# Effectiveness of Psychiatric Nursing Intervention on Pain and Depressive Symptoms among Rheumatoid Arthritis Patients

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**Abstract**
*Background: "Pain remains one of the greatest impeding indications in rheumatoid arthritis (RA)". "Pain is connected with fatigue and psychological distress". "Depression is a main comorbidity in clients with rheumatoid arthritis". the study purposes was to "evaluate the effectiveness of psychiatric nursing intervention on pain and depressive symptoms among rheumatoid arthritis patients". "A randomized controlled trial design two group (study and control group pre/ posttest) was used to achieve the study purpose". The study was conducted at "the clinic of physical medicine and rheumatology, Menoufia University Hospital, Egypt". "A purposive sample of (n=100) clients with rheumatoid arthritis was carefully chosen from selected setting and distributed randomly into two equal groups (study and control group)". Data were collected using the following tools (1) "An Interviewing Questionnaire to assess the socio-demographic characteristics of patients". (2) "Rheumatoid Arthritis Pain scale" (3) "Beck depression scale". The results; revealed that "there was a statistically significant reduction in the level of pain and depressive symptoms in the study group immediately after application of psychiatric nursing intervention and after 2-month follow-up compared with the control group". It was concluded that "the psychiatric nursing intervention has a positive effect on reducing the level of pain and depressive symptoms among patients with rheumatoid arthritis". Recommendation:. (1) psychoeducational nursing intervention should become an fundamental part of the total management of rheumatoid arthritis patients in rheumatology units. (2) Assertiveness training, stress management, and aromatherapy should be given to all clients with rheumatoid arthritis to help them adapt to the disease, reduce pain, and enhance their psychological well-being.*
*Keywords: Psychiatric nursing intervention, Pain, Depressive symptoms , Rheumatoid arthritis*

## I. Introduction

"Rheumatoid arthritis is the main common rheumatic disorders among connective tissue disorders". "It is a persistent, progressive inflammatory disease starting in the synovial membrane, leading to the deformation and destruction of articular tissues, and the damage of articulatory function[1]".The prevalence of rheumatoid arthritis worldwide is 0.3–1% and 0.3% in Egypt and generally starts between the ages of 31 and 61 in females and somewhat later in males. The lifetime hazard of developing RA is 3.6 percent for females and 1.7 percent for males. Out of every 100,000 persons, 41 are diagnosed with RA Out of every 100,000 persons every year. Pain stays the greatest frustrating symptoms of rheumatoid arthritis [2].

"Pain is linked with fatigue and emotional distress". "Arthritis pain worsens emotional distress, and distress, in turn, can increase pain" [3]. "Patients with rheumatoid arthritis experiences several somatic problems, for instance; the deformation and damage of joints, chronic pain, fatigue, loss of weight, and fever". "Rheumatoid arthritis (RA) may cause numerous physical complications for example; obvious limitations in mobility, daily living activities, sleep disturbance, and alterations in self-image". "Such conditions can cause disabilities and long-lasting changes in the patients". "Besides these, the patients need to cope with emotional sufferings, mainly manifest by feelings of loss, social difficulties as a result of changes in fulfilling social roles, anxiety, and depression [4] ".

"Depression is confirmed to be associated with inflammatory disease activity, physical disability, and poor treatment consequence [3] ". "Depression is a major comorbidity in patients with RA and it may occur either chronically or intermittently".. "Depression is a disorder labeled as constant sadness and loss of interest in daily activities". "Cognitive symptoms of depression contain loss of self-esteem, hopelessness, while somatic symptoms can comprise fatigue, sleeplessness, and loss of appetite [5]"."Studies have shown that comorbid depression increases disabilityand reduces the quality of life that leads to loss of entertaining and social activities". Additionally, "Depression is a risk factor for non-suicide mortality in patients with RA[6], and also

accompanying with higher unemployment, work productivity losses, poor compliance to treatment, and increased medical care costs to both patients and society [7] ".

"Best care of clients with rheumatoid arthritis (RA) contains together pharmacologic and nonpharmacologic treatments". medication-based treatments include numerous types of agents; as "nonsteroidal anti-inflammatory drugs (NSAIDs), nonbiologic and biologic disease-modifying antirheumatic drugs (DMARDs), immunosuppressants, and corticosteroids". "Many nonpharmacologic managements are accessible for this illness, containing exercise, nutrition, massage, psychotherapy, Reducing stress, physiotherapy and surgical treatment [8] ".

