

Evaluate the Effectiveness of Health Care Package on Self-Care Management of Rheumatoid Arthritis in Terms of Knowledge and Quality of Life in Patients with Early Stage Rheumatoid Arthritis

Farrha Khan¹, Dr. R.G. Mathur², Madhumita Dey³

¹Master of Science in Nursing, Rajkumari Amrit Kaur college of Nursing, New Delhi

²External Faculty, Rajkumari Amrit Kaur college of Nursing, New Delhi

³Tutor, Rajkumari Amrit Kaur college of Nursing, New Delhi

Corresponding Author: Farrha Khan

DOI: <https://doi.org/10.52403/ijhsr.20240121>

ABSTRACT

Topic: A study to evaluate the effectiveness of health care package on self-care management of rheumatoid arthritis in terms of knowledge and quality of life in patients with early stage rheumatoid arthritis in selected hospital of Delhi.

Objectives: Develop the health care package on self-care management of rheumatoid arthritis. Assess the knowledge of patients on self-care management of rheumatoid arthritis before and after administration of health care package. Assess the level of quality of life of patients with rheumatoid arthritis before and after administration of health care package. Determine the relationship between the knowledge and the quality of life of patients after administration of health care package. Determine the association between post-test knowledge on self-care management of rheumatoid arthritis and selected variables: - Age, Gender, Occupation, Monthly family income, Education, Family history of rheumatoid arthritis, Alcohol consumption habits, Smoking habits, BMI. Determine the association between and post-test of quality of life of patients with rheumatoid arthritis and selected variables: - Age, Gender, Occupation, Monthly family income, Education, Family history of rheumatoid arthritis, Alcohol consumption habits, Smoking habits, BMI. Determine the acceptability and utility of Health care package in terms of opinion of rheumatoid arthritis patients.

Methodology: Experimental research approach with pre- test post-test control group design was adopted. The population comprised of 60 early-stage rheumatoid arthritis patients selected through purposive sampling method and randomly allocated in the control and experimental group by lottery method from PGIMR, Dr. RML Hospital, New Delhi. The independent variable was health care package and dependent variable were knowledge regarding self-care management and quality of life of early-stage rheumatoid arthritis patients. The tools used were structured knowledge questionnaire, structured quality of life rating scale and structured opinionnaire. The KR-20, inter-observer and Cronbach alpha formula was used to assess the reliability of tools.

Results: Early-stage rheumatoid arthritis patients had poor knowledge regarding self-care management leads to poor quality of life. The health care package found to be effective in improving the knowledge of early-stage rheumatoid arthritis patients regarding self-care management and help them towards a better quality of life. There was no significant association between the knowledge and quality of life with the selected variables i.e. age, gender, occupation, monthly family income, education, family history of rheumatoid arthritis, alcohol consumption habits, smoking habits and BMI in early-stage rheumatoid arthritis patients.

Conclusion: The present study identified deficit in knowledge and poor quality of life in early-stage rheumatoid arthritis patients. The health care package was helpful to increase knowledge regarding self-care management and improves quality of life of early-stage rheumatoid arthritis patients.

Key words: Health care package, self-care management, knowledge, quality of life, Early-stage rheumatoid arthritis patients.

INTRODUCTION

Health is a most important aspect of one's life. Health is multidimensional. "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity"^[1]. We are living in the modern medical era. Many advanced technologies are there to diagnose and treat the diseases and to restore health of humans but still many diseases are there which affects almost every aspect of health and adversely affects the quality of life of a person. Quality of life is the degree to which an individual is healthy, comfortable, and able to participate in or enjoy life events. The term *quality of life* refers both to the experience an individual has of his or her own life and to the living conditions in which individuals find themselves. Quality of life is highly subjective. Whereas one person may define quality of life according to wealth or satisfaction with life, another person may define it in terms of capabilities (e.g., having the ability to live a good life in terms of emotional and physical well-being). Within the arena of health care, quality of life is viewed as multidimensional, encompassing emotional, physical, material, and social well-being^[1]. Rheumatoid arthritis which is a living long term condition, is one of those diseases which affects the persons physically, mentally, socially, financially and sexually. A person living with rheumatoid arthritis has to face many problems in there day to day life and in their personal and professional fronts. Hence, rheumatoid arthritis can affect the quality of life of a patient to an extreme extent. No one wants to live a dependent and isolated life, even the patients live with chronic diseases like rheumatoid arthritis wants treatment of the disease as well as a view and guidance to live a comfortable life with less or no

complications. That is why quality of life among patients living with long term diseases like rheumatoid arthritis is a major medical concerned now days.

