

Psychoeducational Program: Does it Improve Depressive Symptoms in Rheumatoid Arthritis Patients

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Abstract

Background: Depressive symptoms have been listed as one of the most psychological symptoms of patients with rheumatoid arthritis (RA). It is considered a useful target for psychoeducational interventions aimed at improving health status and psychological wellbeing. This study aimed to assess the effect of psychoeducational program on depressive symptoms among RA patients. **Research question:** Does the implementation of psychoeducational program could improve symptoms of depression in RA patients. Quasi experimental research design was utilized to conduct the aim of the study. **Study subjects:** Established diagnosed 80 RA patients was included in the study. Two tools were used; Beck Depression Inventory (BDI) version I to assess depressive symptoms and Health assessment questionnaire-disability index (HAQ-DI) to assess disease-related disability. **Result:** Majority of participants were females with age (20-65) y, there was significant positive correlation between depressive symptoms and disability levels ($r = .81$ at $P = .0001$). Statistically significant difference was detected through assessment (pre, post and followup) regarding depressive symptoms and disability levels ($p = 0.001$). **Conclusion:** it can be concluded that psychoeducational program was effective in improving outcomes in RA patients include depressive symptoms and disability levels. **Recommendation of the study:** regular assessment of depressive symptoms and applying psychoeducational intervention during follow-up visits of RA patients.

Key Word: Rheumatoid Arthritis (RA), Depressive symptoms, Psychoeducation, Disability

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I. Introduction

Rheumatoid arthritis (RA) is a major public health problem among adults around the world^{1, 2}, with 5 and 50 per 100,000 people newly developing the condition each year³. Depressive symptoms have been listed as the most common symptom among psychological problems of patients with RA and may occur with at least mild severity in up to 42% of patients⁴. RA patients suffering from concomitant depression had a 7.2% increase in medical costs^{5, 6} and their likelihood of mortality compared with patients with RA only was more than doubled⁷. Several studies have shown that chronic pain was an important risk factor for developing depression in RA patients⁸. Furthermore, physical comorbidities, disability or limiting the ability to engage in meaningful life activities and dysfunctional beliefs about RA may also be another possible cause for a higher prevalence of depressive disorder in RA patients⁹.

Addressing depressive symptoms of RA is very important because it negatively impacts patients in a variety of ways. It is considered a useful target for interventions aimed at improving health status and psychological wellbeing^{11, 10}. A large number of psychoeducational intervention studies have been developed for use with patients with rheumatic disease including RA. The primary target of the psychoeducational interventions has usually been; pain reduction, but they have also aimed to enhance psychological well-being involving depression and physical functioning and to reduce health care utilization, so improve quality of life^{3, 12}.

While most interventions convey information regarding the condition, they vary considerably in the other components they include. The components can involve specific training such as biofeedback, relaxation, or exercise. They can focus more on social issues such as social support or on cognitive techniques to manage pain or strategies to affect behavioral change. These multi-component interventions have come to be known as psychoeducational, or more usually, self-management interventions^{13, 14} and all are aimed at enhancing patients' confidence and ability to manage their illness and its symptoms on a daily basis and so reduce psychological distress including depressive symptoms^{12, 15}.

Aim of the study

The study aimed at assess the effect of psychoeducational program on the symptoms of depression among RA patients.

Research Question

Does the implementation of psychoeducational program could improve symptoms of depression among RA patients?

Patients and Methods

1- Technical Design:

a. Research design: Quasi experimental research design was utilized in this study.

b. Setting: This study was conducted on a cohort of RA patients' recruited from out-patient clinic of Rheumatology and Rehabilitation Department, Minia university hospital. The Hospital serves as central hospital in Minia Governorate and its suburb areas.

c. Subjects: Established diagnosed 80 RA patients by rheumatologist which equal to 30% from total population size^{16,45}.

