

Effect of Self-Care Guidelines on Quality of Life among Women with Rheumatoid Arthritis

Faten Hussein Mohammed⁽¹⁾, Nawal Mahmoud Soliman,⁽²⁾ Heba Al-kotb Mohammed⁽³⁾

¹- Teaching specialist in nursing science -,Zagazig technical health institute

²- professor of Community health nursing department, Faculty of nursing, Ain Shams University

³- Assistant professor of family and Community health nursing department, Faculty of nursing, Suez Canal University

Abstract

Background: Rheumatoid arthritis (RA) is a symmetrical disease that initially affects small joints progressing to larger joints and eventually the skin, eyes, heart, kidneys, and lungs. Self-care is of utmost importance for people with rheumatoid arthritis to minimize their complaints, reduce clinic visits and reduce disability. **Aim:** To evaluate the effect of self-care guidelines on quality of life among women with rheumatoid arthritis. **Design:** Quasi-experimental design was used to evaluate the effect of self-care guidelines on quality of life among women with rheumatoid arthritis. **Setting:** The study was conducted at the outpatient clinic of the Rheumatology and Rehabilitation at Suez Canal University Hospitals. **Subjects:** Purposeful sample was composed of 80 women had a definite diagnosis of RA and willing to participated in the study. **Tools:** four tools were used for data collection: Women assessment interview questionnaire, RA self-care practices questionnaire, Arthritis Impact Measurement Scale2 (AIMS2-SF), Health Assessment Questionnaire (HAQ). **Results:** There was a significant improvement in knowledge and selfcare practices of women with RA throughout study phases. Consequently, arthritic women improved in quality of life and reduced in pain intensity after implementation RA self-care guidelines. **Conclusion:** Self-care guidelines helped in reducing pain level and improving quality of life and health status among women with rheumatoid arthritis. Self-care guidelines resulted in beneficial effect on disability and pain scores. **Recommendation:** Self-care guideline can be considered an effective intervention to improve the quality of life, perform activities of daily living in rheumatoid arthritis patients.

Key words: Rheumatoid Arthritis, quality of life, Self-care guidelines.

Introduction

Rheumatoid arthritis (RA) is a chronic inflammatory and autoimmune disease characterized by the attack of the immune system on the body's healthy joint lining causing, sustained inflammation and degeneration of articular structures. This disease involves an increased release of inflammatory mediators in the affected joint that sensitize sensory neurons and create a positive feedback loop to further enhance their release (Fouaini et al., 2022).

Quality of life (QOL) is defined as the general well-being of individuals, based on the individual's culture and life values with respect

to that individual's objectives, expectation, and standards (Goma et al., 2019). Patients with Rheumatoid Arthritis (RA) often report impaired quality of life. Progression level of disease activity leads to limitations in many activities, also daily life activities, resulting in the increasing disability (Szewczyk et al., 2021).

Self-care is of utmost importance for people with rheumatoid arthritis to minimize their complaints, reduce clinic visits, and reduce disability. It refers to a kind of healthy behavior that maintains and improves one's own health through the behavior of patients; heals and manages the symptoms and symptoms of one's own diseases; reduces the influence of diseases

on one's own social functions, emotions, and interpersonal relationships; and persistently treats one's own diseases (Lue et al., 2020).

Self-care in RA includes individualized education on RA, it includes many forms as managing symptoms, medication adherence, physical activity and nutrition (Mollard & Michaud, 2021).

The best form of treatment is to combine a safe pharmacological program with non-pharmacological treatment for patients' maximum benefit to relieve pain. Nonpharmacological treatment through self-care is aimed at decreasing pain. They involve nutrition, exercise programs such as (range of motion, swimming, walking), assistive devices, and complementary therapies methods such as relaxation, cognitive behavioral therapy, social interventions, and targeted interventional options for pain conditions. Non-pharmacologic options have less risks of side effects and less expensive treatment (Udeshi, 2022).

Physical activity and exercise can improve symptoms and reduce the impact of systemic manifestations in RA. Physical activity has been recommended to be a component of standard care for RA patients by The European League Against Rheumatism (Rausch Osthof et al., 2018).

Diet is a major modifiable determinant of chronic diseases and there is a large body of evidence showing that modifications to improve diet quality are directly associated with health benefits. Diet is a topic of interest for people with RA and many have reported that certain foods can help alleviate symptoms and other foods may trigger 'flare-ups' leading to swelling, pain and stiffness (Mastronuzzi & Grattagliano, 2019).

Adherence can be defined as the process by which patients take their medications as prescribed. This process includes initiation of the drug, implementation of the prescribed regimen and discontinuation of the drug. Lack of adherence contributes to an inadequate response or failure to treatment, worsening or disease relapse, and unnecessary treatment

changes. It has been stated that compliance declines over time. This is important because a lack of adherence to pharmacologic therapy is a prevalent issue in the treatment of chronic diseases such as RA (Shafrin et al., 2018).

The nurses can be effectively assisting women with RA in achieving remission or low disease activity by using the self-care practices. The nurse communicates with women in a health education session about measures to facilitate daily living activities (Elsayed et al., 2022).

Significance of the study

Worldwide, the annual incidence of RA is approximately 3 cases per 10,000 population, and the prevalence rate is approximately 1%, increasing with age and peaking between the ages of 35 and 50 years (Bryant, 2022).

The incidence of the RA in Arab countries increased up to 1.5 % of the population in the age group between 30 to 50 years. About 1% of Egyptians are suffering from rheumatoid arthritis, with a higher incidence in females than males (World Health Organization, 2020).

Aim of the study

The current study was aimed to evaluate the effect of self-care guidelines on quality of life among women with rheumatoid arthritis.

Research hypothesis

- Quality of life will be improved after implementation self-care guidelines among women with rheumatoid arthritis.
- Self-care guidelines will improve knowledge and self-care practices among women with rheumatoid arthritis.

Research design:

Quasi-experimental research design one group pre /post was used in the current study.

Setting:

The study was conducted at the outpatient clinic of the Rheumatology and Rehabilitation at Suez Canal University Hospitals.

Subjects:

Purposeful sample was composed of 80 women had a definite diagnosis of RA and willing to participated in the study under the following criteria:-

1-Women was diagnosed with rheumatoid arthritis from more than one year by specialist and listed in clinic records.

2-Age ranged between 20-50 years.

3-Women in first, second and third stage of rheumatoid arthritis.

4-Ambulatory and able to communicate

5- Agree to participate in the study.

Exclusion criteria:

Inability to participate in the study.