Feelings of an arthritis patient quoted in an article by a patient itself: *I am a 43-year-old wife and mother of two grade-schoolers and have had severe rheumatoid arthritis now for nearly 10 years. My husband is understanding and supportive. My disease has caused deformity of my hands and feet. My fingers are recognizably gnarled and have bumps, called nodules. My wrists have nearly fused so that I can move them very little. My toes have cocked up and I have calluses under the pads at the bottoms of my feet. My knees are chronically slightly swollen, as are many of the small joints of my knuckles. Things that most people take for granted, for example sleeping, bathing, brushing one's teeth, getting dressed, making meals, and even driving a car, are extremely challenging for me*^[2].

Nurses play a very important role in care of patient with rheumatology and improve their quality of life. Nurses were able to afford more time to answer questions, give information and educate patients and their families. Education leads to change in behavior and attitude of a person and can change their perspective towards there pre-existing concepts and beliefs and can bring a positive change to once life^[2].

OBJECTIVES OF THE STUDY:

- 1) To develop the health care package on self-care management of rheumatoid arthritis.
- 2) To assess the knowledge of patients on self-care management of rheumatoid arthritis before and after administration of health care package.
- 3) To assess the level of quality of life of patients with rheumatoid arthritis before

and after administration of health care package.

- 4) To determine the relationship between the knowledge and the quality of life of patients after administration of health care package.
- 5) To determine the association between post-test knowledge on self-care management of rheumatoid arthritis and selected factors.
 - a) Age
 - b) Gender
 - c) Occupation
 - d) Monthly family income
 - e) Education
 - f) Family history of rheumatoid arthritis
 - g) Alcohol consumption habits
 - h) Smoking habits
 - i) BMI
- 6) To determine the association between and post-test quality of life of patients with rheumatoid arthritis and selected factors.
 - a) Age
 - b) Gender
 - c) Occupation
 - d) Monthly family income
 - e) Education
 - f) Family history of rheumatoid arthritis
 - g) Alcohol consumption habits
 - h) Smoking habits
 - i) BMI
- 7) To determine the acceptability and utility of Health care package in terms of opinion of rheumatoid arthritis patients.

MATERIALS AND METHODS:

Research Approach: Quantitative experimental research approach

Research Design: Pre-test post-test control group design

Variables of the study:

Independent variables: Health care package on self-care management of rheumatoid arthritis.

Dependent variables: Knowledge and quality of life of early-stage rheumatoid arthritis patients.

Extraneous variables: In the present study, the extraneous variables were age, gender, occupation, monthly family income, education, family history of rheumatoid arthritis, alcohol consumption habits, smoking habits and BMI.

Setting of the population: PGIMR, Dr. RML Hospital, New Delhi.

Population: In the present study, the population comprised of the early-stage rheumatoid arthritis patients of adult age group attending OPD of PGIMR, Dr. Ram Manohar Lohia Hospital, New Delhi.

Sample: 60 early-stage rheumatoid arthritis patients (30 in experimental group and 30 in control group) attending OPD of PGIMR, Dr. Ram Manohar Lohia Hospital, New Delhi.

Sampling Technique: Samples were selected by purposive sampling technique and samples were randomly assigned to the 30 early-stage rheumatoid arthritis patients in experimental group and 30 in control group by using lottery method.

PROCEDURE:

- Ethical permission was taken from the Institutional ethical committee of Rajkumari Amrit Kaur College of Nursing, New Delhi to conduct the research study.
- Permission was obtained, to conduct the research study from the Medical Director, Research review committee and ethical committee of PGIMR, Dr. Ram Manohar Lohia Hospital, New Delhi.
- The technique of data collection was a questionnaire on sample characteristics, structured knowledge questionnaire on self-care management of rheumatoid arthritis and quality of life rating scale and structured opinionnaire were used for data collection. Paper and pencil were used to administer the tool.

