Medical

Effectiveness of instruction program on self-care of patients with rheumatoid arthritis

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Abstract

Objective(s): The present study aims to evaluate effectiveness of instruction program on self-care of patients with rheumatoid arthritis and to find out the relationship between self-care and their demographic characteristics of patients.

Methodology: A quasi-experimental design has been used to recruit (40) patients with rheumatoid arthritis attending the Rheumatology and Physical Rehabilitation center at Marjan Teaching Hospital, Babylon, Iraq from the period of (25th April, 2023) to (31th May, 2024). The sample was purposive non-probability consist of (40) patient. The questionnaire was used to collect the data includes socio demographic, self-care model Questionnaire. the instrument's reliability was determined to be 0.86 using Cronbach's Alpha. Data were analyzed by using (SPSS) package version 25. Descriptive data through determination of: Frequency, percentage, mean of score and standard deviation. Inferential statistical data analysis approach: used by enforcement of the T-Test and ANOVA used for determining the association between Socio-demographic characteristics and self-care.

Results: the study group, 40% of patients at age 50-60 years, 57.5% females, 47.5% high school graduate, 82.5% married, 37.5% housewife, 62.5% had insufficient monthly income, 65% urban resident. The results showed that at the pretest 90% of patients had low level of self-care and 67.5% of them had high level of self-care at posttest. there is no significant difference between patients' self-care at pretest-posttest and age, education, marital status and period of diagnosis.

Conclusions: From the above results, there was a decrease in self-care in the pre-test, and when the instructional program was given, self-care improved in the post-test.

Recommendations: Health care providers must be able to do this by treating rheumatoid arthritis and other chronic conditions by prioritizing proven non pharmacological interventions such as an appropriate self-care program and physical activity as an effective way to improve health outcomes. Self-care educational program to be adopted as a part of the management of rheumatoid patients.

Keywords: instructional program, self-care, rheumatoid arthritis

Introduction

Rheumatoid arthritis (RA) is a systemic inflammatory disease of unknown cause that mainly affects the joints, its main feature consists of chronic inflammation of the synovium, which may in time lead to massive articular destruction and accentuated disability, there may be involvement of multiple organs and extra-articular systems [1].

Chronic diseases require long-term adherence to treatment is important for the control of disease as well as prevention of complications. Non-adhere may lead to worsening of the disease, which may affect patients' quality of life [2].

The onset of RA arises usually between the age of 30 and 50, but may also occur at any other age. The prevalence of RA is believed to be around 1% worldwide, although it varies considerably among different populations. It is less prevalent in developing countries than in developed countries. In the Middle East and North Africa (MENA) region, the epidemiology of RA remains poorly understood with a dearth of data on its prevalence and disease activity. A recent global burden study estimated RA prevalence in the MENA region as among the lowest at 0.16% [2]. While in North American and Northern Europe is 0.5 to 1.1% [3].

According to few studies, within 600 million individuals worldwide who were 65 years of age or older in 2000, there will be 2 billion by the year 2050. The German Federal Statistical Office estimates that 28% of people in 2030 and 33% in 2060 will be over the age of 65 [3].

The etiology of RA is very complex and is yet to be explored properly. However, a variety of risk factors such as hormonal, genetic and environmental can contribute in the development of the disease. The most commonly involved joints are the knee, elbow, metatarsophalangeal joints (MTP), proximal interphalangeal joints (PIP), toe PIP, lumbosacral phalangeal spine, and cervical spine [4, 5].

Common features of RA include daily pain, depression, fatigue, physical disability, stiffness, and associated with psychological features. Pain, inflammation and joint damage is the leading cause for disability [6].

These physical restrictions in turn often lead to psychosocial problems. In the advanced stage, it can lead to substantial loss of mobility and functioning. In common people with RA concerned to have extreme pain and restriction of joint movement [7].

Most RA patients also suffer from muscle loss, progressive evolution that leads the patient to reduce his mobility, the capacity of displacement and the social interaction, affecting the most elementary daily activities. Contributes to decreased physical function and self-care in these patients [8].

Moreover, RA may cause extra-articular signs and symptoms such as, vasculitis, rheumatoid nodules, interstitial lung disease, cardiovascular disease, lymphoma and amyloidosis. In addition, patients with RA may develop specific deformities, like ulnar deviation, swan neck deformity (hyperextension at PIPs), Boutonniere deformity (flexion at PIPs), valgus or Varus, Baker cyst in the popliteal fossa [9].