Nurses play a critical role in treating people with arthritis and playing a crucial role in pain control. Therefore, nurses should improve their knowledge and skills through continuing education and train well on ways to relieve pain, both pharmacological and non-pharmacological, and know what is available, and how and when it is used safely [9]. Psychiatric nurses should constantly evaluate rheumatoid arthritis patients to detect early symptoms of depression and provide them with emotional support if these symptoms are identified [10]. "Psychiatric nursing intervention helps rheumatoid arthritis patients acquire strategies that help them adapt to their illness in order to relieve pain intensity, reduce depression, improve quality of life, and improve physical and emotional function [11] ".

## II. Significance of the study

"Rheumatoid arthritis (RA) is a systemic autoimmune disease that appears in the form of inflammatory arthritis and extra-articular involvement [12] ". "A systematic review of literature on depression among rheumatoid arthritis patients shown a high prevalence of depression extending from 9.5% to 41.5%". "Around 30% of rheumatoid arthritis patients developed depressive symptoms within 5 years of the diagnosis of rheumatoid arthritis [13]". "An Egyptian study done [14].on 50 RA patients in Rheumatology and Rehabilitation Department and Outpatient Clinic, Assiut University Hospitals"; their results revealed that "most of the patients with high disease activity (85.7%) were depressed based on Zung self-rating depression score ". Also, An Egyptian study done by [15]; entitled "Relationship between disease activity and depression in Egyptian patients with rheumatoid arthritis", they found "the prevalence of depression was 15.29% out of 170 RA patients attending the outpatient clinic of Rheumatology and Rehabilitation department".

"Because psychiatric nursing interventions have important role in reducing the intensity of pain, reducing depression, increasing quality of life, and improving physical and emotional function of patients". Therefore, this study aims to evaluate the effectiveness of psychiatric nursing intervention on pain and depression symptoms among rheumatoid arthritis patients".

**Theoretical and Operational Definitions:**
1- "Depression is a mood disorder which expressed through sustained, long-term sadness, and diminishing interest in everyday activities; cognitive symptoms include absence of self-worth, hopelessness, while somatic symptoms can include fatigue, insomnia, and diminishing appetite" [5].In this study, "it is well-defined by means of feelings of powerlessness and pessimistic outlook due to lack of control over arthritis pain that negatively affect quality of life and interfere with daily functioning that will be measured according to Beck (1961) ".
2- "Pain is an unpleasurable sensory and emotional experience accompanying with real or possible tissue damage" [16].In this study, " it is well-defined as significant stiffness, heat and soreness in the joints accompanied by aching muscles all over the body and that will be measured according to Anderson (2001) ".
3- "Nursing intervention: is well-defined as A particular nursing act, management, technique, activity, or service intended to attain an consequence of a nursing or medical diagnosis for which the nurse is accountable" [17].In the present study, " it is well-defined as a psychiatric nursing intervention that will be constructed by the researcher". "It involves applying several techniques such as Relaxation training, assertiveness skill training, pleasant activities, physical exercises and massage with aromatic oils". " Also use of effective strategies to replace a negative thought with a positive one". "It will be evaluated through a structured interviewing questionnaire, tool 2 and tool 3".

## III. Subjects and Methods
### 3.1 aims of the study
Evaluate the effectiveness of psychiatric nursing intervention on pain and depressive symptoms among patients with rheumatoid arthritis.
### 3.2 Research design
Randomized control trial design, two groups (study and control group pre/ posttest) was used to achieve the study purpose.

### 3.3 Research hypothesis

- The patients who will participate in the psychiatric nursing intervention (study group) will have lower mean scores of pain immediately after implementation of psychiatric nursing intervention and after2 months of follow-up than the patients who don't receive psychiatric nursing intervention (control group).

- The patients who will participate in psychiatric nursing intervention (study group) will have lower mean scores of depressive symptoms immediately after implementation of psychiatric nursing intervention and after 2 months of follow-up than the patients who don't receive psychiatric nursing intervention (control group).

### 3.4 Research setting

- At the clinic of physical medicine and rheumatology, Menoufia University Hospital, Egypt.

### 3.5. Research Subject

A purposive sample of 100 patients with rheumatoid arthritis who attending a clinic of physical medicine and rheumatology, Menoufia University Hospital

Sample Size:

The sample size was calculated using Epi Info (2000) program built on the pertinent review of past literature, (Eusden, Matcham and Hotopf, 2017), they reported that the prevalence of depression among rheumatoid arthritis patients was 9.5%, the sample size has been calculated using the following equation: $n = (z2 \times p \times q)/D2$ at power 80% and CI 95%, the sample size will be 100 patients

(n) = Sample Size

     d= confidence level (95%)

     P = margin of error (0.05).