Sample size: The sample size is determined according to the power analysis formula as follow:

$$S = \frac{(z\alpha/2)^2 P (1-p)}{D^2}$$

$$n = \frac{S}{(1+S/\text{population})}$$

Where:

S= sample size for infinite population

n= sample size for finite population

P= 0.50

D= 0.08

The sample size was calculated with a 95% confidence level, and a 4% standard error, using the sample size equation for estimation of single proportion, with finite population correction (**Kish and Leslie, 1965**).

Data collection tools

Four tools were used for data collection:

Tool I: women assessment interview schedule; This tool developed by researchers after reviewing of relevant literature (**Elsayed et al., 2022**) to assess women health status. It consisted of four parts as follows:

Part I: Women socio-demographic characteristics: This part of the tool included age, educational level, marital status, area of residence, occupation, and income

Part II: Women clinical data; were collected from women medical record, it was included location of joints (arm/ knee) affected, duration of illness and women habits include smoking, past and present history.

Part III: women knowledge about disease It includes questions about what is rheumatoid arthritis, causes of disease, effect of disease on body, risk factors for it, methods of diagnosis of disease, complication of disease.

Scoring system

For each correct answer was scored by one grade and each incorrect answer was scored with zero. And the scores obtained for each set questions were summed up to the total scores for women knowledge. Total knowledge score was categorized by using scoring system as follows;

- Total score (17 degree)
- Satisfied knowledge; more than or equal 60% (11 degree).
- Average knowledge; less than 60% and more than 50% (10-8 degree).
- Unsatisfied knowledge; less than 50% (less than 8 degree).

Tool II: Rheumatoid arthritis Self-care practices questionnaire

This part of tool developed by the researchers after reviewing the relevant literature (**Ahmed et al.,2019**) and (**Gioia et al.,**

2020). Rheumatoid arthritis Self-care practices includes three sections (medication regimen, nutrition, exercise and joint care).

Section I: - practice related to medication regimen: it composed of five questions. It includes questions about dose and time of treatments, follow doctor instructions, decreasing salt with cortisone along day, taking another dose without doctor order, taking analgesic without eating.

Section II: women self-care about nutrition. It composes of eight questions. It includes questions about diet which decrease inflammation, diets which increase inflammation, taking vegetables and fruit, eating fish instead of meat, healthy drink, drink plenty of water, adding olive oil to diet, eating fast food.

Section III: women self-care about exercise and joint self-care. It composed of sixteen questions. It include questions about doing exercise daily, moving joints, extending joints at rest, adequate sleeping, decreasing movement during fatigue, managing daily living activities along week, doing natural treatment according doctor order, commitment rest during joint stiffness, walking daily, opening cans with palm of the hand, limit movement during swelling and redness, using auxiliary tool at domestic work, moving joints at possible when being swelling and redness, wrapping wool thread over sore and blushing joint, wrapping compression strap at joint stiffness (**Appendix II**).

Scoring system

For each answer **yes** (2 points), sometimes (1 point), and No (0)

- **Total score** (56 degree)
- **Sufficient practice;** more than or equal 60% (34-56 points)
- **Insufficient practice;** less than 60% (less than 34 points).

Tool III: Arthritis Impact Measurement Scale2 (AIMS2-SF): this tool was developed by **Meenan et al., (1980) and modified by**

(Stewart & Ware,1992). to assess quality of life among women with rheumatoid arthritis. This scale assess six items include health assessment in general, role limitation due to physical problems, functional limitation at work, social problems, pain assessment, emotional problem.

Scoring system

The score of each item ranged from 5 to 1. five point for excellent health and graded to one point for poor health. **For pain** 5 indicate less pain and 1 indicate more pain. **Regarding physical health** ranged from 3 to 1. 3 point for not affection and 1 point for great affection. All items are summed high score indicate good quality of life and low score indicate poor quality of life.

Tool IV: Health Assessment Questionnaire (HAQ). HAQ questionnaire was developed by **Fries et al.(1980)**. It is scale for measuring functional abilities of daily living activities for patients with rheumatoid arthritis. and composed of seven subscales. HAQ comprise 14 questions which are divided across 7 different categories of function. These spans include dressing & grooming, arising, eating, hygiene, walking, gripping and opening things, activities as daily living activities. Patients respond to each activity on four-point scale which ranges from zero (which means no disability) to three (which means completely disabled).

Scoring system

The score of each item ranged from 0 to 3. The participants received points based upon their response as indicated: 0 for (without any difficult), 1 (with some difficult), 2 for (sever difficult), 3 for (unable to do). All items are summed and the highest score for each domain is averaged into final score. high score indicate low function ability and low score indicate high function ability.

Validity:

It was established to test the content validity by panel of five experts in community

health nursing and community health medicine from faculty of nursing and medicine. Those experts reviewed the tools for clarity, relevance, comprehensiveness, understanding, and applicability. According to their opinions, minor modifications were done.

Reliability:

Reliability was applied by the researcher for testing the internal consistency of the tool, using test-retest reliability. To test and evaluate the clarity, feasibility and applicability of the research tool. According to the reliability test results, the necessary modification was done. Cronbach's alpha coefficient was calculated to assess the reliability of the developed tool through their internal consistency. Cronbach's alpha coefficient was 0.84.

Ethical considerations:

All ethical issues were taken into consideration during all phases of the study; The Scientific Research Ethics Committee at the Faculty of Nursing, Suez Canal University approved the research at February 2019. The researcher maintained an anonymity and confidentiality of the subjects. The researcher introduced herself to the women and briefly explained the nature and aim of the study to every woman before participation, and women were enrolled voluntarily after the oral informed consent process. Women were also assured that all information obtained during the study was confidential, and used for the research purpose only, and they have the chance to withdraw from the study when they want.

Pilot study:

A pilot study was be carried out on 10% of the study sample (8 women). They attended to the Outpatients Clinic of Rheumatology and Rehabilitation at Suez Canal University Hospital. The purpose of pilot study was to assess tools contents, clarity, consistency and applicability. It also, help to estimate the time needed to complete data collection forms. All of them received clear explanation on the study purpose. Those who shared in the pilot study were included in the study sample as there was no modification in the tool.

Field work

The field study of this work was carried out on three phases:

➤ **Assessment phase**

This was first in the guidelines, where the needs in knowledge and practice were identified in pretest through collection and analysis of the baseline data from field tools. Data collection took a period of 4 months, from the first of January 2021 to the end of April 2021. The researcher collected data three days per week (Sunday, Tuesday, Thursday; these days special for women attendance to the clinic) according to the inclusion criteria. Concerning the first descriptive part of this research, the researcher used the tool and collects the pertinent information.