- The possible range of knowledge scores to be obtained by early-stage rheumatoid arthritis patients was from 0 to 20. The following categories were created for the interpretation of the knowledge scores obtained by the early-stage rheumatoid arthritis patients are as follows:
 - Poor knowledge 0-7
 - Average knowledge 8-14
 - Good knowledge 15-20
- The possible range of scores for quality of life to be obtained by early-stage rheumatoid arthritis patients was from 30 to 90. The following categories were created for the interpretation of the quality-of-life scores obtained by the early-stage rheumatoid arthritis patients are as follows:
 - Good quality 71-90
 - Fair quality 51-70
 - Poor quality 30-50
- To ensure the validity of tools, i.e. structured knowledge questionnaire, quality of life rating scale and opinionnaire was submitted to the 11 experts from the field of nursing and medical. The experts were chosen based on their expertise, experience, qualification and interest in the problem area.
- To establish the reliability of knowledge questionnaire KR-20 method was used and was found to be 0.79. The reliability of quality of rating scale was checked by cronbach alpha and found the value 0.71.
- The final study was conducted from 17th Dec. 2018 to 7th Jan 2019 at PGIMR, Dr. Ram Manohar Lohia Hospital, New Delhi.
- The purpose of the study was explained to the participants. After obtaining consent from the patients who are willing to participate in the study, the

data were collected from the sample subjects.

STATISTICAL ANALYSIS:

- The data was analyzed by using descriptive and inferential statistics.
- Frequency and percentage to describe the sample characteristics of early-stage rheumatoid arthritis patients.
- Mean, median, standard deviation of pre-test and post-test knowledge and quality of life scores of experimental and control groups.
- Computing “t” value to find out the significance of mean difference between pre-test and post-test knowledge and quality of life scores of experimental groups.
- Computing the “t” value to find out the significance of mean difference between post-test knowledge and quality of life scores of experimental group and control group.
- Karl Pearson coefficient of correlation between post-test knowledge and post-test quality of life scores of experimental groups.
- Chi square test to seek association of selected factors to the post-test knowledge and quality of life scores of experimental groups.
- Frequency and percentage of acceptability and utility response of early-stage rheumatoid arthritis patients of experimental group for health care package.

RESULTS:

Table-1 Frequency (f) & percentage (%) distribution of characteristics of patients with early-stage rheumatoid arthritis N=60

S.No	Sample characteristics	Experimental Group n=30		Control Group n=30		Total no. of participants N=60	
		f	%	f	%	f	%
1.	Age						
	25-30 yr	05	16.67	06	20	11	18.33
	31-40 yr	06	20	07	23.33	13	21.67
	41-50 yr	13	43.33	09	30	22	36.67
	Above 50 yr	06	20	08	26.67	14	23.33
2.	GENDER						
	Male	07	23.33	06	20	13	21.67
	Female	23	76.67	24	80	47	78.33
3.	Educational qualification						
	Primary	15	50	09	30	24	40
	Secondary	05	16.67	10	33.33	15	25
	Senior secondary	05	16.67	03	10	08	13.33
	Graduate and above	05	16.67	08	26.67	13	21.67
4.	Occupation						
	Homemaker	17	56.67	17	56.67	34	56.67
	Unemployed	02	06.67	03	10	05	08.33
	Govt. Services	03	10	02	06.67	05	08.33
	Private Service	06	20	07	23.33	13	21.67
	Retired	02	06.67	01	03.33	03	05
5.	Monthly family income						
	Less than 15000	07	23.33	07	23.33	14	23.33
	15000-20000	11	36.67	08	26.67	19	31.67
	20001-30000	08	26.67	10	33.33	18	30
	More than 30000	04	13.33	05	16.67	09	15
6.	Family History of RA						
	Yes	03	10	09	30	12	20
	No	27	90	21	70	48	80
7.	Alcohol Consumption						
	Do not consume alcohol	26	86.67	23	76.67	49	81.67
	Drink occasionally	02	06.67	05	16.67	07	11.67
	Drink 1-2 oz daily	01	03.33	01	03.33	02	03.33
	Take more than 2 oz daily	01	03.33	01	03.33	02	03.33
8.	How often you smoke						
	Do not smoke	22	73.33	17	56.67	39	65
	Smoke occasionally	03	10	04	13.33	07	11.67
	Smoke more than a day	02	06.67	04	13.33	06	10
	Former Smoker	03	10	05	16.67	08	13.33
9.	BMI						
	Under Weight	04	13.33	06	20	10	16.67
	Normal Weight	17	56.67	13	43.33	30	50
	Over Weight	06	20	07	23.33	13	21.67
	Obese	03	10	04	13.33	07	11.67