So, the sample size was 100 patients with rheumatoid arthritis (RA).    Sampling technique

    A purposive sample of 100 patients with rheumatoid arthritis (RA) divide randomly into two groups, study group (50 patients) who receive psychiatric nursing intervention and control group (50 patients) who did not receive the psychiatric nursing intervention. Those patients were selected based on the following inclusion criteria:-

-     Adult both sex patients of 1st and 2nd stages of rheumatoid arthritis
-     Age ranges between (21-55)
-     Free from any history of psychiatric illness, other chronic physical illness, and neurological disorders.
- Agree to share in the study

### 3.6. Tools of the Study

    Data were gathered using the following tools:

**Tool one: An Interviewing Questionnaire:**

It was constructed by the researcher in the Arabic language after revising the interrelated literature. It was used to collect data allied to socio-demographic characteristics and disease history such as; age, gender, marital status, level of education, occupation, family income, family history, and disease duration of rheumatoid arthritis.

**Tool two: Beck depression scale:**

    "This scale was established by Beck (1961) as a screening technique for measuring symptoms of depression". "It was translated into Arabic and tested by Swef and El Sayed, (1999) ". "It consists of 21 items presented in multiple-choice format., ten items express emotions(sadness, pessimism, crying, agitation, sense of failure, feeling guilty, feeling of punishment, self-dislike, self-criticism, feeling of dissatisfaction), six items cover behavioral changes(suicidal thoughts/wishes, indecisiveness, perception about body image, social withdrawal, loss of interest in sex, preoccupation with health) and five items express somatic symptoms(changes in weight, changes in appetite, loss of energy, sleeping disturbances and tiredness or chronic fatigue) ". "Items are scored on a ranking type scale based on severity of symptoms where Items (1- 7 and 15) are answered on a scale from 1to5, Items (9 - 10) are answered on a scale from 1to3 and Items (8, 11-21) are answered on a scale from 1to 4. The total score is 90".

**The scoring system:**

-     21-29   no depressive symptoms.
-     30-44    mild depressive symptoms
-     45-69   moderate depressive symptoms
-     70-90   severe depressive symptoms

**Tool three: Rheumatoid Arthritis Pain Scale (RAPS)**

"It was originally established by Anderson (2001) to measure pain in rheumatoid arthritis patients". "It was translated by El-Sayad, (2014) and modified by the researcher". "It contains 24 items that measure descriptions of pain". "Rheumatoid Arthritis Pain Scale (RAPS)   includes 4 subscales. Physiologic component (morning stiffness, pain on motion, tenderness in joints, swelling in joints and level of fatigue and malaise), sensory-discriminative component (intensity, duration, location, and quality of pain sensation), affective component (unpleasantness, distress, and annoyance), and cognitive component (longer term aspect of having pain such as depression, freedom, influence of pain in daily activity, self-esteem ,memory and past experience) ".   " Items are scored on a 3-point Likert-type scale from (never), (sometimes) to (always) (Appendix 3). The total score is 72".

**The scoring system:-**
* Less than 35 no pain level.
* 35-47 mild pain level.
* 48-59 moderate pain level.
* 60-72   severe pain level.

**3.6.1. Reliability of the instruments**
"The internal consistency of the questionnaire was calculated using Cronbach's alpha coefficients". "The reliability of the tools were done using test - retest reliability and proved to be strongly reliable at 0.85 for tool two and at 0.90 for tool three".

**3.6.1. validity  of the instruments**
"The study tools were  examined for content validity by a jury of five specialists in the field specialty of psychiatric mental health nursing, psychiatric medicine, community nursing, and psychologist to ascertain relevance, coverage and clearness of the content". "The tools were approved to be valid following the judgment of the experts".