The RA complications are not limited to apparent restrictions in mobility and activities of daily living, but obscure systemic effects of such diseases can also lead to organ failure, death or serious health problems such as pain, fatigue, sleep disturbance and changes in self-image. Such conditions can cause disabilities and permanent changes in the patients. The chronic nature of rheumatic diseases necessitates obtaining the required knowledge about the disease to make sound decisions for managing the health condition and developing a treatment plan tailored to the patient's lifestyle. Fundamental objectives and strategies to deal with such diseases include suppressing inflammation and autoimmune response, controlling pain, maintaining or improving joint mobility and functional status as well as increasing the patients' awareness about the disease process. Encouraging patients to adopt correct and proper self-care behaviors is an important factor which contributes to successful management of the disease. Self-efficacy also seems extremely important in managing RA. Unpredictable courses of the disease and its varying activity can make the patients find their disease uncontrollable and this can decrease their self-efficacy in handling it [10].

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. People with higher levels of self-efficacy hold a belief that they are able to control their life events effectively. Such a belief, which can affect their behaviors directly, creates a standpoint for them different from that of people with poor self-efficacy, its significant role in the initiation and maintenance of healthy behaviors, in the case of the occurrence of any chronic illnesses such as arthritis [10].

Self-care is usually defined as an individual's capability to deal with symptoms, treatment, physical and psychosocial consequences, and lifestyle changes inherent in living with a chronic status. It involves the decision-making and behaviors performed by individuals to manage illness on a daily basis and promote health, with or without the help or collaboration of healthcare providers [11].

Methodology

A quasi-experimental design has been used to recruit (40) patients with rheumatoid arthritis attending the Rheumatology and Physical Rehabilitation center at Marjan Teaching Hospital, Babylon, Iraq from the period of (25th April, 2023) to (31th May, 2024). The sample was purposive non-probability consist of (40) patient Ethical approval was granted by the Scientific Research Ethics Committee at the College of Nursing, University of Baghdad. Patients' consent to participate in the study was obtained and a consent form was assigned. They were informed of their right to withdraw from the study.

A questionnaire was developed based on a review of relevant literature and studies. The questionnaire consists of two parts; The (I) part includes social and demographic characteristics, which include: age, gender, level of education, marital status, occupation, monthly income, and residence. The (II) part includes self-care, which includes 25 items and the answer to them according to the three-point Likert scale, where it was (always, sometimes, never).

He contents validity of the study tool is investigated through the panel of (10) experts to determine its clarity, suitability, and adequacy to attain the objectives of the study. Internal consistency was performed for the determination of the study instrument reliability. The Pearson correlation coefficient (r) was used for the determination of the reliability of the study instrument. Test-retest correlation coefficients of reliability (r = 0.87).

The study data were analyzed through the Statistical Package of Social Sciences (SPSS), version (23). A descriptive and inferential data statistical approaches were used including frequency, percentage, mean, mean of score, standard deviation, scores, t. test and ANOVA.

Results

Table 1: Distribution of the patient's socio-demographic characteristics (n=40)

Variables		F	%
Age	20-less than 30	4	10.0
	30-less than 40	10	25.0
	40-less than 50	10	25.0
	50-60	16	40.0
	Total	40	100.0
Sex	Male	17	42.5
	Female	23	57.5
	Total	40	100.0
Education	Illiterate	3	7.5
	Read and write	8	20.0
	Elementary school	6	15.0
	Middle school	4	10.0
	High school	19	47.5
	Total	40	100.0
Marital status	Married	33	82.5
	Single	4	10.0
	Widow	3	7.5
	Total	40	100.0
Occupation	Governmental Employee	14	35.0
	Free business	5	12.5
	Retired	4	10.0
	Housewife	15	37.5
	Student	1	2.5
	Disabled	1	2.5
	Total	40	100.0
Monthly income	Sufficient	0	0
	Somewhat sufficient	15	37.5
	Insufficient	25	62.5
	Total	40	100.0
Resident	Urban	23	57.5
	Rural	17	42.5
	Total	40	100.0

F: frequency, %: percentage

The finding of this table indicated that regarding to the study group, 40% of patients at age 50-60 years, 57.5% females, 47.5% high school graduate, 82.5% married, 37.5% housewife, 62.5% had insufficient monthly income, 57.5% urban resident.