Table-2 Mean, median, standard deviation of pre-test & post-test knowledge score of patients on self-care management of rheumatoid arthritis in experimental & control group N=60

GROUP	KNOWLEDGE SCORE	MEAN	MEDIAN	STANDARD DEVIATION
Experimental Group (n=30)	Pre-test	8.27	8	1.62
	Post-test	14.63	14.5	1.35
Control group (n=30)	Pre-test	8.47	8	1.68
	Post-test	8.37	8	1.61

Table-3 Mean, mean difference (MD), standard deviation difference (sdd), standard error of mean difference (se_{md}) & 't' value of the pre-test & post-test knowledge score of patients on self-care management of rheumatoid arthritis in experimental group. N=30

Group	Knowledge score	Mean	MD	SD _d	SE _{md}	't' value
Experimental Group (n=30)	Pre-test	8.27	6.37	1.57	0.29	21.97*
	Post-test	14.63				

* t value for df (29) level=1.70, P<0.05= significant at 0.05 level
t value for df (29) level=2.46, P<0.01=significant at 0.01 level

Table-4 Mean, mean difference, standard deviation difference (SD_d), standard error of mean difference (SE_{MD}) & 't' value of the post-test knowledge scores of patients between experimental & control group. N=60

Group	Knowledge scores	Mean	Mean difference	SD _d	SE _{md}	't' value
Experimental Group (n=30)	Post-test	14.63	6.26	1.49	0.32	19.56*
	Control group (n=30)	8.37				

* t value for df (58) level=1.67, P<0.05= significant at 0.05 level
t value for df (58) level=2.39, P<0.01= significant at 0.01 level

Table-5 Mean, median, standard deviation of pre-test & post-test quality of life scores on self-care management of rheumatoid arthritis in experimental & control group N=60

Group	Quality of life scores	Mean	Median	Standard deviation
Experimental Group (n=30)	Pre-test	48.63	48	2.52
	Post-test	57.67	57.5	2.60
Control group (n=30)	Pre-test	48.4	48	2.01
	Post-test	48	47	2.36

Table-6 Mean, mean difference, standard deviation difference (SD_d) standard error of mean difference (SE_{MD}) & 't' value of the pre-test & post-test quality of life score of patients of experimental group. N=30

Group	Quality of life score	Mean	Mean difference	SD _d	SE _{md}	't' value
Experimental Group (N=30)	Pre-test	48.63	9.03	1.98	0.36	25.08*
	Post-test	57.67				

* t value for df (29) level=1.70, P<0.05= significant at 0.05 level
t value for df (29) level=2.46, P<0.05= significant at 0.01 level

Table-7 Mean, mean difference, standard deviation difference (SD_d) standard error of mean difference (SE_{MD}) & 't' value of the post-test quality of life scores of patients of experimental & control group. N=60

Group	Quality of life score	Mean	Mean difference	SD _d	SE _{md}	't' value
Experimental Group (n=30)	Post-test	57.67	9.67	2.49	0.49	19.73*
	Control group (n=30)	48				

* t value for df (58) level=1.67, P<0.05= significant at 0.05 level
t value for df (58) level=2.42, P<0.05= significant at 0.01 level

Table-8 Karl Pearson Co-efficient of correlation between post-test knowledge scores & post-test quality of life scores of patients of experimental group N=30