➤ **Planning phase:**

During this phase, the development of the selfcare guideline were built on assessment of women knowledge about their condition and their practices. As for "self-care" the researcher prepared the contents of the sessions about the standard nursing guidelines for rheumatoid arthritis. It was reviewed by experts in the same specialty (family and community medicine, and family and community health nursing). Self-care booklet was prepared by the researcher using the recent and evidence based on women needs. Each women took the booklet. It was used as a guide for them to upgrade their knowledge and practice about self-care. This period took from May 2021 to the middle June 2021.

➤ **Implementation phase**

The selfcare guidelines sessions were conducting in waiting area in outpatient clinics of the rheumatology and rehabilitation at Suez Canal university hospital. The number of sessions were seven (three were practical and four were theoretical). Each session was conducted according women needs in each unit. The number of women in each session was only 4 or 5 women in order to discuss guidelines with women and facilitate the learning process and allow every woman to participate in the discussion as well as ensure adequate supervision. Sessions were conducted for woman during the morning (The session started at 9AM and end at 11 AM).

The theoretical and training session were conducted together with a demonstration and re-

demonstration for each element of self-care through discussion group, demonstration, interactive presentation, handouts and educational videos were used. Additionally, which covered all items related to rheumatoid arthritis based on their identified needs and in view of the literature. Sessions were conducted in Arabic to get the simple information for women and to understand the program.

The details of selfcare guidelines were consisted of seven sessions four were theoretical and three were practical; **first session** was covered overview on guidelines and objectives of it. **Second session**; definition of RA, causes, signs and symptoms and complications. **Third session** covered different types of medications, special instructions about medication adherence. **Fourth session and fifth and sixth session** are practical sessions covered all types of exercise technique. **Seventh session** covered guidelines about necessary food which affect RA and instructions to facilitate daily living activities.

Evaluation phase

In order to evaluate the effect of self-care guidelines on quality of life, the posttest was administered after implementation of the guidelines. To determine the degree of relation span of knowledge and improving of health and quality of life by change of practice related to rheumatoid arthritis, and assess improving activities of daily living activities. each woman was evaluated via scheduling meeting with them on the same day for her follow-up appointment or by telephone calls. The same tool used in the pre-test were re used.

Statistical analysis

Data entry and statistical analysis were done using SPSS 20.0 statistical software package. Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variables, means and standard deviations, medians and interquartile ranges for qualitative variables. Quantitative continuous data were compared using independent sample t-test for independent variables and one way ANOVA test to compare means of quantitative data.

Qualitative categorical variables were compared using chi-square test. Whenever the expected values in one or more of the cells in a 2x2 tables was less than 5, fisher exact test

was used instead. In larger than 2x2 cross tables, no test could be applied whenever the expected value in 10% or more of the cell was less than 5. Statistical significance was considered at p-value <0.05.

After collection of data it was revised, coded and fed to statistical software IBM SPSS version 20. The given graphs were constructed using Microsoft excel software. All statistical analysis was done using two tailed tests and alpha error of 0.05. P value less than or equal to 0.05 was considered to be statistically significant.

Results

Table (1): - Shows that; 72.5% of the study sample age was (40-50) years with mean score of (45.27±4.12), 61.3% resided in rural area and married (75%), 50% had mild certification, 45% treated with health insurance.

Table (2): Shows that 56.3% of the study sample had rheumatoid arthritis from more than 5 years and hadn't chronic disease (53.8%), 68.8% reported that hadn't family history of rheumatoid arthritis. (35%) and (30%) of the study sample at first and second stage of disease.

Table (3): illustrates that the most affected joint with pain and stiffness was wrist 97.5% -87.5%, followed by shoulders 83%,86.4%, and the least affected joint is foot 31.3%, 58.8%. Concerning affected joints with redness and edema are low; the most affected joint with edema was wrist 50% and the least affected joint with edema was shoulder 2.5%.

Figure (1): illustrates that only 5% from the study sample had poor total score knowledge level after implementation guidelines. 18.8% from the study sample had good knowledge before implementation self-care guidelines, this percentage elevated to 95.5% after guidelines implementation.

Table (4): This table describes that; all of practice domains are improved after implementation selfcare guidelines. Also, there are highly statistically significant relations between all practices domains among studies women before and after implementation selfcare guidelines (p-value <.001**).

Figure (2): portraits that the performance of total practices (nutrition, exercise, medication regimen) of the studied sample; the total satisfactory practice before

selfcare guidelines were 26.3%; these practice improved after implementation of self-care guidelines reached to 76.3%.

Figure (3): shows that total health of the study sample was improved after implementation self-care guidelines. The majority of the studied sample (83.7%) had good health after guidelines.

Table (5): displays that highly statistically significant relation between severity of pain and its effect on work before and after selfcare guidelines. Amount and effect of pain decreased after implementation selfcare guidelines.

Table (6): indicates that presence of high statistically significant positive correlation

Table (1): Frequency and distribution of studied women according to their demographic characteristics (n=80).

Items	No	%
Age		
18-40y	22	27.5
40-50 y	58	72.5
Mean \pm SD	45.27 \pm 4.12	
Residence		
Urban	31	38.8
Rural	49	61.3
Education		
Illiterate	10	12.5
Read and write	17	21.3
Mild certification	40	50
High certification	13	16.3
Social		
Unmarried	7	8.8
Married	60	75.0
Divorced	6	7.5
Widow	7	8.8
occupation		
House wife	44	55.0
Worked	36	45.0
Treatment with health insurance		
Yes	36	45.0
No	44	55.0

between knowledge and health status after implementation selfcare guidelines (p=.001**) as with improvement of knowledge, health status improved. Also, the table indicates that presence of high statistically significant positive correlation between practice and health status after implementation self-care guidelines (p=.001**) as with improvement of practice, health status improved. also displays that presence of statistically significant positive correlation between total self-care and quality of life before guidelines (p value=.005*), and there is high statistically significant correlation between total selfcare and total quality of life after implementation selfcare guidelines (p-value=.001**)

Table (2): Frequency and Distribution of studied women according to their medical history (n=80).

Items	No	%
Years of RA disease		
One year	10	12.5
1-3 year	13	16.3
3-5 year	12	15
More than 5 years	45	56.3
Chronic disease (DM/HTN)		
Yes	37	46.3
No	43	53.8
Family history of RA		
Yes	25	31.3
No	55	68.8
Grades of rheumatoid arthritis		
First stage	35	43.7
Second stage	30	37.5
Third stage	15	18.7

Table (3): Frequency and Distribution of the studied women according to their Joint affected with RA (n=80).