**3.7. Procedure**

**Administrative approval:** "An official letter was issued from the dean of Faculty of Nursing, Menoufia University, Egypt; then send to the head of an outpatient clinic of Menoufia University Hospital, Shebin Elkom after explanation of the study aims  to get the permission". **Ethical considerations: -**   The researcher clarifies the purpose  of the study to every participant and then takes their informed consent to participate in the study. " The subjects were assured that all information would be confidential to assure the confidentiality of the participants". " The participants were secure that their participation in this research was voluntary and they can withdraw from the study at whatever time or can reject to share in this research". It was explained that there were not at all charges to join in the study. **Pilot study**:   "A pilot study was done for  10% from  the total sample (10 patients) after developing the tools and before  collecting data  to examine  the applicability, feasibility and clearness of the tools and to calculate  the needed time to fill the tools".  The pilot study sample  were excluded from the actual study. **Data Collection procedure:** "An extensive literature correlated to the study area was done including electronic dissertation, available books, articles, and idea from external periodicals sources". The data were gathered  from "the clinic of physical medicine and rheumatology of Menoufia University Hospital, Shebin El Kom, Egypt; using the above-mentioned tools for data collection". " the psychiatric nursing intervention  was applied through five months in the period from the beginning of September 2019 to the end of January 2020". The entire participants who meet the inclusion criteria were involved in this research, The study subjects (100 patients) were divided  randomly into two equal groups (study and control group ). The study group (50 patients) was distributed into four groups ranged from 12 to 13 patients, each group attends thirteen sessions, every session takes approximately 60 to 90 minutes. The researcher meets each group twice per week from 9 AM to 12 AM. After completing application of  psychiatric nursing intervention sessions, a posttest was carried out   immediately after the intervention sessions and two months later of follow- up. Application of the study passed into three stages (pre evaluation stage, application stage and evaluation stage).

 **(1): Pre evaluation stage :-**
"Once the approval was attained to continue this study, a relaxed, private place was selected for the interview". "Orientation was done about the researcher's name, purpose, significance, content of the study". The pre-test was done   for  all study participants  (100 patients), which are divided into control group (50) who don't receive psychiatric nursing intervention and study group (50) who receive psychiatric nursing intervention

by using a designed interviewing questionnaire, the Beck depression scale, and the Rheumatoid arthritis pain scale.

**(2): Application Stage**:-

This study hypothesized that "The patients who will participate in the psychiatric nursing intervention (study group) will have lower mean scores of pain and lower mean scores of depressive symptoms immediately after implementation of psychiatric nursing intervention and after2 months of follow-up than the patients who don't receive psychiatric nursing intervention (control group)". The researcher met the study group and inform them that they will attend 13 sessions which distributed as the following (12 sessions) within three months (two days/week), and one session after 2 months of follow-up to evaluate the effectiveness of the program. The Psychiatric nursing intervention has been applied using many teaching methods such as brain storming, lectures, discussion, demonstration, re- demonstration. In addition, view videos, role plays, photos, and evidence based booklets were used as media. At the end of each session, the researcher summarizes session content, clarifies vague items and gives homework.

**The sessions included in the application stage were:**
**Session 1: Introduction and orientation**
It concerned with open discussion for identification, group integration, purpose clarification, and time table allowed for the program. Orienting patients with program sessions and session rules which includes:- confirming privacy and confidentiality of research information, commitment to session dates and time, avoiding interruptions while others talk, and applying essential activities during every session. Then pretest was applied to them by means of a designed interviewing questionnaire, Beck depression scale, Rheumatoid arthritis pain scale.
**Session 2: overview about the disease**
- The researcher welcomes all patients then asks them to answer the following question: What is rheumatoid arthritis (RA)?, and so on. After listening to their answers, the researcher provides a detailed explanation of the concept and symptoms of rheumatoid arthritis (RA) and complications caused by rheumatoid arthritis.
**Session (3): therapeutic treatments**
It concerned with providing a detailed explanation about medical treatment and therapeutic nutrition for rheumatoid arthritis patients.
**Session (4): Relaxation training**
It focused on applying deep breathing exercises, meditation steps, and body scanning steps with the patients and showing photos that illustrate how to practice these techniques. Then, the researcher asks patients to apply these exercises at home three times per day continuously.
**Session (5): physical exercises**
The researcher demonstrates a range of motion exercises; strengthening exercise and aerobic exercises as a model to clarify steps for the patients and shows photos that explain how to practice these exercises. Then, the researcher requests patients to apply these exercises at home twice times per day regularly .
**Session (6): pleasant activities**
The researcher displays photos that illustrate how to practice simple, inexpensive pleasant activities and also can be done individually and encourage patients to change this activity every 3 months to avoid a routine pattern. then, the researcher asks patients to practice these activities in daily living.
**Session (7): Activity pacing**
It focused on explaining the steps of activity pacing and shows photos that explain how to practice it in daily living.
**Session (8): Joint protection**
It focused on providing a detailed explanation about joint protection principles that involve respect pain, choose the strongest joint for a job, practice appropriate body mechanics and decrease extra body weight. Next, the researcher requests patients to practices principles of joint protection in daily living continuously.
**Session (9): Massage with aromatic oils**
It concerned with providing a detailed explanation about (1) the concept and benefits of aromatherapy, (2)types of Essential oils used to relieve pain and depressive symptoms associated with rheumatoid arthritis, (3) precautions for safe use of essential oils and dilution methods. Also, displaying videos that explain how to practice massage with aromatic oils. Consequently, the researcher asks patients to practice massage with aromatic oils for all their body twice per day.
**Session (10): Identify and change negative thoughts**
It focused on offering a complete clarification about steps of changing negative thoughts as inform patient to (1) write and identify negative thoughts that make he/she feel sad, (2)write the opposite of all negative thoughts that he/she wrote earlier in another paper, (3) ignore the negative thoughts through make it as trivial as possible