Inclusion Criteria:

- Patients aged ≥ 18 years (Adult RA).
- Disease duration \geq one year.
- The patient should be adherent to follow up outpatient clinic.

d- Tools and Data Collection:

A well-designed questionnaire was used to collect the data of the recruited patients. Patient data were obtained from patient's record sheet in rheumatology outpatient clinic and includes; demographic information: age, gender, educational level, marital status, occupation and clinical data (duration of illness).

Tool (I): Beck Depression Inventory (BDI):

(BDI) version I created by Aaron T. Beck (1961), is a 21-question multiple-choice self-report inventory, for measuring the severity of depressive symptoms. The questionnaire contains 21 questions about how the subject has been feeling in the last week; each question has a set of at least four possible answer choices, ranging from 0 to 3, indicating the severity of the symptom. Items 1 to 13 assess symptoms that are psychological in nature, while items 14 to 21 assess more physical symptoms¹⁷. The questionnaire translated to Arabic by Abdel- khalek, (1998), the translated questionnaire had shown a strong validity and reliability. Internal consistency showed a high value for standardized alpha (Cronbach's) = 0.98¹⁸.

Tool (II): The Health Assessment Questionnaire- Disability Index (HAQ-DI).

A functional assessment tool measure disease-related disability and discomfort in patients with RA, originally was developed in 1978 by James F. Fries and colleagues at Stanford University. The questionnaire contains 20 questions grouped into eight subscales as dressing and grooming, arising, eating, walking, hygiene, reach, grip and activities¹⁹. The Arabic version of El-miedany was used. The translated questionnaire had shown a strong validity and reliability.

Internal consistency showed a high value for standardized alpha (Cronbach's): 0.979 while for the subscales it was ranging between 0.941 and 0.948²⁰. The HAQ-DI was calculated as the sum of the scores for various subscales, divided by the number of subscales responded to, and results in a score between (0 and 3). Scores of 0 to 1 is generally represent mild to moderate difficulty, 1 to 2 represents moderate to severe disability, and 2 to 3 indicates severe to very severe disability¹⁹.

2- Operational design:

Phase I: Preparatory phase:

Review of the current and past literature related to the topic by using books and articles.

a. Pilot study

Pilot Study was conducted on 10% from the total number which equal 8 patients of study sample to test the study process and to evaluate the efficiency, clarity, of tools that was used in the study. Subjects who participated in the pilot study were excluded from the actual study.

b. Field work

Each patient interviewed to collect the necessary data, the researcher went to Minia university hospital for two days per week (Sunday, and Wednesday from 9 am to 11 am). The questionnaires filled out by the researcher and also the researcher clarified the meaning of the questions to the patient facilitate understanding the meaning of the statements.

Phase II: Designing phase:

Aimed at planning a psychoeducational program for RA patients.

Phase III: Implementation phase:

The program was conducted by researcher; the purpose of the study was explained through direct personal communication with the studied sample for getting their approval, cooperation as well as voluntary participation, privacy and confidentiality were assured.

Program conducted through the following stages:

- Patient interview; includes introduction about the program and information about RA disease.
- Patient education about general fitness, nutrition, range of motion, pain management and joint protection.
- Effective coping with depression and improving communication skills.

Phase IV: Evaluation phase:

Evaluation was done to measure the effect of program twice:

- a) Post: Immediately after one week of the program implementation to test the level of depression and quality of life.
- b) Follow-up: Second posttest was done three months after program implementation in order to test the continuation of the effectiveness of the implemented program.

3- Administrative Design:

An official letter was obtained from the dean of the Faculty of Nursing, Minia University, as well as the Head of rheumatology and rehabilitation department, asking for permission to collect data and carry out the program. Oral consent was obtained from the patients after explaining the nature and purpose of the study through direct personal communication to gain their acceptance and cooperation.

Ethical Consideration

A written initial approval obtained from the Research Ethical Committee of the Faculty of Nursing, Minia University, there is no risk for study subject during application of this research, the study follows common ethical participation in clinical research, and privacy was provided during data collection. Anonymity and confidentiality was assured through coding the data; and a patient has the right to refuse to participate in the study without any rationale.