Items	Pain		Stiffness		Redness		Edematous	
	No	%	No	%	No	%	No	%
Hands:								
Wrist	78	97.5	70	87.5	13	16.3	40	50.0
Elbows	58	72.5	53	66.3	5	6.3	19	23.8
Shoulders	67	83.0	69	86.4	14	17.5	2	2.5
Neck and upper back	50	62.5	61	76.3	11	13.8	3	3.8
Legs:								
Pelvis	60	75.0	47	58.8	15	18.8	16	20.0
Knees	72	90.0	62	77.5	17	21.3	30	37.5
Ankles	30	37.5	45	56.3	30	37.5	13	16.3
Foot	25	31.3	47	58.8	10	12.5	10	12.5

Figure (1): Total score of knowledge level among studied women throughout study phases

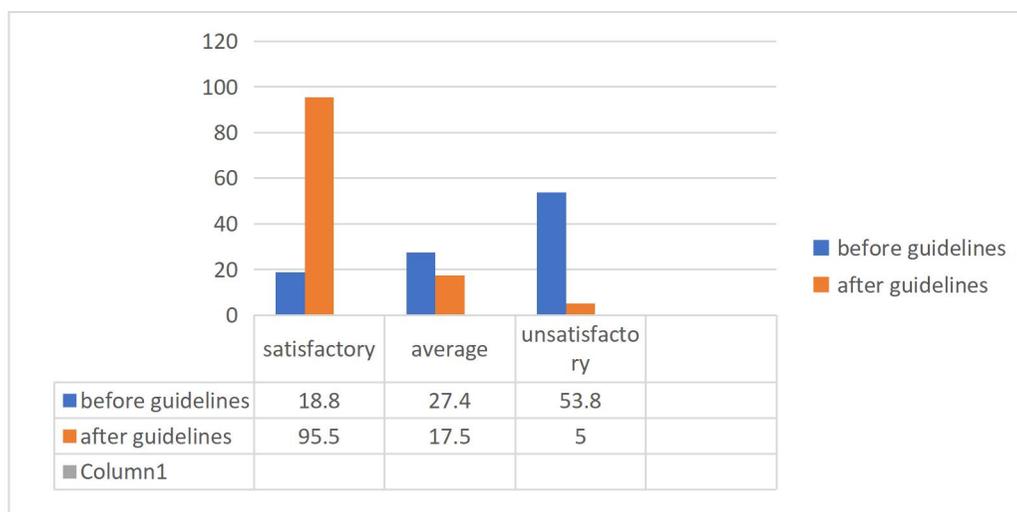


Table (4): Frequency and distribution of studied women according to their total self-care practices items before and after selfcare guidelines (n=80)

Items	Before self-care guidelines implementation		after self-care guidelines implementation		X ²	p-value
	No	%	No	%		
Total practices about treatment						
Satisfactory	28	35.0	60	75.0	25.85	0.000**
Unsatisfactory	52	65.0	20	25.0		
Total practices about nutrition						
Satisfactory	10	12.5	44	55.0	32.31	0.000**
Unsatisfactory	70	87.5	36	45.0		
Total practices about exercise						
Satisfactory	21	26.3	62	77.5	42.08	0.000**
Unsatisfactory	59	73.7	18	22.5		

Figure (2): Total score of self-care practices among studied women throughout study phases (n=80).

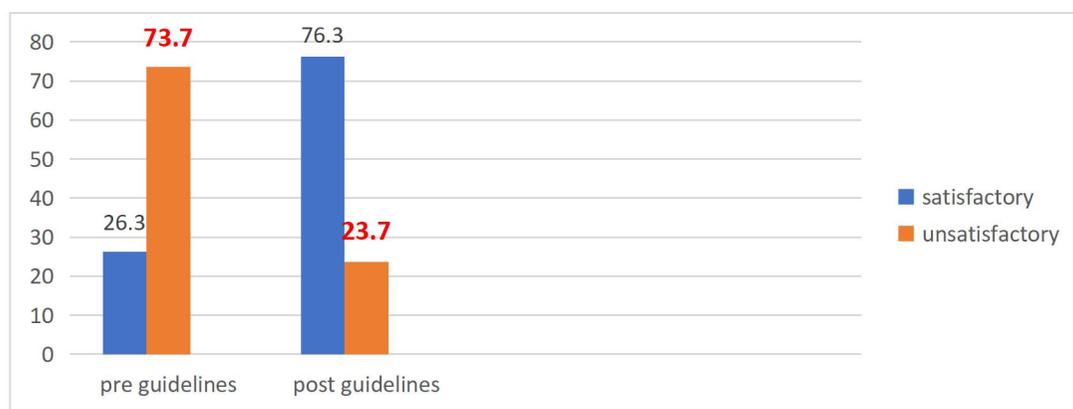


Figure (3): Percentage distribution of studied women according to their health level before and after selfcare guidelines (n=80).

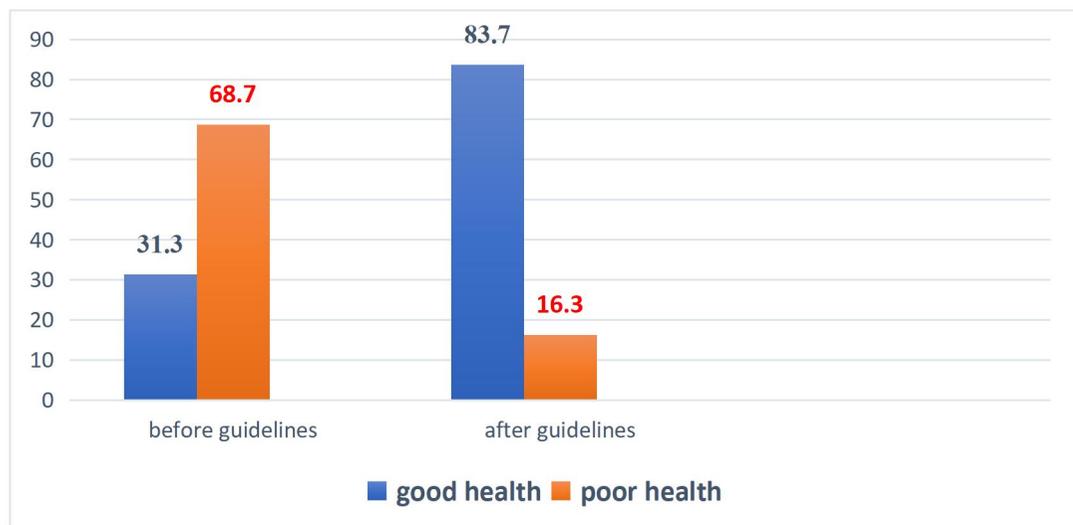


Table (5): Likert pain scale among studied women throughout study phases (n=80).

