Rheumatoid Arthritis patients attending the rheumatology clinic of a tertiary care hospital was estimated. Arthritis Self-Efficacy Scale (ASES) developed by Lorig and colleagues in 1989 was used to measure self-efficacy.

PATIENTS AND METHODS

A descriptive cross-sectional 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 by convenient sampling. 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, and 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. 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.

The self-efficacy was measured using Assessment of Self-efficacy scale (ASES). It is a scale developed and validated by Lorig et al based-on Albert Banduras self-efficacy concept, exclusively for patients with rheumatoid Arthritis in 1989 and is widely used in all international studies. The investigator obtained permission to use the tool. It consists of total 20 items seeking the perceived level of certainty of patients in carrying out the various tasks of daily living. It has 3 sections - Self-efficacy pain scale-5 items (e.g.: How certain are you that you can decrease your pain quite a bit?). Self-efficacy function scale-9 items (How certain are you that you can that you can walk 10 steps downstairs in 7 seconds?), Self-efficacy other symptoms scale-6 items (e.g.: How certain are you that you can control your fatigue?). The respondent can mark a number from 1 to 10 based on their level of certainty in carrying out the tasks mentioned in the scale in each section. Score-1 corresponds to "very uncertain" and 10 to "very certain". Maximum Score is 200 and minimum score is 20. Scoring is done for three subsections as mentioned. Self-efficacy for pain (Maximum possible score-50), Self-efficacy for functioning (Maximum possible score-90) and Self-efficacy for other symptoms (Maximum possible score -60). Self-efficacy categorization was done as shown below

Self-efficacy Pain Scale: Total Score - 50,

- 0 - 12 - Very uncertain - Poor Self-efficacy,
- 13- 25 - Quite uncertain - Average self-efficacy,
- 26- 38 - Quite certain - Good self-efficacy,
- 39-50 - Very certain - Very good self-efficacy.

Self-efficacy function Scale: Total Score - 90,

- 0 -23 - Very uncertain - Poor Self -efficacy
- 24 -45 -Quite uncertain - Average self-efficacy,
- 46-68 - Quite certain - Good self-efficacy,
- 69 -90 - Very certain - Very good self-efficacy.

Self-efficacy other symptoms Scale: Total Score -60,

- 0 - 15 - Very uncertain - Poor Self - efficacy,
- 16 -30 - Quite uncertain - Average self-efficacy,
- 31 -45 - Quite certain - Good self-efficacy
- 46 -90 - Very certain - Very good self-efficacy.

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. The final version was given to experts again and there was 100% agreement. 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.

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 study findings were organized under the following sections.

Section A: Distribution of patients with rheumatoid arthritis according to socio-personal and clinical variables

Section B: Distribution of patients with rheumatoid arthritis according to self-efficacy of patients with rheumatoid arthritis

Section C: Association of self-efficacy of patients with rheumatoid arthritis with selected socio-personal and clinical variables.

Section A: Distribution of samples according to socio-personal and clinical variables

This section deals with frequency and percentage distribution of samples according to socio-personal and clinical variables.

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

N=54			
Socio- personal variables	Frequency	Percentage	Mean (\pm SD)
Age in years			
≤ 40	10	18.5	49.13 (± 10.69)
41-50	20	37.0	
51- 60	12	22.2	
> 60	12	22.2	
Sex			
Male	8	14.8	-
Female	46	85.2	
Religion			
Hindu	23	42.6	-
Islam	27	50.0	
Christian	4	7.4	
Educational status			
Lower Primary /Upper Primary	25	46.3	-
High School / Plus Two	22	40.7	
College	3	5.6	
Not attended school	4	7.4	
Type of family			
Nuclear	32	59.3	-
Joint	22	40.7	

Data presented in table 1 depicts that most of the samples belong to the age group 41-50 years with a mean age of 49.13 (± 10.69). Most (85.2%) of the samples were females. Half of the samples (50.0%) were Islam, 42.6% and only 7.4% were Christians. Majority of the samples are school educated only (87%). More than half (59.3%) of the samples belong to nuclear family.