Group	Variables scores	Mean	SD	'r' value
Experimental Group (N=30)	Knowledge scores	14.63	1.35	0.77*
	Quality of life scores	57.67	2.60	

* r value for df (28) 'r'=0.381, significant at 0.05 level

Table-9 Chi square value showing association between post-test knowledge scores with selected factors of patients in experimental group N=30

S.No.	Selected variables	Below median	Above Median	Df	Obtained value	Table value	Inferences
1.	Age (in Years)			3	3.6 ^{NS.}	7.82	Not significant
	20-30	2	3				
	31-40	5	1				
	41-50	6	7				
	>50	2	4				
2.	Gender			1	0.37 ^{NS.}	3.84	Not significant
	Male	3	4				
	Female	12	11				
3.	Education Qualification			3	0.4 ^{NS.}	7.82	
	Primary	8	8				
	Secondary	2	3				
	Senior Secondary	3	2				
	Graduate and above	2	2				
4.	Occupation			4	1.09 ^{NS.}	9.49	Not significant
	Homemaker	9	8				
	Unemployed	1	1				
	Govt. Services	1	2				
	Private Services	2	4				
	Retired	1	1				
5.	Monthly Family Income			3	1.46 ^{NS.}	7.82	Not significant
	Less than 15000	4	3				
	15000-20000	4	7				
	20001-30000	5	3				
	More than 30000	2	2				

6.	Family History of RA		1	3.71 ^{N.S.}	3.84	Not significant	
	Yes	0					3
	No	15	12				
7.	Alcohol consumption habits		1	0.54 ^{N.S.}	3.84	Not significant	
	Do not consume alcohol	13					13
	Drink occasionally	1					1
	Drink 1-2 oz daily	1					0
	Take more than 2 oz daily	0	1				
8.	Smoking habits		3	1.5 ^{N.S.}	7.82	Not significant	
	Do not smoke	12					10
	Smoke occasionally	1					2
	Smoke more than a day	1					1
	Former Smoker	1					2
9.	BMI		3	4.33 ^{N.S.}	7.82	Not significant	
	Underweight	2					2
	Normal weight	11					6
	Over weight	1					5
	Obese	2					1

This indicates that knowledge did not depend on the selected factors. The knowledge is independent and not influenced by selected factors.

Table-10 Chi square value showing association between post-test quality of life scores with selected factors of patients in experimental group N=30

S.No.	Selected variables	Below median	Above Median	Df	Obtained value	Table value	Inferences
1.	Age (in Years)		1	1.63 ^{N.S.}	3.84	Not significant	
	20-30	3					2
	31-40	3					3
	41-50	6					7
	>50	0					6
2.	Gender		1	2.35 ^{N.S.}	3.84	Not significant	
	Male	1					6
	Female	10					13
3.	Education Qualification		3	0.52 ^{N.S.}	7.82	Not significant	
	Primary	7					9
	Secondary	2					3
	Senior Secondary	3					2
	Graduate and above	2					2
4.	Occupation		4	0.25 ^{N.S.}	9.49	Not significant	
	Homemaker	8					9
	Unemployed	1					1
	Govt. Services	1					2
	Private Services	3					3
	Retired	1					1
5.	Monthly Family Income		3	5.04 ^{N.S.}	7.82	Not significant	
	Less than 15000	3					3
	15000-20000	3					8
	20001-30000	7					2
	More than 30000	2					2
6.	Family History of RA		1	0.54 ^{N.S.}	3.84	Not significant	
	Yes	0					3
	No	15					12
7.	Alcohol consumption habits		1	0.54 ^{N.S.}	3.84	Not significant	
	Do not consume alcohol	13					13
	Drink occasionally	1					1
	Drink 1-2 oz daily	1					0
	Take more than 2 oz daily	0					1
8.	Smoking habits		3	0.86 ^{N.S.}	7.82	Not significant	
	Do not smoke	12					10
	Smoke occasionally	1					2
	Smoke more than a day	1					1
	Former Smoker	1					2
9.	BMI		3	3.52 ^{N.S.}	7.82	Not significant	
	Underweight	2					2
	Normal weight	10					7
	Over weight	1					5
	Obese	2					1

This indicates that quality of life did not depend on the selected factors. The quality of life is independent and not influenced by selected factors.

