Relation between Functional Status and Quality of Life of the Elderly with Rheumatoid Arthritis

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Abstract

Background: Rheumatoid arthritis (RA) is a crippling disease that affects all life domains of the patients, such as the body functions, the activity's performance and contributes to the occurrence of several complications and disalities. **The aim of the study:** was to assess the relationship between functional status and quality of life of the elderly with rheumatoid arthritis. **Subjects and method: Study design:** A descriptive cross-sectional study design was used in this study. **Study settings:** This study was conducted at the rheumatoid clinic in Ali IbnAby Taleeb Health Insurance Hospital and the Rehabilitative clinic in Tanta University Hospitals. **Study subjects:** A convenient sample was utilized in this study. The total number of the studied subjects of Rheumatoid Arthritis patients was 120. **Tools of the study:** Four tools were used in this study to collect the necessary data**: Tool I.** Structured interview schedule that was developed by the researcher which included two parts; part (1): Socio-demographic characteristics of the elderly with rheumatoid arthritis and part (2): Past and present health history of the elderly with rheumatoid arthritis. **Tool II.** Katz Activities of Daily Living (Katz ADL). **Tool III.** Instrumental Activities of Daily Living (Lawton's IADL). **Tool IV.** World Health Organization Quality of life-BREF (WHOQOL-BREF)**. Results:** The majority (95.20%) of the studied subjects who aged more than 80 years had a poor QOL while, less than three-quarters (70.30%) of them who had a poor QOL that their age ranged 60 years and less than one-fifth (18.8%) of the same age group had a good QOL according to World Health Organization Quality of life-BREF (WHOQOL-BREF). **Conclusion:** The study concluded that more than three- quarters of studied elderly with RA had a poor QOL, while the rest of studied elderly with RA had a fair QOL and less than one-fifth of studied elderly with RA had a good QOL. **Recommendations:** This study recommended that there is a crucial need for further research to hold continuous educational and orientation programs for the elderly with RA and encourage a high level of self-care, follow up, teaching for rheumatoid arthritis and improving health status.

Key words: Rheumatoid arthritis's disease, Elderly, Quality of life, Functional status.

Introduction

Nowadays arthritis and other rheumatic conditions are among the most prevalent chronic conditions in Egypt and other parts of the world that affect all racial and ethnic groups [1]. Egypt is the land of the most rapidly aging populations (aged 60 and above) in the developing world [2].The aging process is associated with many changes that occur in all body systems such as an increase frequency of infections occurrence, malignancies, and autoimmune diseases due to the decline of normal immune surveillance and deregulation of immune responses which mistakenly attacks and destroys the healthy body tissues [3].

Rheumatoid arthritis (RA) affects around 1% of the world population. Women have a double chance to develop rheumatoid arthritis than men; many people who are diagnosed with RA are of working age. Despite the illness frequently starts in middle age and increases in prevalence amongst older people, young adults can also develop RA. The incidence rate is approximately 25-50 new cases per100, 000 people every year [4].

Rheumatoid arthritis effects on the functional status that are considered the main advocator for elderly care and it aids the elderly to be unsusceptible to both acute and chronic health problems. Functional status is an individual's ability to perform normal daily activities required to meet basic needs, fulfill usual roles, and maintain health and well-being [5]. Functional status subsumes related concepts of interest: functional capacity and functional performance. While functional capacity represents an individual's maximum capacity to perform daily activities in the physical, psychological, cognitive, and social ability to carry on normal activities of life, functional performance refers to the activities people do during of their daily lives. Functional status is evaluated through the measurement of the skills of role function [6,7].

The activities of daily living (ADLs) are both essential and routine aspects of self-care. Instrumental activities of daily living (IADLs) are another factor to consider when assessing independence. It is an appropriate instrument to assess a person's ability to live independently and thrive. The Instrument is most useful for identifying how a person is functioning at present and to identify improvement or deterioration over time and there are activities of daily living include companionship and mental support, transportation and shopping, planning and

preparing meals, managing the household, managing medications, communicating with others, and managing finances [8].

The elderly with RA has a great lowering quality of life (QOL) rather than those elderly without the disease. Rheumatoid arthritis causing continuous changes in a patient's life [9]. RA is a divesting disease that affects the patients negatively as it can affect body functions, the activities performed and contributes to the occurrence of several complications and disabilities so; there is a necessary need for adequate nursing care [10].