and do other things such as exercise, tear the negative thoughts sheet and repeat this step - write down negative beliefs and then discard them (4) Read positive beliefs aloud daily, especially before bedtime (5) stop complaining that he/she is unlucky (6) stay away from people who repeat negative and frustrating phrases,(7) Be convinced that negative thoughts are incorrect thoughts and should not think in it, (8) Keep thinking about the goal, not in fears and doubts, and be convinced that things go well. (9) to be thankful that what is happening is greatly fewer than negative thoughts imagined to us. After that, the researcher asks patients to practice these steps daily with each thought contribute to negative emotion and behavior.

### Session (11): Assertiveness skill
It concerned with provide a full description of various techniques to enable the patients to become assertive persons which include: (1) Express personal opinion with conviction and consent in approval and dissent. (2) Get used to the rejection in an appropriate manner. (3) Express inner feelings and emotions honestly and clearly with clear and spoken words. (4) Get used to expresses opinions and usage the speaker's pronoun" I" instead of "You" to express one's feelings and wishes. (5) Get used to produce appropriate physical responses. (6) When someone interrupts what you say, before you finish your words or clarify your idea. Wait for finish his speaking, and then completely ignore what he said and resume clarifying your original idea. (7) Say "No" assertively. Next, the researcher displays videos that clarify how to practice assertiveness techniques in daily living and give several examples. Accordingly, the researcher asks patients to repeat these skills and practice assertiveness methods constantly in their daily life.

### Session (12): session for the post- test
The researcher appreciates all subjects for presence and completing the sessions. The post-test was given to them to evaluate psychiatric nursing intervention effectiveness using the Beck depression scale and Rheumatoid arthritis pain scale. Then the researcher informs them about the time of the follow-up test (two months later).

### Session (13): final session for the follow up -test
The researcher appreciates all subjects for attendance. A follow-up test was conducted using "the Beck depression scale and Rheumatoid arthritis pain scale" to appraise psychiatric nursing intervention effectiveness
**(3): Evaluation Stage:**
The post-test was given (Beck depression scale and Rheumatoid arthritis pain scale)to them immediately after implementation of psychiatric nursing intervention and after2 months of follow-up to evaluate the effectiveness of psychiatric nursing intervention on pain and depressive symptoms among patients with rheumatoid arthritis.

### Statistical methodology
"Data were collected, tabulated, statistically analyzed using an IBM personal computer with Statistical Package of Social Science (SPSS) version 20". "Quantitative data were conveyed as mean & standard deviation (X±SD) ". "Chi-Squared ($\chi2$) was used for qualitative variables". "**Chi-square test ($\chi^2$):** " used to study relationship between two qualitative variables". "**Fischer exact test:** for 2 x 2 tables when expected cell count of more than 25% of cases were less than 5". "**Pearson correlation (r):** "it measure the association between two quantitative variables". "A significant level value was considered when P-value <0.05 and highly significant level value was considered when P value < 0.001 while P value of >0.05 indicated non-significant".

## IV. Results
Table (1): displays" comparison of socio demographic characteristics for study and control group (N =50 for each group) ";this table reveals that "there is no statistically significant difference between study group and control group regarding their socio-demographic characteristics".

Figure (1): shows" the mean score of of total pain among study and control group before, immediately after psychiatric nursing intervention and after 2 months of followup (N =50 for each group) "; this figure clarifies that "there is no significant difference between study and control group regarding the total mean score of pain before nursing intervention,while there is statistical significant reduction of total mean score of pain immediately after psychiatric nursing intervention and after 2 months of followup in the study group compared to control group"

Figure (2): shows" the mean score of depressive symptoms between the study and control group before, immediately after psychiatric nursing intervention and after 2 months of followup (N =50 for each group) "; this figure shows" there is no significant difference between study and control group in the mean score of depressive symptoms before the intervention, while there is statistical significant reduction of total mean score of depressive symptoms immediately after psychiatric nursing intervention and after 2 months of followup in the study group compared to control group".

Table (2): reveals "Pearson Correlation between total mean score of pain and total mean score of depressive symptoms of the study group before and immediately after the psychiatric nursing intervention"; this table shows that "there is a highly statistically significant positive correlation between total pain mean score and depressive symptoms mean score of the study group before and immediately after psychiatric nursing intervention where p-value (p = 0.0.001) ".