DISCUSSIONS

The findings of the study revealed that the health care package on self-care management of rheumatoid arthritis was effective to enhance the knowledge and quality of life of early-stage rheumatoid arthritis patients. In this section, the major findings of the present study have been discussed with the result obtained by another researcher.

Findings of the present study indicate that there is deficient knowledge of the patients regarding self-care management of rheumatoid arthritis. The findings of the present study are consistent with the findings of the study conducted [3], which revealed that the knowledge of rheumatoid arthritis patients regarding their disease and management was unsatisfactory.

The findings of the present study are in confirmatory with the findings of the study conducted [4], whose findings showed that there is extreme knowledge deficit among patients suffering from rheumatoid arthritis regarding their disease course and management and need education for the same. The findings of the present study are in consistent with the findings of the study conducted [5], which showed that there is educational deficiency in patients with rheumatoid arthritis regarding self-care and prevention of complications.

Findings of the present study indicated that there rheumatoid arthritis patients were having compromised quality of life. The findings of the present study are consistent with the findings of the study conducted [6], which showed that rheumatoid arthritis affects the quality of life of patients and have a very strong impact on quality of life.

The findings of the present study are in conformity with the findings of the study conducted [7], which showed that rheumatoid arthritis exhibits negative effects on quality of life of patients. The findings of

the present study are in conformity with the findings of the study conducted [8], which showed that the patients with rheumatoid arthritis have a substantially reduced health-related quality-of-life.

The study could not be compared in all aspects of health care package with other studies as no studies were conducted to evaluate the effectiveness of a health care package on self-care management of rheumatoid arthritis. But health care package in terms of educational programs and information booklet was found to be effective strategy in increasing the knowledge and practice of the rheumatoid arthritis patients.

Educational programs and counseling:

The findings of the present study are in conformity with the findings of the study conducted [9], which shows that the designed patient education program was effective to improve the knowledge of rheumatoid arthritis patients and improvement in pain and disability level which are important parameters of quality of life.

The findings of the present study are in conformity with the findings of the study conducted [10], which showed that the knowledge of rheumatoid arthritis patients regarding rheumatoid arthritis and its consequences was poor and the administration of educational program including teaching sessions regarding disease and its self-care and exercises training was effective in enhancing their knowledge and reported less pain and disability.

Information booklet:

The findings of the present study are in conformity with the findings of the study conducted [11], which shows that the Information booklet was effective to enhance the knowledge of rheumatoid arthritis patients of self-care and improvement seen in emotional and psychological aspects which is the important component of quality of life.

Limitations

- Long term follow up could not be carried out due to time constraints
- The present study was limited to 60 rheumatoid arthritis patients who had been selected from a hospital of New Delhi, thus posing restriction to make a broader generalization.
- The study sample was restricted to only one setting and that was to only hospital setting, which limits the generalization of the findings.

Recommendations

- On the basis of present study, the following recommendations are made for the future research:
- The study can be replicated on a large sample of rheumatoid arthritis patients selected from various hospitals; thereby the findings can be generalized for a large population.
- A study can be conducted on nursing officers to assess their knowledge and attitude towards care of rheumatoid arthritis patients.
- A two-phase study can be conducted to assess the prevalence of complications of rheumatoid arthritis along with planning of prevention and early detection.
- A comparative study can be done to assess the effectiveness between routine treatment of rheumatoid arthritis and routine treatment along with complementary therapies (panchkarma).

CONCLUSION

On the basis of the finding's, following conclusion was drawn:

- Both the groups were homogenous and having almost similar sample characteristics.
- The patients were deficit in terms of knowledge regarding self-care management of rheumatoid arthritis as well as deficient quality of life.
- There was significant difference in gain of level of knowledge and quality of life

of patients after administration of health care package on self-care management of rheumatoid arthritis.

- There was a positive correlation between post-test knowledge scores and post-test quality of life scores of patients with early-stage rheumatoid arthritis.
- The health care package was effective in improving knowledge and quality of life of patients with early-stage rheumatoid arthritis.