World Health Organization (WHO) has further emphasized the importance of quality of life and defined it as individuals' perceptions of their position in life in the context of the culture and value systems in which they live and concerning their goals, expectations, standards, and concerns. The activities of daily living (ADLs) are both essential and routine aspects of self-care [11]. It relates the self-perception of the individual expectations, standards and concerns within the context of the culture and value systems in which these people live each dimension focusing on specific activities such as the physical dimension of QOL concentrate on activities that help the client stay physically active, increase their sense of fun. The intellectual dimension of QOL includes activities that engage clients

mentally as learning, hobbies, or any other form of creativity [12].The emotional dimension of QOL includes structured social interactions or time with family and friends or even a sense of being at peace with oneself and at the end spiritual dimension of QOL, this deals with how clients can maintain or build spiritual connection, whether through personal relationship or though spending time in religious practices [13].

The basic role of the nurse helping elderly patients maximizing independence and functional ability, preventing further deterioration or disability, and enhancing the quality of life [14].Community health nurse has provided emotional and psychological support to elderly, helping for an easy transition, enhancing lifestyles and relationships, enabling life review, facilitating self-expression and ensuring cultural sensitivity which improving confidence in the competence and continuously maximizing the quality of care [15]. So, the present study aimed to assess the relationship between functional status and quality of life of the elderly with rheumatoid arthritis.

Significance of the study:

Rheumatoid Arthritis can lead to profound changes in people's health and autonomy, especially in a growing and vulnerable group as elderly, thus the assessment of

QOL in this population deserves to be considered patients with RA exhibit significant functional impairment, with a consequent reduction in quality of life (QOL) [16,17]. Therefore, the aim of the present study was to assess the relation between functional status and quality of life of the elderly of rheumatoid arthritis.

The aim of the study is to:

Assess the relationship between functional status and quality of life of the elderly with rheumatoid arthritis.

Research question:

What is the relation between functional status and quality of life of elderly with rheumatoid arthritis?

Subjects and Method

Study design:

A descriptive cross-sectional study design was used in this study.

Study setting:

This study was conducted at the rheumatoid clinic in Ali IbnAbyTaleeb Health Insurance Hospital and the Rehabilitative clinic in Tanta University Hospitals.

Study subjects:

A convenient sample was utilized in the current study. The sample was selected from the elderly diagnosed with rheumatoid arthritis who attended the previous settings they were aged 60 years and above, free from mental and psychiatric diseases, who were willing to communicate and accepted to participate in the study. The sample size was 120 cases that were attended through a period of six months.

Tools of the study:

In order to obtain the necessary data, four tools were used in this study.

Tool (1): A structured interview schedule:

A structured interview schedule was developed by the researcher according to the literature review it consisted of the following parts [18].

Part 1: Bio socio-demographic characteristics of the elderly with rheumatoid arthritis:

This included data about age, sex, marital status, level of education, previous occupation, residence area, family income, and person is living with the elderly.

Part 2: Past and present health history of studied elderly with rheumatoid arthritis: -

It included data about health the history of the elderly as number and causes of previous hospital admission, chronic diseases, family history with rheumatoid arthritis, the onset of RA, duration of RA, previous and present manifestation of disease, extra-articular manifestations as (subcutaneous nodules, Sjogren syndrome, pulmonary involvement and vacuities)

which elderly was suffering from it and type of treatment and medications received.

Tool II: - Katz Activities of Daily Living (Katz ADL) [19].

This tool was developed by Katz et al., (1970) and it was adopted by the researcher. This tool is used for the assessment of the functional ability of the elderly with rheumatoid arthritis by measuring the basic activities of daily living. Katz ADL index measured ability to conduct self-care. It consisted of a six-item instrument, which assessed the independence or dependence in the activities of bathing, dressing, toileting, transferring, continence and feeding. Elderly patients were scored yes/no for independence in each of the six functions. Scores ranged from 0-6, a score of 6 indicated full function, 4 indicated moderate impairment and 2 or less indicated severe functional impairment.

Tool III: Instrumental Activities of Daily Living (Lawton's IADL) [20].

This tool was developed by Lawton and Brody, (1969) and it was adopted by the researcher. This tool is used for assessment of the functional ability of the elderly with rheumatoid arthritis by measuring instrumental activities of daily living. It was used to assess the independent living skills of an individual and measures

functional ability as well as declines and improvements over time. It assessed 8 domains of function like telephoning, shopping, food preparation, housekeeping, laundering, use of transportation, use of medicine and financial behavior. Women were scored on all 8 areas of function but, for men the areas of food preparation, housekeeping and laundering were excluded. Elderly patients were scored according to their highest level of functioning in that category.

A total score ranged from zero (low function, dependent) to eight (highfunction, independent) for women and 0 through 5 for men.

Tool IV: World 0Health Organization Quality of life-BREF (WHOQOL-BREF) [21].

WHOQOL-BREF was an abbreviated generic quality of life scale developed by the World Health Organization in the year 1997.The WHOQOL-BREF instrument comprised twenty-six items. The twenty-six standard items contained two generic items (overall QOL and general health) and the remaining twenty-four items could be further classified into four domains: Physical health included seven items (items 3, 4, 10, 15, 16, 17, and 18), where Physiological items included six items (5, 6, 7, 11, 19 and 26), Social relationships included three items (20, 21, and 22).