4- Statistical Analysis

Recorded data were analyzed using the statistical package for social sciences; version 24.0 Quantitative data were expressed as mean± standard deviation (SD). Qualitative data were expressed as frequency and percentage.

II. Results

Table 1 shows the descriptive statistics of the 80 participants included in the study. In total, 71 (88.7) % of participants were female, and the median age was 42.5 (20-65) y. The majority of participants were married 59 (73.8 %) and 46 (57.5%) of them were primary educated. About one third of the studied sample has moderate activity and the median disease duration was 8 (1:20) y.

Table (1): Descriptive statistic of demographic and clinical data of the studied sample (N= 80).

Variables	N	%	Mean ± sd	Median	Range
Age(y)			43.1±11.1	42.5	20-65
Sex					
▪ Male	9	11.3%			
▪ Female	71	88.7%			
Marital state					
▪ single	3	3.8%			
▪ Married	59	73.8%			
▪ Divorced	9	11.3%			
▪ Widow	9	11.3%			
Education					
▪ Illiterate	30	37.5%			
▪ Primary Education	46	57.5%			
▪ Higher Education	4	5%			
Occupation					
▪ Nonactivity	17	21.25%			
▪ Light activity	16	20%			
▪ Moderate activity	27	33.8%			
▪ Heavy activity	20	25%			
Disease duration (y)			8.6 ± 5.5	8	1-20

Frequency %

Mean ± SD

Median

Figure 1, 2 shows the frequency distribution of levels depressive symptoms and disability levels, It can be noted from **figure 1** that 59 (73.8%) of the studied sample have moderate symptoms of depression, while **figure 2** shows that 97 (83.8%) have moderate level of disability.

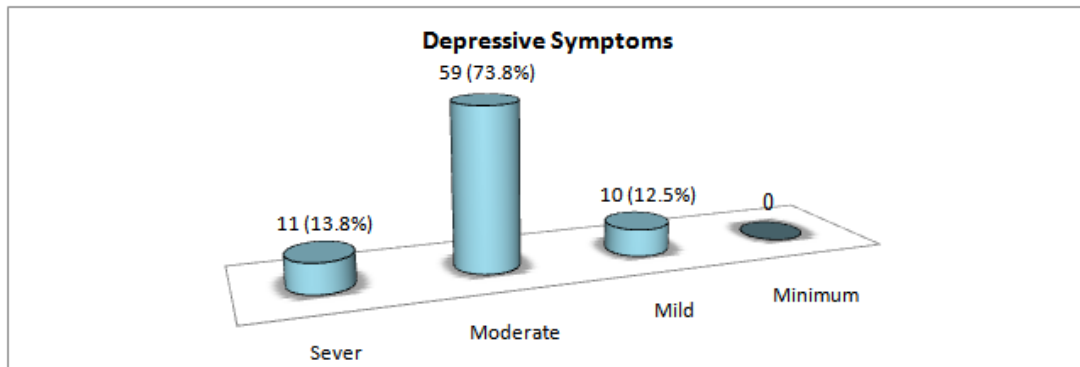


Figure (1): Frequency distribution of levels of Depressive symptoms among the studied sample (N=80)