	Before self-care guidelines implementation		after self-care guidelines implementation		X ²	p-value
	No	%	No	%		
Amount of pain						
No pain	0	0.0	17	21.3	120.56	.000**
Mild	1	1.3	44	55.0		
Moderate	10	12.5	16	20.0		
Somewhat sever	30	37.5	3	3.8		
Extremely sever	39	48.8	0	0.0		
Effect of pain on work						
No effect	0	0.0	17	21.3	107.72	.000**
Mild	3	3.75	40	50		
Moderate	29	36.3	16	20.0		
Sever	34	42.5	5	6.2		
Extremely sever	14	17.5	2	2.5		

Figure (4): Percentage distribution of studied women according to their total quality of life before and after implementation selfcare guidelines (n=80).

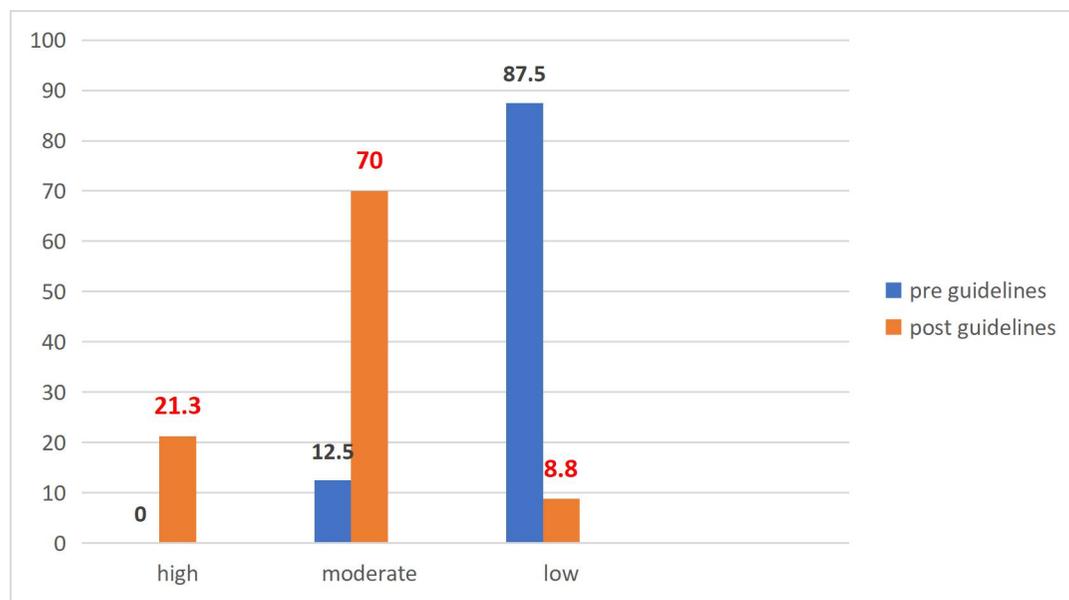


Table (6): Correlation matrix between total knowledge, practices, quality of life and health status among studied women before and after selfcare guidelines

Items		Before self-care guidelines implementation				after self-care guidelines implementation			
		knowledge	Practice	Quality of life	Health status	knowledge	Practice	Quality of life	Health status
Knowledge	R	1	.225	.676	.573	1	.712	.633	.771
	p-value		.045*	.047*	.018*		.042*	.001*	.033*
	N	80	80	80	80	80	80	80	80
Practice	R	.225	1	.964	.585	.712	1	.822	.707
	p-value	.045*		.005*	.062	.042*		.001**	.001**
	N	80	80	80	80	80	80	80	80
Quality of life	R	.676	.964	1	.186	.633	.822	1	.995
	p-value	.047*	.005*		.149	.031*	.001**		.001**
	N	80	80	80	80	80	80	80	80
Health status	R	.873	.585	.186	1	.771	.707	.995	1
	p-value	.018*	.062	.149		.033*	.001**	.001**	
	N	80	80	80	80	80	80	80	80

Discussion

Self-care playing a proactive role in treatment and maintaining a good quality of life and considered a primary form of care for patients with rheumatoid arthritis. A key factor in successful management of RA is the involvement of patients for correct self-care behaviors. High levels of performing self-care behaviors may improve physical function, health status and quality of life (QOL) among RA patients (Nadrian et al., 2019).

In the present study, sample characteristics reflect the nature of patients, the majority of the study sample belonged to the age group (40-50) year. Nearly half of them have no health insurance services. This finding in agreement with Elsayed et al (2022) in Egypt who founded that the majority of the studied sample age more than 40 year and half of the study sample not treated with health insurance.

In the present study, more than half of the study sample had the disease from more than five years. These results reflect that RA develop at thirty years old and before. On the same line Baratzadeh et al., (2021) in Iran who founded that more than half of the studied sample had the disease from five years.

Regarding residence more than two thirds of them resided in rural areas. In the point

view of the researcher; This finding might be due to they attend the clinic in the city because there is good care and this may result in decreasing in knowledge and practice of women regarding their disease. Similar result in Egypt by (Senara et al., 2019) who found that two third of the study sample from rural area. Another study in Egypt by (Mohammed & Ghareeb, 2020) who found that most of the study sample come from rural area. Unlike study in Algeria by (Ouali et al., 2020) who found that most of the study sample from urban.

Concerning occupation, approximately one third of the study sample occupied. The same result was found in Egypt by (Gamal et al., 2021) who found the same percentage from the study sample were occupied. In the present study, two third of the study sample were married. This result may be due to the Egyptian culture that marriage considered one of the life necessities. As the same result by (Nadrian et al., 2019) in Iran who found that more than two thirds were married. Similar finding in Palestine by (Al-Jabil, 2021) who found that most of the study sample were married.

Concerning level of education, the majority of the study sample had mild certification and lower degree. This finding goes in line with high percentage of participants from rural areas, where the education is still low. This finding goes in line with by (Baratzadeh et al., 2021) in Iran who found that the majority

of the study sample had a mild certificate and lower degrees.