Finally, environmental included eight items (8, 9, 12, 13, 14, 23, 24, and 25). The score ranged from 26-130. The score twenty-six referred to (the worst possible QOL and the score 130 referred to (the best possible QOL).

The scoring system was modified by the researcher to be as follows: -

Poor quality of life: < 78 point (<50%)

Good quality of life: ≥ 78 points (≥50%)

Method

The operation of this study was carried out as follows: -

1-Administrative approval:

-An official permission to conduct the study was obtained from the Dean of Faculty of Nursing to Director of the medical outpatient clinic of Ali IbnAbyTaleeb Health Insurance Hospitals and Rehabilitative Department of Tanta University Hospital.

-Director of the medical outpatient clinic of Ali IbnAbyTaleeb Health Insurance Hospitals and the Rehabilitative Department of Tanta University Hospital was informed about the objectives of the study to take permission in order to collect data from the selected settings.

2- Ethical and legal considerations:

-An approval from the ethical committee in the faculty of nursing was obtained on the proposal of the study.

-An informed consent was obtained from all study subjects after providing an appropriate explanation about the purpose of the study.

-Each participant was informed that he/she has the right to withdraw from the study at any time he/she wanted.

-Nature of the study didn't cause any harm or pain for the entire sample.

-Confidentiality and privacy were put into consideration regarding the data collected.

3-Developing the tools:

-Tool I of the study was developed by the researcher based on the literature review (part I, II) [18].

-Tool (II, III and IV) of the study was translated into Arabic and then were tested for its face and content validity by a jury of five professor expertise (three expertise in the field of Community Health Nursing and two expertise in Medical- Surgical Nursing) before conducting the study. Modifications are done according to the comments of the jury committee.

-The study tools were tested for their reliability by using Cronbach's alpha test, which was computed and it was found to be = (0.931).

4-The pilot study:

-A pilot study was carried out by the researcher on 10% of the sample for testing the tools for their clarity, applicability and to identify obstacles

that may be encountered with the researcher during data collection. Accordingly, the necessary modification was done. This sample was excluded from the study. Based on the results obtained some questions were omitted while others were added.

5-The actual study:

 - The elderly patients were interviewed by the researcher in waiting areas in outpatient clinics over throughout the study for six months starting from the first of March to the end of August 2019.

- The average time spent for collecting data from each elderly was 20-30 minutes and the researcher met the elderly two days from 10AM up to 1PM one day in each setting weekly. The average numbers of elderly interviewed per day were ranged from two to three elderlies.

6-Statistical analysis of data:

- The statistical data were organized, tabulated, and statistically analyzed using statistical package for social studies (SPSS) version 25. For quantitative data, the range, mean and standard deviation were calculated. For qualitative data, the comparison was done using Chi-square test (χ^2). Correlation between variables was evaluated using Pearson's and Spearman's correlation coefficient(r) the level of Significance was adopted at P< 0.05 for interpretation of results of tests of significance.

Results

Table (I): Represents the distribution of the studied elderly with rheumatoid arthritis according to their socio-demographic characteristics. This table shows that more than half (53.3%) of studied subjects their ages ranged between 60 ≥ 70 years with a mean of 70.69 ± 6.60 years. As regards to gender and the rest of them were male, while more than half 55% of them were female.

Concerning the occupational status more than one-third (36.7 %) of studied subjects were housewife while, slightly less than two-thirds (63.3%) of them were working. Regarding the elderly income per month nearly three-quarters (72.5%) of them mentioned that their income enough while about one-fifth (19.2) reported that their income wasn't enough and owed while only (8.3%) of them had enough money and save. Also, the table shows that (10.8%) of the studied subjects living alone while more than two-thirds of them (68.3%) were living with their families and more than one- fifth (20.8 %) of them were living in the geriatric home.

Figure (1): Represents the distribution of studied elderly with rheumatoid arthritis

according to their marital status. The figure shows that, less than half (40%) of studied elderly with rheumatoid arthritis were married, nearly half (49.2%) were widow and the rest (5.8% and 5%) were single and divorced respectively.

Figure (2): Represents distribution of studied elderly with rheumatoid arthritis according to their educational levels.The figure shows that, more than one-third (37.5%) of studied elderly with rheumatoid arthritis were illiterates, nearly one -quarter (24.2%) had secondary education.The figure also illusterates that (15.8%) of studied elderly with rheumatoid arthritis were university educated and above and the rest of them (13.3%,9.2%) were read and write and elementaryrespectively.

Figure (3): Represents the distribution of the studied elderly with rheumatoid arthritis according to their residence area. The figure shows that more than half (57.5%) of studied elderly with rheumatoid arthritis were from an urban area and the rest of them (42.5%) from rural areas.