**Table (1): Comparison of socio demographic characteristics for study and control group (N =50 for each group)**

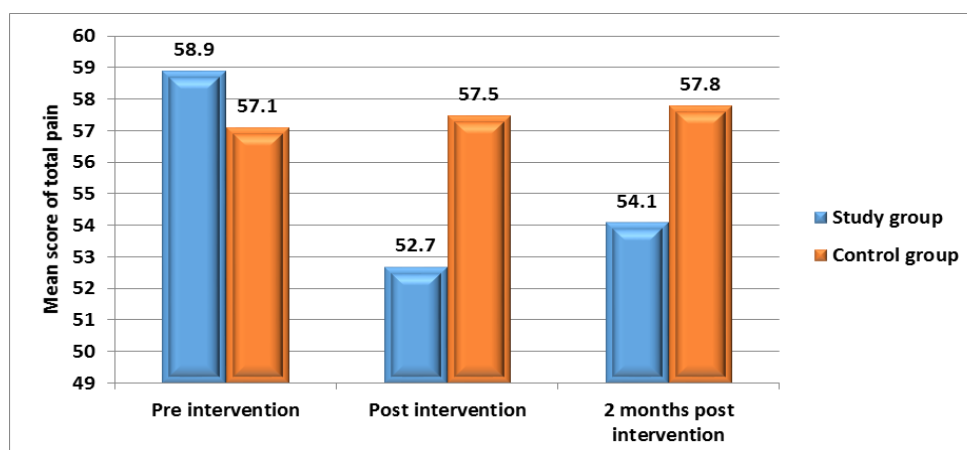| Socio demographic characters | | Study group (N=50) | | Control group (N=50) | | Total (N=100) | | Test of sig. | P value |
|---|---|---|---|---|---|---|---|---|---|
| | | No. | % | No. | % | No. | % | | |
| **Age / years** | Mean ±SD<br>Range | 48.7±5.60<br>29 – 55 | | 48.9±6.07<br>28 – 55 | | 48.8±5.81<br>28 – 55 | | t-test<br>0.274 | 0.785<br>(NS) |
| **Gender** | Male<br>Female | 15<br>35 | 30.0<br>70.0 | 13<br>37 | 26.0<br>74.0 | 28<br>72 | 28.0<br>72.0 | $\chi^2$<br>0.198 | 0.656<br>(NS) |
| **Marital status** | Married<br>Divorced<br>Widow | 43<br>4<br>3 | 86.0<br>8.00<br>6.00 | 43<br>5<br>2 | 86.0<br>10.0<br>4.00 | 86<br>9<br>5 | 86.0<br>9.00<br>5.00 | $\chi^2$<br>0.311 | 0.856<br>(NS) |
| **Educational level** | Illiterate<br>Read& write<br>Primary<br>Preparatory<br>Secondary<br>University | 21<br>0<br>2<br>5<br>19<br>3 | 42.0<br>0.00<br>4.00<br>10.0<br>38.0<br>6.00 | 23<br>2<br>1<br>4<br>18<br>2 | 46.0<br>4.00<br>2.00<br>8.00<br>36.0<br>4.00 | 44<br>2<br>3<br>9<br>37<br>5 | 44.0<br>2.00<br>3.00<br>9.00<br>37.0<br>5.00 | $\chi^2$<br>2.76 | 0.737<br>(NS) |
| **Occupation** | Work<br>Not work | 6<br>44 | 12.0<br>88.0 | 8<br>42 | 16.0<br>84.0 | 14<br>86 | 14.0<br>86.0 | $\chi^2$<br>0.332 | 0.564<br>(NS) |
| **Income** | Enough<br>Not enough | 4<br>46 | 8.00<br>92.0 | 2<br>48 | 4.00<br>96.0 | 6<br>94 | 6.00<br>94.0 | FE<br>0.709 | 0.678<br>(NS) |
| **Family history** | Rheumatoid arthritis<br>Heart disease<br>Diabetes<br>No | 9<br>1<br>4<br>36 | 18.0<br>2.00<br>8.00<br>72.0 | 3<br>0<br>7<br>40 | 6.00<br>0.00<br>14.0<br>80.0 | 12<br>1<br>11<br>76 | 12.0<br>1.00<br>11.0<br>76.0 | $\chi^2$<br>5.02 | 0.170<br>(NS) |
| **Disease duration** | 6 months – 1 years<br>1 year - 5years<br>> 5 y | 3<br>3<br>44 | 6.00<br>6.00<br>88.0 | 0<br>1<br>49 | 0.00<br>2.00<br>98.0 | 3<br>4<br>93 | 3.00<br>4.00<br>93.0 | $\chi^2$<br>4.26 | 0.118<br>(NS) |