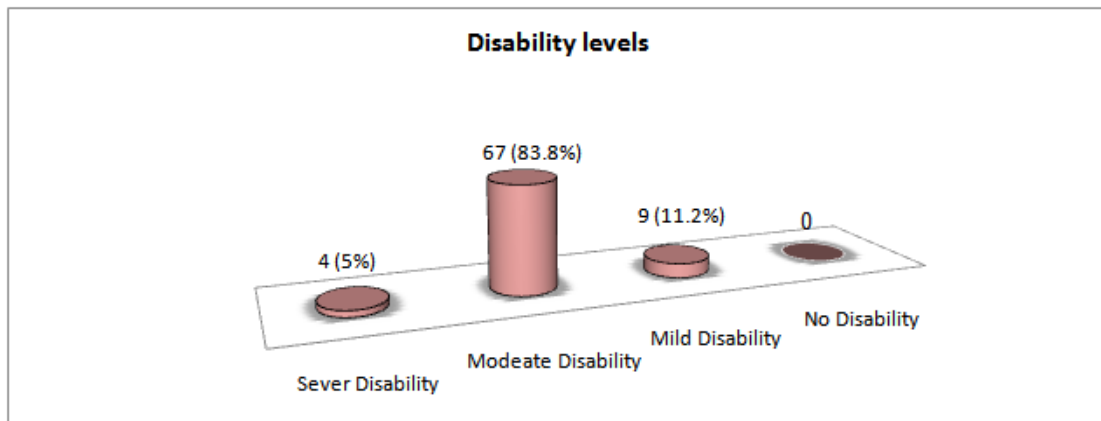


Figure (2): Frequency distribution of disability levels among the studied sample (N=80)

Table (2) shows that there is highly statistically significant difference between three assessment times in relation to depressive symptoms and disability levels among RA patients with p -value ($=0.001$). At pre-assessment it was found that, about three-quarters of the studied sample 59 (73.8) had moderate depressive symptoms and 67 (83.8%) had moderate disability. While at post-assessment 62(77.5%) of them had minimal depressive symptoms and 67 (83.8%) had mild disability. At follow-up it was found that, 34 (42.5%) had mild depressive symptoms and 63 (79.9%) of them had mild disability, while no one had severe depressive symptoms or disability.

Table (2): Frequency distributions of Depressive symptoms and Disability levels at pre, post, and follow-up assessment (N= 80).

Depression	Pre-assessment		Post-assessment		Follow-up		Chi-square test	
	N0	%	N0	%	N0	%	χ^2	p- value
Minimal depressive symptoms	0	0	62	77.5	30	37.5	159.2	0.001*
Mild depressive symptoms	10	12.5	8	10	34	42.5		
Moderate depressive symptoms	59	73.8	10	12.5	16	20.3		
Severe depressive symptoms	11	13.8	0	0	0	0		
Disability levels								
No disability	0	0	3	3.8	1	1.2	117.9	0.001*
Mild disability	9	11.2	67	83.8	63	79.9		
Moderate disability	67	83.8	10	12.5	16	20.3		
Severe disability	4	5	0	0	0	0		

* p -value <0.05 S; ** p -value <0.001 HS

Chi-square test

Correlation between depressive symptoms and disability levels shown in **Figure 3**. There was significant positive correlation between depressive symptoms and disability levels ($r = .81$ at $P = .0001$).

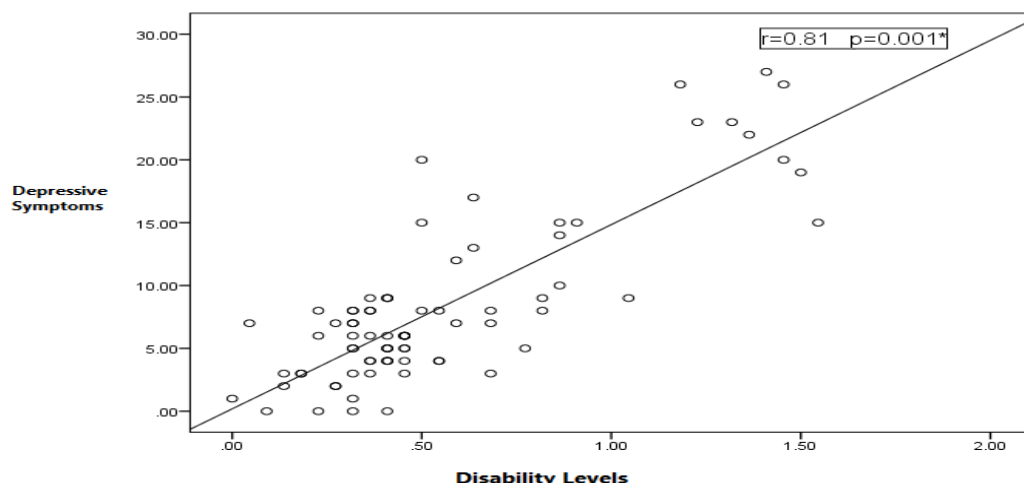


Figure (3). Correlation between depressive symptoms and disability levels to each other's among the studied sample (N=80).