In the present study, nearly half of the study sample had chronic disease. This result was in agreement with (**Mohamed and Ghareeb, 2020**) in Egypt who founded the same result nearly. This indicated that chronic disease percentage were elevated among young age women in Egypt.

Regarding family history of rheumatoid arthritis; this study founded that, nearly one third of the study sample had family history, this finding supported by study conducting in Egypt by **Elsayed et al (2022)** who studied the Effect of Nursing Instructions for Rheumatoid Arthritis self-care on Pain Intensity and Functional Ability among Arthritic women and founded the same percentage had family history of rheumatoid arthritis. The results indicate that family history of rheumatoid arthritis is a weak risk for the disease.

In relation to the affected joints with arthralgia, the most affected joint with pain and stiffness was wrist followed by shoulders. Similar finding in Egypt by (**Elsayed et al., 2022**) who found that the majority of the study sample complain from wrist joint. In the point view of the researcher, this result in joint stiffness, arthralgia and arthritis leads to continuous fatigue that reflects on performing daily activities, resulting disability contributes to the burden of disease. Due to the multiple effect of RA, other aspects of the individual life may be negatively affected including the psychological and social functions.

The current study indicated that nearly half of the studied women had inadequate knowledge about the disease causes, effect, diagnosis, complication. These results not bad to some extent regarding women knowledge. In the point view of the researcher this is due to the women had the disease for long time and gained experience about the disease.

Unlike study in Iraq made by (**Salman et al., 2014**) who assess knowledge of patient about rheumatoid arthritis and found that thirty-three of the study sample did not have an idea

about their disease. Also, study obtained in Turkey by (**Tasey and Gurer, 2018**) found that Turkish patients' have inadequate knowledge rheumatoid arthritis. Another study in Begladshi by (**Kamruzzaman et al., 2020**) who found that Disease-related knowledge of Bangladeshi RA patients was poor.

The present study studied three selfcare practices which affect rheumatoid arthritis patients; medication adherence, exercises, nutrition and some methods for joint protection methods. After implementation of selfcare guidelines there was marked improvement in knowledge and practices of women with rheumatoid arthritis. High levels of performing self-care behaviors (like pain management, medication, exercise, nutrition and joint protection) may improve physical function, health status and quality of life (QOL) among RA patients (**Nadrian et al., 2019**).

The application of the present study had appositive effect on the studied women where there was improvement in quality of life and ability to perform daily living activities. Similar finding was founded by (**Ahmed & Rashid, 2021**) in Iraq who studied effect of self-care on quality of life and daily living activities for patients with rheumatoid arthritis and found that significant improvement in the quality of life and performing activities of daily living. Also, selfcare guidelines had positive effect on knowledge and practices related to rheumatoid arthritis. Similar result in Egypt by **Elsayed et al (2022)** who founded that There was a significant improvement in knowledge and self-care practices of women with RA.

Concerning self-care practices regarding medication adherence; before selfcare guidelines; nearly two thirds of the study sample had unsatisfactory practice regarding medication adherence. A similar finding reported by (**Joplin et al., 2015**) in Australia who studied medication adherence in Patients with rheumatoid arthritis and founded that poor patient adherence with medication and this was a significant barrier to management. Another study in Bangkok by (**Taibanguay et al., 2019**) who founded that medication adherence was poor before patient health education. Also

(Mahran et al., 2020) studied Medication adherence among patients with rheumatoid arthritis in Egypt and found that more than half of the studied patient were poor medication adherence. Another study in Egypt by (Kasemy et al., 2021) most of patients had no idea about the medications used in RA treatment.

After implementation of self-care guidelines, the knowledge about medication adherence were improved. Similar finding was founded by (Jopline et al., 2015) in Australia who founded that patient knowledge and practice regarding medication were improved after patient health education. Another study in Bangkok by (Taibanguay et al., 2019) who studied Effect of patient education on medication adherence of patients with rheumatoid arthritis and founded that medication adherence was improved after patient health education.

Regarding exercise, none of the study sample practiced exercise before guidelines, this results in agreement with (Mohamed & Zaki, 2016) in Egypt who found that the majority of the study subjects reported that they were not practicing any exercises related to rheumatoid arthritis. Another study in Egypt by (kasamy, 2021) who founded that few patients with RA perform regular exercise.

In the point view of the researcher These results may be due to the presence of many factors that may be contributing to less practicing of exercise such as low educational level, lack of health awareness about importance and benefits of exercise or the majority of women are busy in the home duties and having no time for practicing it. Also, it might be due to the fact that the women in the present study fear of doing exercises because many complaints act as obstacles for practicing exercise such as pain, swelling, stiffness and continuous fatigue.

After implementation of selfcare guidelines; the women knowledge and practices regarding exercise increased. (Senara et al., 2019) in Egypt founded the same results who founded that patient exercise was improved after patient awareness. Also, Study in Egypt

made by (Elsaid et al., 2020) founded that improvement in patient perception about exercise after self-care guidelines. Similar finding by (Kasemy et al., 2021) in Egypt who found that patient exercise was improved after patient health education.

Dietary habits could represent both disease risk and protective factor, based on the properties of specific foods. Specific dietary choices can indeed show pro-inflammatory effects (for example red meat, salt, excessive caloric intake) or on the contrary reduce inflammation (oil, fatty fish, fruit and others (Oliviero et al., 2015).

After implementation selfcare management the knowledge and practices of the studied women about nutrition which affect rheumatoid arthritis were improved and led to improve health status of the study sample. A study in Iran by (Nezamoleslami et al., 2020) founded that there was relation between diet and decrease risk of rheumatoid arthritis and improve health status.

In the present study, before guidelines the majority of the study sample had poor quality of life. This result was agreed with (Goma et al., 2019) in Egypt who found that rheumatoid arthritis causes impairment of all aspects of QOL (limitation of physical function, physical disability, and pain), mental health disorders. Similar finding by Mandal et al., (2020) in India who reported that two third of the study sample had unsatisfactory quality of life.

In addition, Soliman et al., (2022) in Egypt revealed that nearly half of women with arthritis had poor total quality of life. Unlike these finding, study in Ecuador made by (Cruz et al., 2019) who assessed quality of life Ecuadorian patients with rheumatoid arthritis and found that quality of life for the patients who participated was from moderate to good.

After implementation of self-care guidelines, there was improvement in quality of life. Similar finding in Iraq by Ahmed & Rashid (2021) who found that There was a significant improvement in the quality of life

domains, ability to perform activities of daily living, and functional status after the educational program ($p < 0.01$). Similar finding in study by (Szewczyk et al., 2021) in Poland who found that improvement of the patients' quality of life and health after improvement patient health education.