Table 2: Distribution of level of patients' self-care of the study group at the pretest and posttest

Self-care levels	Pretest		Posttest	
	F	%	F	%
Low (1-1.66)	36	90.0	0	0
Moderate (1.67-2.33)	4	10.0	13	32.5
High (2.34-3)	0	0	27	67.5
Total	40	100	40	100

The finding shows that at the pretest 90% of patients had low level of self-care and 67.5% of them had high level of self-care at posttest.

Table 3: Difference in patients' self-care about rheumatic arthritis in the study group at pretest period by ANOVA

Variables	Anova	Sum of squares	Df	Mean square	F	Sig.
Age	Between Groups	.070	3	.023	1.279	.296
	Within Groups	.658	36	.018	-	-
	Total	.729	39	-	-	-
Education	Between Groups	.099	4	.025	1.381	.261
	Within Groups	.629	35	.018	-	-
	Total	.729	39	-	-	-
Marital status	Between Groups	.013	2	.006	.332	.720
	Within Groups	.716	37	.019	-	-
	Total	.729	39	-	-	-
Occupation	Between Groups	.243	5	.049	3.402	.013
	Within Groups	.486	34	.014	-	-
	Total	.729	39	-	-	-

The finding in this table indicated that there is highly significant difference between patients' self-care at pretest and occupation at p value (0.013). While, there is no significant difference between patients' self-care at pretest and age, education, marital status.

Table 4: Difference in patients' self-care about rheumatic arthritis in the study group at pretest period by t test

Variables		N	MS	SD	T test	p value
Sex	Male	17	1.435	.164	1.878	0.068
	Female	23	1.515	.103		
Monthly income	Somewhat sufficient	15	1.473	.104	0.296	0.769
	Insufficient	25	1.486	.154		
Resident	Urban	23	1.486	.136	0.242	0.810
	Rural	17	1.475	.141		

(df) = degree of freedom, (P)= significant, MS= mean score, SD= standard deviation, N= Sample size, f=frequency

The finding in this table indicated that there is no significant difference between patients' self-care at pretest and sex, monthly income, resident.

Table 5: Relationship between self-care for rheumatoid arthritis patients and demographic characteristics by T Test

Demographic characteristics T test		N	MS	SD	T test	p value
Sex	Male	17	1.4800	.11552	5.042	0.000
	Female	23	1.6619	.11079		
Monthly income	Somewhat sufficient	15	1.6325	.12004	1.667	0.104
	Insufficient	25	1.5559	.15143		
Resident	Urban	26	1.5673	.15150	1.038	0.306
	Rural	14	1.6168	.12738		

(df) = degree of freedom, (P)= significant, MS= mean score, SD= standard deviation, N= Sample size, f=frequency

The finding in this table indicated that there is no significant difference between patients' self-care at pretest and sex, monthly income, resident.

Table 6: Difference in patients' self-care about rheumatic arthritis in the study group at posttest period by ANOVA

Variables	ANOVA	Sum of Squares	Df	Mean Square	F	Sig.
Age	Between Groups	.027	3	.009	.235	.872
	Within Groups	1.357	36	.038	-	-
	Total	1.383	39	-	-	-
Education	Between Groups	.181	4	.045	1.320	.282
	Within Groups	1.202	35	.034	-	-
	Total	1.383	39	-	-	-
Marital status	Between Groups	.037	2	.018	.505	.608
	Within Groups	1.346	37	.036	-	-
	Total	1.383	39	-	-	-
Occupation	Between Groups	.229	5	.046	1.346	.269
	Within Groups	1.154	34	.034	-	-
	Total	1.383	39	-	-	-

(df) = degree of freedom, (P)= significant, MS= mean score, SD= standard deviation, N= Sample size, f=frequency

The finding in this table indicated that there is no significant difference between patients' self-care at posttest and age, education, marital status, occupation.