Table 3 shows that there is statistically significant difference was detected between pre and post assessment regarding depressive symptoms and disability levels (t=17.4 and 16.1 respectively at p=0.001) and between pre and follow-up assessment (t=17.9 and 14.4 respectively at p=0.001) and between post and follow-up assessment (t= 5.3 and 5.6 respectively at p=0.001)

Table (3): Comparison of depressive symptoms and disability levels at pre, post, and follow-up assessment (N=80).

Depressive symptoms										
Pre-Post				Pre- Follow-up				Post-Follow-up		
	Mean ±SD	t	P	Mean ±SD	t	P	Mean ±SD	t	P	
Pre	23.4±6.5	17.4	0.001*	Pre	23.4±6.5	17.9	Post	8.1±6.5	5.3	0.001**
Post	8.1±6.5			Follow-up	12.1±5.04		Follow-up	12.1±5.04		
Disability levels										
Pre-Post				Pre- Follow-up				Post-Follow-up		
	Mean ±SD	t	P	Mean ±SD	t	P	Mean ±SD	t	P	
pre	1.3±0.4	16.1	0.001*	Pre	1.3±0.4	14.4	Post	0.54±0.4	5.6	0.001**
Post	.54±0.4			Follow-up	0.73±0.3		Follow-up	0.73±0.3		

*p-value <0.05 S; **p-value <0.001 HS

Anova test

III. Discussion

The present study revealed that female patients constituted more than three quarters of studied sample. This result might be attributed to the fact that, women are afflicted by RA three times more often than men²¹ and females more exposed to hormonal changes and more liable to stress²². This finding was broadly consistent with the results of the study conducted in Egypt by²³ who found that female to male ratio was 18/8 in their study. Similarly,^{25,24,26} mentioned that majority of their studied sample were females.

As regard to age, the present study revealed that means age was 43.1 ± 11.1 (20-65) y, this might be related to that most individuals' first experience RA between 30 and 50 years of age²⁸. Also, the age of participants included in this study was detected to be more than 18 years old. This findings agree with the study of²⁵ who reported that the mean age of the participants was (45 ± 10.9) years. Also, this finding was in congruent with²⁷ who found that mean age of 41.5 ± 11.1 years.

The results concerning to marital status showed that about three quarters of the studied sample were married, this might be due to that the health seeking behavior are more common among the married person as they have more responsibilities and worries regarding inability to perform their duties or loss of work as result of disease disability. This result was in agreed with the results of²⁹ who found that married patients constituted the majority of the studied sample. On the other hand, this finding contradicted with the results of³⁰ who reported that single patients constituted the majority of the studied sample.

In relation to education, results of the present study reported that about two third of the studied sample was primary educated; this could be due to physical disability and symptoms of the disease which act as a hinder

from completing the educational studies. This finding was in agreement with ²⁴ who reported that (69%) of his studied sample are less than high school education level. This finding contradicted with the result of ^{30, 31} who reported that most of the sample involved in their studies achieved higher educational level.

The current findings also revealed that more than one third of the studied sample had no and light activity. This result might be due to physical disability which causes impairment in the ability to perform different activities. This result is consistent with the results of ²⁴, who reported that 86.04% of the studied sample was not working. Moreover, ³⁰ reported that (43.3%) of his studied participants though in occupations with less physical work.