After implementation of self-care guidelines there was improvement in knowledge and self-care practices among study sample and there was decrease in pain. Similar study in Egypt founded by (Senara et al., 2019) who founded that there was significant improvement in pain intensity after patient health education. Another study in Egypt by (Elsayed et al., 2022) who founded that There was a significant improvement in knowledge and self-care practices of women with RA. also, reduced in pain intensity after implementation instructions for RA self-care practices.

The present study indicated that self-care had positive correlation with quality of life. As with practice of selfcare guidelines, health status improved and quality of life improved. Similar finding in Taiwan by (Chen et al., 2022) who founded that self-care and quality of life are significantly correlated.

Conclusion

The most of the studied women had inadequate knowledge about rheumatoid arthritis before self-care guidelines, which improved after implementation self-care guidelines to reach to the majority of them got adequate knowledge about their disease.

The total practices of the studied women regarding self-care which include medication, exercises, nutrition and joint protection methods were inadequate before guidelines. After implementation self-care guidelines, there were significant improvement in total practices of most of the studied women. In addition, there were significant improvement in pain intensity, women health, and quality of life of the studied women after self-care guidelines.

Recommendations

The following recommendations are made based on the findings of this study:

- A self-care guideline can be considered an effective intervention to improve the quality of life, perform activities of daily living and minimize functional disability in rheumatoid arthritis patients.
- The developed self-care guidelines and its booklet should be implemented in similar setting to reduce complication of rheumatoid arthritis and improve quality of life.
- Replication of the current study on a larger probability sample is recommended to achieve generalization of the results and wider utilization of the designed implementation.
- Applying more attention for self-care guidelines for women with rheumatoid arthritis in order to have positive impact on quality of life.
- Further researches and studies are needed to identify the optional different methods of self-care management to decrease pain and limit joint damage for rheumatoid arthritis.

References

- Ahmed, H. A., Mohammad, Z. A., Abdelmaged, E. S., Shahat, A. A., & Abdalla, M. A. (2019): Effect of Nursing Teaching Guideline on Patient Anxiety before Radical Nephrectomy at Assiut University Hospital. Assiut Scientific Nursing Journal, 7(19), 82-91
- Ahmed, K., Rashid, A. M.(2021): Effectiveness of Self-Management Educational Program on Quality of Life and Activities of Daily Living for Patients with Rheumatoid Arthritis. Health Educ Health Promot, 9 (5),461-468.Available at: <http://hehp.modares.ac.ir/article-5-56133-en.html>. Accessed on (February 15, 2022).
- Al-Jabi, S., Seleit, D., Badran, A., Koni1, A., Al-Jabi, S. (2021): Impact of Socio-Demographic and Clinical Characteristics on Functional Disability and Health-Related Quality of Life

- in Patients with Rheumatoid Arthritis. *Health Qual Life Outcomes*, 19(1), p:241.
- Baratzadeh, A., Kashaninia, Z., Mohaddes, F., Jokar, M.H., Haghani, S.H. (2021):** Effect of Self Care Education on Functional Status of Patient With Rheumatoid Arthritis. *IJN*, 34(131), 70-81.
- Bryant, R. (2022).** Epidemiology of, Risk Factors For, And Possible Causes of Rheumatoid Arthritis. Available at: <https://www.uptodate.com/contents>. Accessed on (May 2, 2022).
- Chen, C.J., Livneh, H., Chen, Wang, Y., Chi Lu, M., Yeh, C., Yen, C., et al.(2022):** The Prescription of Chinese Herbal Medicine and Risk of Endometriosis in Women with Rheumatoid Arthritis: A Population-Based Cohort Study. *Int J Womens Health*, 14, 1603-1612.
- Cruz, Y.C., Montero, N., Salazar, R., Villacis, R.T. (2019):** Quality of Life in Ecuadorian Patients with Rheumatoid Arthritis: A Cross-Sectional Study. *Rheumatol Clin*, 15(5), 296-300. Available at: <https://pubmed.ncbi.nlm.nih.gov/29102587/>. Accessed on (February 15, 2022).
- Elsayed, E. H., Al-kotb, H., Mohamed, A. (2022):** Effect of Nursing Instructions for Rheumatoid Arthritis Self-Care on Pain Intensity and Functional Ability among Arthritic Women, *Journal of Health Care*, 2(13), 691-707
- Elsid, S., Ahmed, A.H., Hassan, M., Mohamed, N. (2020):** Rheumatoid Arthritis: Changing Patients' Perception Toward Exercise and Level of Physical Activity. *OSR Journal of Nursing and Health Science*, 1(9), 18-25.
- Fouaini, M., Basset, C., Mangano, G., Leone, L., Lawand, N., Leone, A., Bareone, R.(2022):** Heat Shock Proteins Alterations In Rheumatoid Arthritis. *Nt. J. Mol. Sci*, 23(5). Available at: <https://www.mdpi.com/1422-0067/23/5/2806/htm>. Accessed on (May 12, 2022).
- Gamal, S., Hatem, H., Eleishi, A., Kamal, E., Mervat Eissa, Nesreen Sobhy, Basma M. Medhat, Nehal El-Ghobashy, Bassel El-Zorkany (2021):** Effect of Education on Disease Activity and Functional Status in Rheumatoid Arthritis Patients The Egyptian Rheumatologist, 43 (2021), 7–11.
- Goma, S. H., Abdel Razic, M. R., & Abdelbary, N. M. (2019):** Impact Of Rheumatoid Arthritis on The Quality of Life and Its Relation to Disease Activity. *Egyptian Rheumatology and Rehabilitation*, 4(46), 304- 312.
- Gioia, A., Luchino, B., Grazia, M.T., Lannocelli, C., Di Franco, M. (2020):** Dietary Habits and Nutrition in Rheumatoid Arthritis: Can Diet Influence Disease Development and Clinical Manifestations? *Nutrients* 2020, 12(5), 1456.
- Joplin, S., Zwan, R., Joshua, F., Wong, P. (2015):** Medication Adherence in Patients with Rheumatoid Arthritis: The Effect of Patient Education, Health Literacy, and Musculoskeletal Ultrasound. *BioMed Research International*, 2015(9). PMID: 26060812. Available at: <https://pubmed.ncbi.nlm.nih.gov/26060812/>. Accessed on (February 5, 2022).
- Kamruzzaman, A K M., Chowdwangry, M.R., Islam, M.N., Sultan, I.(2020):** The Knowledge Level of Rheumatoid Arthritis Patients About Their Disease in A Developing Country. A study in 168 Bangladeshi RA patients. *Clin Rheumatol*, 39(4), 1315-1323.
- Kasemy, Z., El Gazar, S., Badr, I., Farage, N., Fotoh, D.(2021)** Effectiveness of a patient educational program on rheumatoid arthritis