IMPLICATIONS

The findings of the study have implications for nursing practice, nursing education, nursing administration and nursing research.

Nursing practice

- Prevention of complications of rheumatoid arthritis will result in improving the quality of life of the patient and decrease the chances of disability and other associated diseases.
- Nurses can organize counseling and motivational talk sessions for rheumatoid arthritis patients to develop coping strategies to deal with living long term illness.
- Nurse can conduct rehabilitation and follow up program along with other health care team members for rheumatoid arthritis patients.
- Nurse should be competent enough to assess the complications and risk factors.
- The development of core competencies that are patient focused and evidenced based are also important aspects of nursing practice to address life with rheumatoid arthritis with minimum or no complications.

Nursing education

- Long term chronic illnesses like rheumatoid arthritis have presented along with a number of associated problems and emerged as a syndrome and hence it has a wide area of scope to provide comprehensive nursing care.

- Nursing students should also provide opportunity to learn the incidences, causes, complications, treatment, and life style modifications to be done for rheumatoid arthritis.
- Nurse educators can arrange posting for students to the super specialty hospitals where they have standard physical set up and facilities to deal with rheumatoid arthritis patients.

Nursing research

- Research work more to be conducted in this area to ensure evidence-based practice.
- Epidemiological studies can be carried out on large scales as appropriate epidemiological data is not available.
- More studies related to nursing care of rheumatoid arthritis patients can be carried out and published in the authenticated journals.

Nursing administration

- Nurse administrators have to organize and motivate staff development program for staffs to update their knowledge and skills in the area of evidence-based nursing practice for patients suffering from rheumatoid arthritis.
- Nurse administrator should encourage the nurses to organize health education program for patients with rheumatoid arthritis.

Nurse administrator can encourage display of audio-visual aids in OPD and in patient department which gives information regarding the prevention, early detection and self-care of rheumatoid arthritis.

Declaration by Authors

Ethical Approval: Approved

Acknowledgement: None

Source of Funding: None

Conflict of Interest: The authors declare no conflict of interest.

REFERENCES

1. WHO. Chronic diseases and Health promotions. Available from: <https://www.who.int/chp/topics/rheumatic/en/>
2. K.D. Living with rheumatoid arthritis. [online] MedicineNet. 2018. Available from: https://www.medicinenet.com/living_with_rheumatoid_arthritis/views.htm
3. Khalil Z, Salim B, Nasim A, Malik S. Patients' knowledge on Rheumatoid Arthritis - A study at a tertiary care hospital. [online] The journal of Pakistan medical association. 2017; 67(2):256-260. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/28138181>
4. Puvaneswari et al., Estimate The Educational Need on Knowledge of Rheumatoid Arthritis In The Range of Their Own Disease And Its Self-Care- In A View To Develop A self -care module. [online] International Journal of Recent Science Research. 2017 8(5), pp. 16851-16854. Available from: DOI: <http://dx.doi.org/10.24327/ijrsr.2017.0805.0230>
5. Pytel A, Wrzosek Z. Estimation of patient knowledge on rheumatoid arthritis in the range of their own disease--preliminary study. [online] *Advances in clinical and experimental medicine*. May 2012, Volume 21, Issue 3, Pages 343–51. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/23214198>
6. Eduardo Jose Ferreira Santos, et al. Determinants of happiness and quality of life in patients with rheumatoid arthritis: a structural equation modeling approach. [online] *Annals of Rheumatic diseases*. 2017; 77(8). Available from: <https://ard.bmj.com/content/77/8/1118>
7. Available from: <https://rheumatoidarthritis.net/infographic/ra-not-just-joints-or-bones-but-so-much-more/>
8. Faith Matcham, et al. The impact of rheumatoid arthritis on quality-of-life assessed using the SF-36: A systematic review and meta-analysis. [online] *Seminars in Arthritis and Rheumatism*. October 2014, Volume 44 (2);123-130. Available from: <https://doi.org/10.1016/j.semarthrit.2014.05.001>
9. Soha H Senara, et al. Importance of patient education in management of patients with rheumatoid arthritis: an intervention study. [online] *Egyptian rheumatology and rehabilitation*. 2019;46(1);42-47. Available from: <http://www.err.eg.net/article.asp?issn=1110-161X;year=2019;volume=46;issue=1;page=42;epage=47;aulast=Senara>
10. Stefano Masiero, et al. Effects of an educational-behavioral joint protection