Table 7: Difference in patients' self-care about rheumatic arthritis in the study group at posttest period by t test

Variables		N	MS	SD	T test	*p* value
Sex	Male	17	2.481	.189	2.083	0.044
	Female	23	2.601	.174		
Monthly income	Somewhat sufficient	15	2.606	.179	1.467	0.151
	Insufficient	25	2.517	.188		
Resident	Urban	26	2.582	.181	1.263	0.214
	Rural	14	2.507	.194		

(df) = degree of freedom, (P)= significant, MS= mean score, SD= standard deviation, N= Sample size, f=frequency

The finding in this table indicated that there is highly significant difference between patients' self-care at posttest and sex and at p value (0.044). While, there is no significant difference between patients' self-care at posttest and monthly income, resident.

Discussion

The finding of this table indicated that regarding to the study group, 40% of patients at age 50-60 years, 57.5% females There is a study conducted in Iraq that supported the current study, as it was found that the ages of the patients were older than 50 years and 60% females [13].

There is a study that supported the results of this study, as the majority of patients were between 40-60% of their ages [2].

The finding of the present study shows that the high percent 47.5% high school graduate. There is a study conducted in Iraq, Maysan, which agreed with the current study in terms of educational level, as the majority of patients were in high school graduate [14].

There is a study that agreed with the results of this study, as there was a high percentage 50% Mild certification [5].

The finding of the present study shows that the high percent 82.5% married. A study was conducted in Iraq that supported the current study, as it was found that the majority of patients' marital status was married [15].

There is a study that supported the results of this study married 80.5% [10].

The finding of the present study shows that the high percent 37.5% housewife housewife. A study was conducted in Iraq that supported the current results, as the study found that the majority of patients are housewife women [16]. There is a study conducted in Baghdad, Iraq, that supported the current study, as it was found that 80% of patients are housewives [19].

There is a study that agreed with the results of this study, as there was a high percentage of 67.6% (125) were housewives [9].

The finding of the present study shows that the high percent 62.5% had insufficient monthly income. There is a study that agreed with the results of this study, as there was a high percentage 65 % insufficient monthly income [4].

The finding of the present study shows that the high percent 57.5% urban resident. There is a study that agreed with the results of the current study within the patients' residence, and the majority of patients were residents of urban cities, at a rate of 60% [18, 19].

The finding shows that at the pretest 90% of patients had low level of self-care and 67.5% of them had high level of self-care at posttest. There is a study conducted in Iraq that supported the results of the current study, as it found a decrease in patients' self-care before giving them an educational program [16, 17].

A study was conducted in Iraq and Sulaymaniyah that supported the current result. There was a significant improvement in the areas of quality of life, ability to perform activities of daily living, and functional status after the educational program (P<0.01). The study found that the study sample in the pre-test was low in patients' self-management, and after giving the educational program self-management improved. In the posttest [5].

A study was conducted in Egypt that supported the current study, as the researcher concluded nursing instructions for Rheumatoid arthritis self-care help in reducing pain level and improvement in functional ability among women with rheumatoid arthritis. Rheumatoid arthritis self-care result in beneficial effect on disability and pain scores [20, 22].

The finding in this table indicated that there is highly significant difference between patients' self-care at pretest and occupation at p value (0.013). While, there is no significant

difference between patients' self-care at pretest and age, education, marital status. A study was conducted in Sulaymaniyah Iraq that supported the current study, as the researcher concluded that there is a relationship between self-care and occupation in the pre-test, There is no significant relationship between self-care and age, education, and marital status [5].

The finding in this table indicated that there is no significant difference between patients' self-care at pretest and sex, monthly income, resident. The finding in this table indicated that there is highly significant difference between patients' self-care at posttest and sex and at p value (0.044). While, there is no significant difference between patients' self-care at posttest and monthly income, resident. A study was conducted in Iraq that supported the current study, as the researcher found that there is a relationship between self-care and gender in the post-test, and there is no relationship between self-care, monthly income and residence [5].

Conclusion
We conclude from the research results that the level of self-care was low in the post-test, and after the sample was exposed to an educational program, self-care improved in the post-test. The study showed that there is no relationship between self-care and demographic information.

Recommendations
Based on the results, we recommend that caregivers in rheumatology centers conduct development programs for self-care and educate patients about managing the disease on their own to reduce the symptoms of rheumatoid arthritis, while giving patients paper brochures that include general information and advice about self-care.

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