- disease activity. *Minofia Medical journal*, 3(34), 1115-1125.
- Kish, L. (1965):** Survey Sampling. New York: John Wiley and Sons, Inc. available at <http://eu.wiley.com/WileyCDA/WileyTitle/productCd-0471109495.html>. Doi 978-0-4710949-5. Accessed on (May 11, 2019).
- Luo, W., Xiuli, Z., Kaijing, R. (2020):** Self-Management in Patients with Rheumatoid Arthritis. DOI: 10.5772/intechopen.91047 available at <http://dx.doi.org/10.5772/intechopen.91047>. (february 21, 2021).
- Mahran, S., Khedr, T.M., Mohammed, E.M., El-Hakeim, E.H. (2020):** Medication Adherence to Disease-Modifying Anti-Rheumatic Drugs among Patients with Rheumatoid Arthritis at Assiut University Hospital, Egypt. *Egyptian Rheumatology and Rehabilitation*; 3(47). Available at <https://www.researchgate.net/>.
- Mandal, M., Dasgupta, A., Dutt, D., Taraphdar, P., Ghosh, P., Paul, B. (2020):** Quantification of Health-Related Quality of Life Among Patients with Rheumatoid Arthritis: An Institution-Based Study in Kolkata, West Bengal. *J Family Med Prim Care*, 9(8), 3970–3976.
- Mastronuzzi, T., Grattagliano, I. (2019):** Nutrition as a Health Determinant in Elderly Patients. *Curr Med. Chem*, 26 (19), 3652-3661.
- Mohamed, M. E., Ghareeb, A. (2020):** Effectiveness of Structured Self-Care Model on Self-Care, Disability and Pain among Patients with Rheumatoid Arthritis Assiut Scientific Nursing Journal, 22(8), 62-71.
- Mohammed, L., Zaky, M. (2016):** Effect of Self-Care Instruction on Perceived Self-Efficacy among Patients with Rheumatoid Arthritis. *World Journal of Nursing science*, 2(3), 87-96.
- Mollard, E. & Michaud, K. (2021):** Self-Management of Rheumatoid Arthritis: Mobile Applications. *Current rheumatology reports*, 23(1). Available at: <https://experts.nebraska.edu>. Accessed on (february 21, 2021).
- Nadrian, H., Niaz, Y.H., Basiri, Z., Roudsari, A.T. (2019):** Development and psychometric properties of A Self-Care Behaviors Scale (SCBS) among Patients with Rheumatoid Arthritis. *BMC Rheumatology*, 20(3).
- Nezamoleslami, S., Ghiasvand, R., Feizi, A., Salesi, M., Pourmasoumi, M. (2020):** The relationship between Dietary Patterns And Rheumatoid Arthritis: A Case–Control Study. *Nutr Metab (Lond)*, (17), 75.
- Oliviero, F., Spinella, P., Fiocco, U., Ramonda, R., Sfriso, P., Punzi, L. (2015):** How the Mediterranean Diet and Some of Its Components Modulate Inflammatory Pathways in Arthritis. *Swiss Med. Wkly*, (2)145. W14190. Doi: 10.4414/smw.2015.14190.
- Ouali, S., Zemri, K., Kanoun, K., Noria, H., Sellam, F., et al. (2020):** Impact of Gender and Age-at-onset on Clinical and Medical Features of Rheumatoid Arthritis in Western Algerian Population. *Zahedan Journal of Research in Medical Sciences*, 1(24). Available at: <https://brieflands.com/articles/zjrms-108918.html>. Accessed on (February 15, 2022).
- Rausch, A., Niedermann, K., Braun, J., Adams, J., Brodin, N., Dagfinrud, H. (2018):** EULAR Recommendations for Physical Activity in People with Inflammatory Arthritis and Osteoarthritis. *Ann Rheum*, 77(9), 1251–1260.
- Salman, S., Salnuaimi, A., Abdul Latif, Kadhum, R. (2014):** Assessment of Knowledge and Attitude in a Sample of Patients with Rheumatoid Arthritis and Its Association with Disease Activity and Severity: A Cross-Sectional Study. *Open Journal of Rheumatology and Autoimmune Diseases*, 4(4), 226-234.

- Senara, S.H., Abdel Wahed, W.Y., Mabrouk, S.E. (2019):** Importance of Patient Education in Management of Patients with Rheumatoid Arthritis: An Intervention Study. *Egyptian Rheumatology and Rehabilitation*,(46):42–47.
- Shafrin, J., Bognar, K., Everson, K., Brauer, M., Lakdawalla, D.N., Forma, F.M. (2018):** Does knowledge of Patient Non-Compliance Change Prescribing Behavior in The Real World? A Claims-Based Analysis of Patients with Serious Mental Illness. *Clin Outcomes Res*,(10),573–585. doi:10.2147/CEOR.S175877.
- Soliman, A.E., farahat, N.A., Mohamed, S. (2022):** A Quality of life of women with rheumatoid arthritis. *Egyptian Journal of Health Care*; 2(13),111-125.
- Szewczyk, D., Sieklucka, T., Sokolowska, B., Księżopolska, K. (2021):** Improving the Quality of Life of Patients with Rheumatoid Arthritis After Rehabilitation Irrespective of The Level of Disease Activity. *Rheumatol int*,41(4), 781–786.
- Taibanguay, N., Chaiamnuay, S., Asavatanabodee, P., Narongroeknawin, P. (2019):** Effect of Patient Education on Medication Adherence of Patients with Rheumatoid Arthritis: A Randomized Controlled Trial. *Patient Preference and Adherence*; 11(13),119-129.
- Tascy, G., Gurer, G. (2018):** The Knowledge Level of Turkish Rheumatoid Arthritis Patients about Their Diseases. *Anatolian Clinic Journal of Medical Sciences*,1 (23).
- Udeshi, A. R. (2022):** Pain management strategies. *Today's Geriatric Medicine*, 6(7),14.
- World Health Organization (2020):** Available at <https://www.who.int/publications/i/item/WHO-HEP-HPR-RUN-2021.2>. Accessed on (January 21, 2022).