*NS: Non significant    FE: Fisher exact*



**Figure (1): Mean score of total pain between study and control group before, immediately after psychiatric nursing intervention and after 2 months of followup (N =50)**
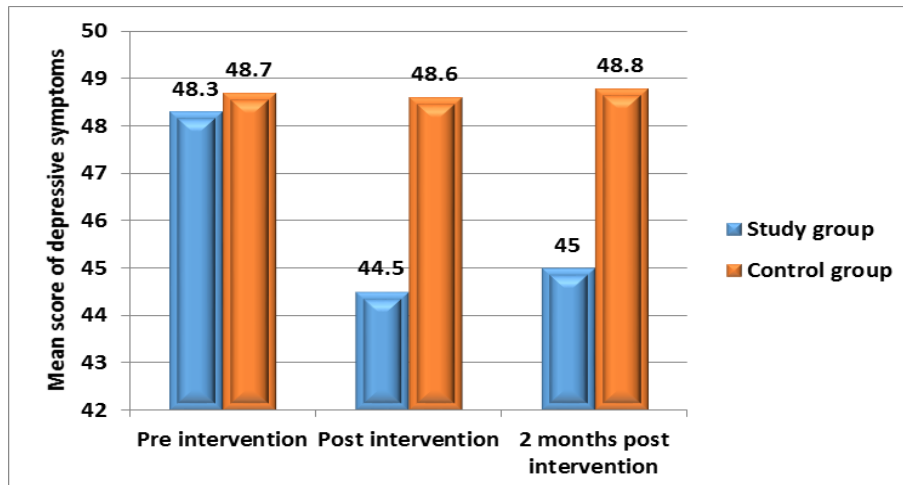
**Figure (2): Mean score of depressive symptoms between study and control group before, immediately after psychiatric nursing intervention and after 2 months of follow up (N =50 for each group).**

**Table (2): Pearson Correlation between total mean score of pain and total mean score of depressive symptoms among the study group before and immediately after psychiatric nursing intervention**

| Studied variable | Total pain level | | | |
| | before intervention | | Immediately after intervention | |
| | R | P value | R | P value |
| Depression | 0.899 | **0.001 (HS)** | 0.822 | **0.001 (HS)** |

HS: High significant

## V. Discussion

"Rheumatoid arthritis (RA) is a long-term disease that significantly reduces the physical and emotional state of people with it". "Chronic pain conditions often lead to disability, psychological distress and reduced quality of life, previous research has shown that affected persons have a high level of anxiety and depression[18]".They need to develop effective means to handle their condition; So, this study is intended to "evaluate the effectiveness of psychiatric nursing intervention on pain and depressive symptoms among rheumatoid arthritis patients."

The current study shown that" there was no statistically significant difference between the study group and the control group in relation to socio-demographic characteristics"; this reflects that the two groups had the same inclusion criteria. In the same line with [19]; they found that "there were no significant differences between study and control groups regarding socio-demographic characteristics".

Concerning the influence of psychiatric nursing intervention on studied participants regarding total mean score of pain, the existing study exhibited that the total mean score of pain reduced from ($58.9\pm6.66$) before the intervention to ($52.7\pm6.81$) immediately after intervention in the study group compared with a control group, with a highly statistically significant difference between study and control group in the total mean score of pain, Where p-value (p = 0.001); this indicated that the intervention sessions were within the interests and the needs of the patients as seen in essential oils which used in aromatherapy as lavender, ginger, orange and rosemary in reducing inflammation, swelling, pain and stiffness of joints. In addition, the influence of favoring hot compresses, range of motion exercises, and joint protection techniques in reducing pain and improving the range of movement around the joints. This result was supported by [20] found that "pain and fatigue scores significantly reduced in the aromatherapy massage and reflexology groups compared with the control group (p < .05); aromatherapy massage and reflexology remain simple and effective non-pharmacologic nursing interventions which can be used in managing pain and fatigue for patients with rheumatoid arthritis". Also, [21] entitled;"the effect of conditioning exercise on the health status and pain in patients with rheumatoid arthritis" ; their findind displayed that "the pain score reduced significantly in a study group of the patients immediately after the intervention of physical training programs compared with the control group (P=0.000)". Furthermore, the existing finding exhibited that the total mean score of pain reduced from ($58.9\pm6.66$) before the intervention to ($54.1\pm6.78$) 2 months after follow up in the study group compared with a control group and there is a highly statistically significant difference between study and control group in the total mean score of pain, Where (p = 0.007); this may be due to the effectiveness of program session which includes a range of motion exercises, joint safety techniques, and educational training in aromatherapy; this

result was supported with [22]; they studied " Effect of Non-Pharmacological Nursing Guidelines on pain Relief among Patients with Rheumatoid Arthritis" they concluded that " joint pain was relieved after follow up one month of implementation of non-pharmacological nursing guidelines among the study group when compared with the control group". Also, [23]; they concluded that "patient education interventions in patients with RA reported significant improvements in behavior, pain, and disability among these patients after the implementation of an educational program, which was sustained at 12 months."