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

N=54		
Socio- personal variables	Frequency	Percentage
Roles in the family		
Wife/ husband	24	44.4
Mother/ father	9	16.7
Others	4	7.4
Wife/ husband and Mother/ father	13	24.1
Wife/ husband, Mother/ father and Grandfather/ grand mother	4	7.4
Predominant support system	Frequency	Percentage
Family	52	96.3
Others	2	3.7
Economic status	Frequency	Percentage
BPL	38	70.3
APL	16	29.7

Data presented in table 2 shows that the highest percentage (44.4%) of samples were wife/husband. Most of the samples (96.3%) revealed that their predominant support system was family. Majority (70.3%) of the samples belong to Below Poverty Line (BPL).

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

N=54			
Clinical variables	Frequency	Percentage	Mean (± SD)
Age of onset of Rheumatoid arthritis (in years)			
≤ 40	19	35.2	43.09(± 9.09)
41-50	24	44.4	
1- 60	11	20.4	
Duration of diagnosis			
≤ 5	35	64.8	6.04(± 4.57)
6-10	8	14.8	
11-15	8	14.8	
>15	3	5.6	
Family history of Rheumatoid arthritis			
Yes	7	13.0	-
No	47	87.0	
Joint problems			
Pain	51	94.4	-
Warmth	18	33.3	
Swelling	32	59.3	
Morning stiffness	27	50.0	
Habit of exercise regularly			
Yes	46	85.2	-
No	8	14.8	
Measure to protect joints			
Complete rest	32	59.3	-
None	22	40.7	

Data presented in table 3 depicts that highest percentage of samples (44.4%) had the onset of rheumatoid arthritis at 41-50 years and 35.2% had onset in less than 40 years of age with a mean age of onset 43.09(\pm 9.09). Rheumatoid arthritis has been diagnosed in less than five years in majority (64.8%) of samples. Only 13.0% had the family history of rheumatoid arthritis. Most of the samples (94.4 %) complaint of joint pain, 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%) adopt complete rest as a measure to protect joints.

Section B: Distribution of samples according to self- efficacy of patients with rheumatoid arthritis

This section deals with the range, mean, standard deviation, median, mean percentage of self- efficacy and its subscales, frequency and percentage distribution of samples according to categorization of subscales of self- efficacy.

Table 4: Range, mean, standard deviation, median, and mean percentage of self -efficacy scores among patients with rheumatoid arthritis

N=54			
Range	Mean (\pm SD)	Median	Mean percentage
22-170	91.26 (\pm 40.60)	88.0	45.6

Data in table 5 depicts that the mean self- efficacy score was 91.26 (\pm 40.60) ranging from 22 to 170. The mean percentage obtained was 45.6%.

Table 5: Mean, Standard deviation and mean percentage of area wise self- efficacy sub scores among patients with rheumatoid arthritis

N=54		
Sub scores	Mean (\pm SD)	Mean percentage
Pain Self- efficacy	20.22 (\pm 10.35)	40.4
Function Self- efficacy	42.41 (\pm 19.89)	47.1
Other Symptoms Self- efficacy	28.63 (\pm 12.70)	47.7
Total	91.26 (\pm 40.60)	45.6