- program on people with moderate to severe rheumatoid arthritis: a randomized controlled trial. [online] *Clinical rheumatology*. December 2007;26(12);2043-50. Available from: <https://link.springer.com/article/10.1007/s10067-007-0615-0>
11. Walker D, et al. Patient education in rheumatoid arthritis: the effectiveness of the ARC booklet and the mind map. [online] *Rheumatology* (Oxford). October 2007;46(10);1593-6. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/17767002>
 12. Scott, Ian, Steer, Sophia. The Genetics of Rheumatoid arthritis. [online] National Rheumatoid Arthritis Society. 2016. Available from: <https://www.nras.org.uk/the-genetics-of-rheumatoid-arthritis>
 13. Cruz G et al. Increased risk of rheumatoid arthritis (RA) among shared epitope-negative (SE-) mothers with shared epitope-positive (SE+) children: Results from the Mother-Child Immunogenetic Study in Autoimmunity (MCIS). [online] The American Society of Human Genetics. 2014. Available from: <http://www.ashg.org/press/201410-rheumarthritis.html>
 14. Brenda B. Spriggs. Can you inherit rheumatoid arthritis? NEWSLETTER. 2018. Available from: <https://www.healthline.com/health/rheumatoid-arthritis-hereditary#genetics>
 15. Costenbader KH, et al. Smoking intensity, duration, and cessation, and the risk of rheumatoid arthritis in women. [online] *The American Journal of Medicine*. 2006. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/16750964/>
 16. Chang, Kathleen, et al. Smoking and Rheumatoid arthritis. [online] *International journal of molecular sciences*. 2014; 15(12); 22279-22295. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4284707/>
 17. Freeman, Jennifer. RA facts- What are the latest statistics on rheumatoid arthritis? [online] Rheumatoid arthritis support network. 2018. Available from: <https://www.rheumatoidarthritis.org/ra/facts-and-statistics/>
 18. Fight arthritis with knowledge and courage. Arthritis India. Available from: <http://www.arthritis-india.com/rheumatoid-arthritis.html>
 19. Cooper, N.J. Economic burden of rheumatoid arthritis a systemic review. [online] *Rheumatology*. 2000; 39(1); 28-33. Available from: <https://academic.oup.com/rheumatology/article/39/1/28/1783791>
 20. Yelin, Edward et al. The work dynamics of the patient with rheumatoid arthritis. Available from: <https://onlinelibrary.wiley.com/doi/pdf/10.1002/art.1780300504>
 21. Walsh DA, McWilliams DF. Mechanisms, impact and management of pain in rheumatoid arthritis. [online] *Nature reviews Rheumatology*. 2014; 10(10); 581-92. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/2486118;5>
 22. Russell AS. Quality-of-life assessment in rheumatoid arthritis. [online] *haemaeconomics*. 2008;26(10):831-46.. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/18793031>
 23. Makelainen P, Vehvilainen-Julkunen K, Pietila AM. Rheumatoid arthritis patients' knowledge of the disease and its treatments: a descriptive study. [online] *Musculoskeletal care*. 2009; 7(1):31-44. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/18697184>
 24. Malaviya AN, Kapoor SK, Singh RR, Kumar A, Pande I., Prevalence of rheumatoid arthritis in the adult Indian population. [online] *Rheumatology Int*. 1993;13(4):131-4. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/8310203>

How to cite this article: Farrha Khan, R.G. Mathur, Madhumita Dey. Evaluate the effectiveness of health care package on self-care management of rheumatoid arthritis in terms of knowledge and quality of life in patients with early stage rheumatoid arthritis. *Int J Health Sci Res*. 2024; 14(1):168-178. DOI: <https://doi.org/10.52403/ijhsr.20240121>