Regarding the influence of psychiatric nursing intervention on the mean score of depressive symptoms of the study subjects, the present study showed that there was a statistically significant decrease in the mean score of depressive symptoms from (48.6±8.41) before the intervention to (44.5±9.48) immediately after intervention for the study group compared with the control group. This could be due to the influence of the program sessions, which includes (1)assertiveness training skills that enable patients to cope better with their pain, improve their relationships with others, reduce interpersonal stress and conflict, (2) relaxation techniques effect on reducing muscle tension, emotional distress, and improving ability to rest and sleep, (3) pleasant activities scheduling which increase frequency and variety of enjoyable activities, distraction from pain and other symptoms, increase patient connection with the surroundings in a positively reinforcing way and elevate their mood.

This result was supported by [24]; entitled " Effects of Nursing Interventions on Depression of Patients With Rheumatoid Arthritis" found that "nursing interventions, including exercise training, medication guide, health education, and psychotherapy were connected with the remission of depression (RR: -0.67; 95% CI: -0.89 to -0.46; P<0.01)." Also, [25] ; entitled " Efficacy of cognitive-behavioral therapy for adherence, depression and negative illness representations in rheumatoid arthritis patients"; they concluded that "CBT-AD is a possibly effective approach for persons with RA struggling with depression at the same time, which leads to a decrease in depression, an increase in adherence and correction of negative illness representations".

Moreover, the current result showed that the mean score of depressive symptoms reduced from (48.6±8.41) before the intervention to (44.5±9.48) immediately after the intervention. Then slightly increased from (44.5±9.48)immediately after the intervention to (45.5±9.50) 2 months after intervention for the study group compared with the control group; this indicates that follows- up of rheumatoid arthritis patients is crucial in helping them to change their dysfunctional beliefs about pain and helping them to develop an adaptive attitude towards their illness; this finding was supported with [26]; their result shown that "the mean score of depressive symptoms reduced from (31.53±8.92) before the intervention to (20.38±11.38) immediately after the intervention to (19.15±8.88) 1.5 months after the intervention for study group compared with a control group where p-value (p= 0.01 and 0.05)."

The contemporary study displayed that there was a highly statistically significant positive correlation between the total mean score of pain and depressive symptoms mean score of the study group before and immediately after psychiatric nursing intervention where the p-value (p = 0.0.001). This means that (i.e. When pain increase, depressive symptoms increase); this reflects that" patients with RA experience high distress due to chronicity and intensity of the disease." Moreover, "pain considers one of the greatest distressing symptoms of RA, which has critical influence over the experience of negative emotions, anxiety and depression." Also "negative thoughts in depression affect the mode in which patients perceive their somatic symptoms, so there was a positive correlation between pain and depression." This result was in the same line with [27]; entitled " Evaluation of quality of life and depression in patients with rheumatoid arthritis in a General Hospital"; They found that " a highly statistically significant positive correlation exists between pain and depression." Also, [28] found" a high positive significant correlation (P < 0.001) between depressed RA patients and the visual analog scale (VAS) for pain."

## VI. Conclusion
**The current study concluded that:-**
• There is significant reduction in the total mean score of pain and depressive symptoms immediately after psychiatric nursing intervention and after 2 months of followup among study group compared with control group.
• psychiatric nursing intervention has a positive effect on reducing pain and depressive symptoms among patients with rheumatoid arthritis.

## VII.Recommendation
**This study recommended that**
1- Assertiveness training, stress management, complementary treatments such as aromatherapy, attention diversion training, and cognitive restructuring should become an integral part of the total management of rheumatoid arthritis patients to help foster helpful attitudes towards illness and enhance psychological wellbeing

2-	Availability of online community support group which enhance improving quality of life and coping mechanism among rheumatoid arthritis patients and raising public awareness about rheumatoid arthritis and its multiple consequences.

3-	Replicate  this study on  a larger probability sample from different geographical areas to help for generalization of the results.

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