As regard to duration of illness, the current results showed that mean duration 8.6 (5.5) with range 1:20. This might be due to the chronicity of the disorder. This finding is broadly consistent with the results of ³² who stated that Mean disease duration of the studied sample was 8.8 ± 6.3 years. The result is not in agreed with the findings of ²⁴ where the mean duration was 11.2 ± 7.2 years.

In the current study at pre-assessment, more than three quarters of the studied sample had moderate and severe levels of depressive symptoms, this high percentage could be attributed to the chronicity of illness, and physical disability as well as patient's suffering pain. In the same context, somatic symptoms of depression (e.g., fatigue or decreased energy) overlap with symptoms of RA. Consequently, there is a risk that depression in RA may be overestimated and this result was in agreed with results of ³³.

Also at pre-assessment of the current study more than three quarters of the studied sample had moderate to severe level of disability, this result might be related to inflammatory nature of disease ⁴⁰ that causes erosion of the joints, articular damage, multiple comorbidities and disability ^{41,42}. From the researcher point of view this might be explained in the light of high level of depressive symptoms among the studied sample and it is known that depressive symptoms negatively affect the health and functional status.

This result was in agreement with the result of ³⁰ who mentioned majority of his studied sample had moderate to severe disability. On the other hand, the results of ²⁶ is inconsistent with the results of the present study, in which he found that majority of participants experienced mild to moderate functional disability. The inconsistent findings may be related to sampling differences.

The result of current study revealed that there was significant positive correlation between depressive symptoms and disability levels. This might be due to that performing suitable number of activities is associated with a good mental health status and loss of valued activities beyond functional decline has been shown to lead to depression ³⁴. There is no doubt that limited function, as measured by the HAQ, is a strong predictor of depression in patients with RA ⁴⁴ and likewise, functional limitations lead to depression, which increases the disability.

A reduction of 10% in the ability to carry out activities of daily living causes a 7-fold increase in the risk of depression in the following years ³⁵. This result was in the same line with the study of ³⁴ who revealed that a high positive correlation was found between depression and HAQ scores. The study of (35) demonstrated a relationship between the levels of depression and the disability levels.

In the present study the level of depressive symptoms was changed after application of the program with highly statistical significance difference ($p = .001$). Overall, the mean depression changed from (23.4 ± 6.5) at pre-assessment to (12.1 ± 5.04) at follow-up after (3 months). This might be related to the effectiveness of psychoeducational program, where participants were taught how to manage the psychological impacts of RA through relaxation and distraction techniques, improving self-management skills ³⁶.

Knowledge and understanding of disease gained during the program, in addition to self-management strategies, could reduce fear, worry or frustration felt in relation to RA and empowers a sense of control, and consequently people feel less depressed ³⁶. Found similar improvement in depression following participation in the Arthritis Self-Management Program (ASMP). On the other hand ^{37, 38} found that psychological interventions resulted in small reductions in depression post intervention.

The current study's results revealed that there was statistical significance difference ($p = .001$) regarding disability level throughout the three assessment times, this could be attributed to the effect of program. During the program, participants were provided with relaxation, energy conservation and pacing and pain management strategies to assist with managing fatigue. Helping patients to develop coping skills could participate in minimizing the condition's effects on physical wellbeing and level of disability. Results of ²⁹ are in the same line with the current result, who found that there is statistical significance difference regarding distribution of functional disability between post program application and at 3rd assessment time. ³⁹ Reported that the integration of patient education and patient-reported outcome measures (PROMs) led to improvement in functional disability. It is generally assumed that these programs are a highly effective and relatively inexpensive way of providing patients with tools to better manage their arthritis.

IV. Conclusion

Finally, it can be concluded that psychoeducational program was effective in improving outcomes in RA patients include depressive symptoms and disability levels.

Recommendation

In the light of the results of the current study, the following recommendations are suggested:

- Regular assessment of depressive symptoms in patients with RA during follow-up visits.
- Applying psychoeducational intervention to mediate psychological and physical outcomes.

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