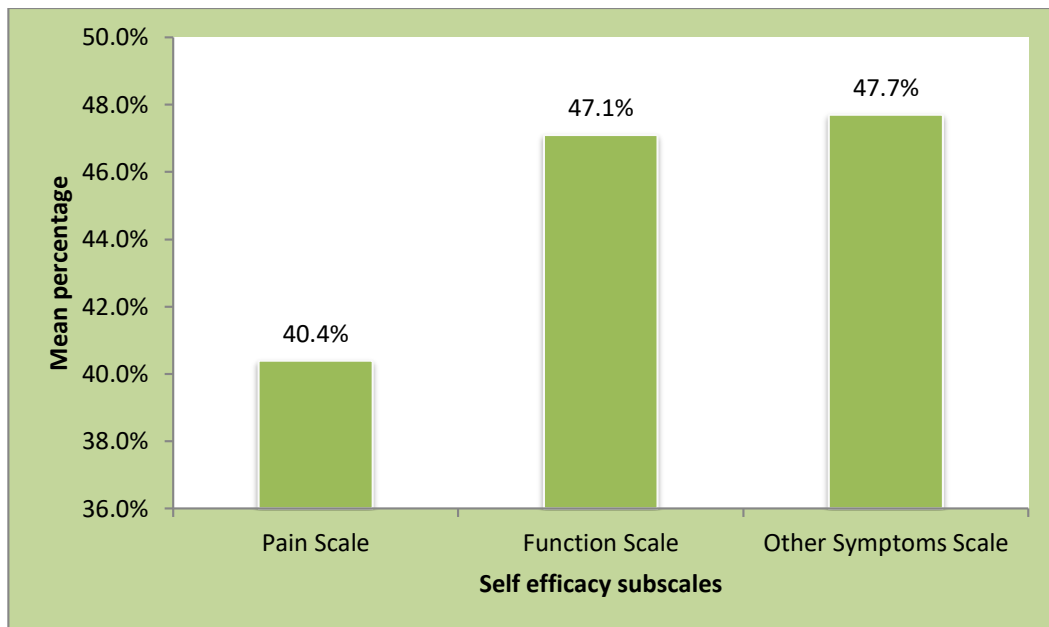


Figure 1: Bar diagram representing mean percentage of self -efficacy scores in different subscales

Data in table 5 and figure 1 revealed that the mean pain self- efficacy was 20.22 (\pm 10.35), function self- efficacy was 42.41 (\pm 19.89) and other symptoms self- efficacy was 28.63 (\pm 12.70).

Table 6: Frequency and percentage distribution of patients with rheumatoid arthritis according to level of Self-Efficacy pain score
N=54

Level of self- efficacy	Scoring	Frequency	Percentage
Poor	0-12	17	31.5
Average	13-25	16	29.6
Good	26-38	18	33.3
very good	39-50	3	5.6

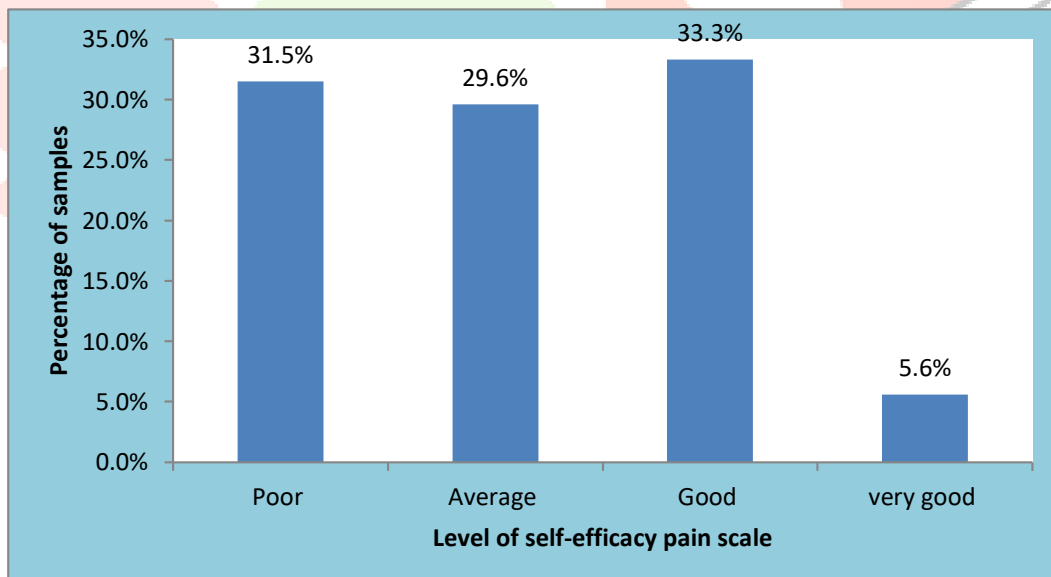


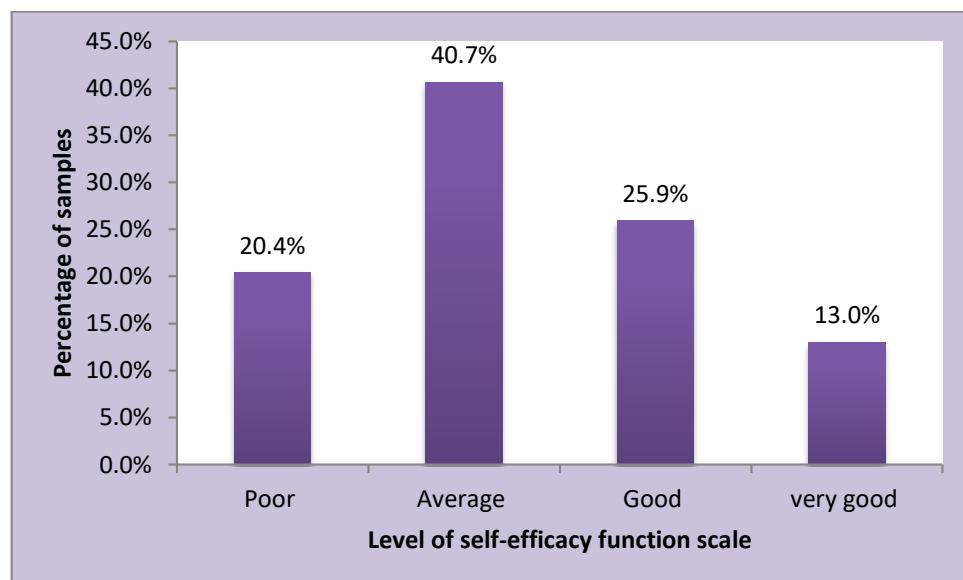
Figure 2: Bar diagram representing percentage distribution of samples according to level of self -efficacy pain score

Data in table 6 and figure 2 revealed that highest percentage (33.3%) of samples had good self- efficacy pain scale score, followed by poor (31.5%) and average (29.6%). Only 5.6% had very good self -efficacy score.

Table 7: Frequency and percentage distribution of patients with rheumatoid arthritis according to level of Self-Efficacy function score.

N=54

Level of self-efficacy	Scoring	Frequency	Percentage
Poor	0-23	11	20.4
Average	24-45	22	40.7
Good	46-68	14	25.9
very good	69-90	7	13.0

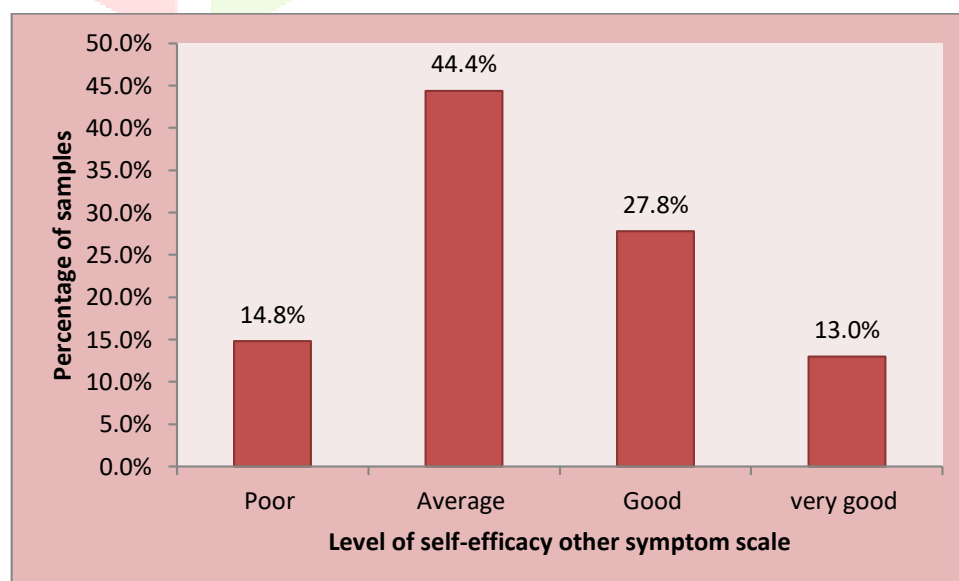
**Figure 3: Bar diagram representing percentage distribution of samples according to level of self-efficacy function score**

Data in table 7 and figure 3 revealed that highest percentage (40.7%) of samples had average self-efficacy function scale score, followed by good (25.9%) and poor (20.4%). Only 13.0 % had very good self-efficacy function score.

Table 8: Frequency and percentage distribution of patients with rheumatoid arthritis according to level of Self-Efficacy other symptom score

N=54

Level of self-efficacy	Scoring	Frequency	Percentage
Poor	0-15	8	14.8
Average	16-30	24	44.4
Good	31-45	15	27.8
very good	46-60	7	13.0

**Figure 4: Bar diagram representing percentage distribution of samples according to level of self-efficacy other symptom score**

Data in table 8 and figure 4 revealed that highest percentage (44.4%) of samples had average self-efficacy other symptom scale score, followed by good (27.8%) and poor (14.8%). Only 13.0 % had very good self-efficacy other symptom score.

Section C: Association of self-efficacy of patients with rheumatoid arthritis with selected socio-personal and clinical variables.

In order to find the association of self-efficacy of patients with rheumatoid arthritis with selected socio-personal and clinical variables, χ^2 test was done and the following research hypothesis was stated.

H₁: There will be significant association between self-efficacy of patients with rheumatoid arthritis and selected socio-personal and clinical variables.

Table 9: χ^2 value, df, table value, p value and inference of self-efficacy of patients with rheumatoid arthritis and selected socio-personal variables.

N=54

SL. No	Socio-personal variables	χ^2 value	df	Table value	p value	Inference
1	Age	0.667	3	7.815	0.881	Not significant
2	Sex	2.348	1	3.841	0.125	Not significant
3	Religion	0.725	2	5.991	0.696	Not significant
4	Educational status	1.555	3	7.815	0.670	Not significant
5	Economic status	4.737	3	7.815	0.192	Not significant
6	Support system	3.020	3	7.815	0.388	Not significant

χ^2 at 0.05 level of significance

Data in table 9 revealed that χ^2 value obtained for socio-personal variables such as age (0.667, p = 0.881), sex (2.348, p = 0.125), religion (0.725, p = 0.696), educational status (1.555, p = 0.670), economic status (4.737, p = 0.192) and support system (3.020, p = 0.388) were less than the table value of χ^2 at 0.05 level of significance. Hence the null hypothesis was accepted for these variables. Therefore, it was concluded that there is no significant association of self-efficacy of patients with rheumatoid arthritis with selected socio-personal variables.

Table 10: χ^2 value, df, table value, p value and inference of self-efficacy of patients with rheumatoid arthritis and selected clinical variables.

N=54

Sl. No	Clinical variables	χ^2 value	df	Table value	p value	Inference
1	Age of onset	0.310	2	5.991	0.856	Not significant
2	Family history	0.164	1	3.841	0.685	Not significant
3	Exercise habits	0.001	1	3.841	0.999	Not significant

χ^2 at 0.05 level of significance

Data in table 10 shows that χ^2 value obtained for clinical variables such as age of onset (0.310, p = 0.856), family history (0.164, p = 0.685) and exercise habits (0.001, p = 0.999) were less than the table value of χ^2 at 0.05 level of significance. Hence the null hypothesis was accepted for these variables. Therefore, it was concluded that there is no significant association between self-efficacy of patients with rheumatoid arthritis and selected clinical variables.

DISCUSSION

Perceived self-efficacy is described as 'a judgement of one's capability to accomplish a certain level of performance, whereas an outcome expectation is a judgement of the likely consequence such behaviour will produce. Increased self-efficacy leads to improved behaviour, motivation, thinking patterns and emotional well-being. Once patients have developed strong self-efficacy, they tend to generalize from one experience to another, and single failures do not influence their self-efficacy beliefs (Mäkeläinen, K Vehviläinen-Julkunen, A Pietilä 2007). In this survey the mean self-efficacy score of patients with rheumatoid arthritis was 91.26 (\pm 40.60). There is no significant association between self-efficacy of patients with rheumatoid arthritis and selected socio-personal and clinical variables. The findings of the study revealed that majority of individuals were females and middle aged. Most of the patient's complaints of joint pain as the symptom (94.4%). These findings are similar to results of JHAC (2006), Rosemann et al., (2007) and Ünsal & Kaşıkci, (2010) who stated that, the majority of RA patients in their studies were females and in the middle age group.

CONCLUSION

The results of this study showed that ASES is an efficient tool to assess the self-efficacy of patients with rheumatoid arthritis. The scores obtained in various subscales suggest that patients with rheumatoid arthritis have moderate levels of self-efficacy and self-efficacy has no association with socio-personal and clinical variables.

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CONFLICTS OF INTEREST

There are no conflicts of interest.

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