Table (II): Represents the distribution of the studied elderly with rheumatoid arthritis according to their performance of activities of daily living. The table illustrates that more than one-third (35%)of the studied elderly with RA had independent in toileting and feeding while, less than one-fifth of them (19.2%)

had independent in bathing, on contrast the majority (95% and 80.9%)of them had dependent in continence and bathing, while slightly less than two-third of them (65%) had dependent in toileting.

Table (III): Represents the distribution of the studied elderly with rheumatoid arthritis according to their degree of independency in the performance of activities of daily living.The table reveals that more than three-quarters (76.7%)of the studied elderly with RA had severe functional impairment, while less than one fifth (16.7%) had mild to moderate impairment and the rest of them (6.7%) had full function. The degree of independency of studied elderly 0-5 with a mean of 1.45 ± 1.54.

Table (IV): represents the distribution of the studied elderly with rheumatoid arthritis according to their instrumental activities of daily living. This table demonstrates that the majority (95.8%)of the studied elderly with RA had independent in telephoning while, only (9.2%, 7.5% and 5.8% respectively)of them had independent in shopping, financial behaviour and use of medicine. On contrast the majority (94.2%, 90,8% and 82.5%respectively)of them had dependent in use of medicine, shopping and financial behaviour while, only (4.2%) of them had dependant in telephoning.

Concerning independence for female the table reveals that more than one fifth (22.7%)of the studied elderly with RA had independent in housekeeping, while less than one fifth (13.63% and 9.09% respectively)of them had independent in laundering and food preparation. On contrast the majority (90.91% and 86.36%) of them had dependent in food preparation and laundering while, more than three-quarters of them (77.27%) had dependent in housekeeping.

Represents the distribution of the studied elderly with rheumatoid arthritis according to their degree of independence in the performance of activities of daily living. This table presents that more than half of the studied women with RA (54.16%) had mild to moderate function while, more than two-fifths of men (45%) had mild to moderate function. Also, this table shows that the degree of independence in the performance of instrumental activities of daily living of studied elderly ranged from0-6with a mean of 1.8 ± 1.19.

Table (VI): represents the distribution of the elderly with rheumatoid arthritis according to their domains and categories of QOL. The table illustrates that more than one-third (41.7% and 41.7% respectively) of the studied elderly with RA had a fair and a good in overall their

quality of life and general and less than one-fifth (16.7%) of them had a poor in overall their quality of life and general.

Regarding to physical domain the table illustrates that more than three-quarters (80%) of them had a poor physical domain and the rest (9.2% and 10.8% respectively) of them had a fair and a good physical domain.

According to psychological domain the table shows that more than two-thirds (66.7%) of the studied elderly with RA had a poor psychological domain while, more than one-fifth (21.7%) of them had a fair psychological domain and less than the rest (10.8%) of them had a good psychological domain.

Revealing to social domain the table reveals that more than one-third (35.8%) of them had a good social domain and less than one-third (31.7% and32.5% respectively) of them had a poor and a fair social domain. Concerning to environmental domain the table shows that less than two-thirds (65.8%) of them had a poor environmental domain while, one-fifth (25%) of them had a fair environmental domain and the rest (9.2%) of them had a good environmental domain. Also, the table demonstrates that, there was highly statistically significant difference between overall quality of life, general health QOL domains and QOL categories

in overall quality of life and general health, physical domain, psychological domain, environment domain and QOL categories (p =0 .000). But there was insignificant association between social relationships domain and QOL categories, where (p =0 .83).

Table (VII): represents the correlation between domains of QOL and activities of daily living. The table reveals that there was statistically significance positive correlation between domains of QOL and activities of daily living (p=<0.01).

Table (VIII): represents the correlation between domains of QOL and instruments activities of daily living. The table represents that there was statistically significance positive correlation between overall quality of life and general health and all domains of QOL except social relationship domain and instruments activities of daily living with (p=<0.01).

Table (I): Distribution of the studied elderly with rheumatoid arthritis according to their socio-demographic characteristics

| Variables	Elderly with RA (n=120)	
	No	%
Age in years:		
60-	**64**	**53.3**
70-	**35**	**29.2**
80≥	**21**	**17.5**
Range	**60-85**	
Mean ± SD	**70.69 ± 7.62**	
Sex:		
Male	**54**	**45.0**
Female	**66**	**55.0**
Occupation before the retirement:		
Not working or housewife	**44**	**36.7**
Working	**76**	**63.3**
The elderly income per month:		
Enough and save	**10**	**8.3**
Enough	**87**	**72.5**
Not enough and owed	**23**	**19.2**
Who live with the elderly:		
Live alone	**13**	**10.8**
Live with the family	**82**	**68.3**
Live in the geriatric home	**25**	**20.8**

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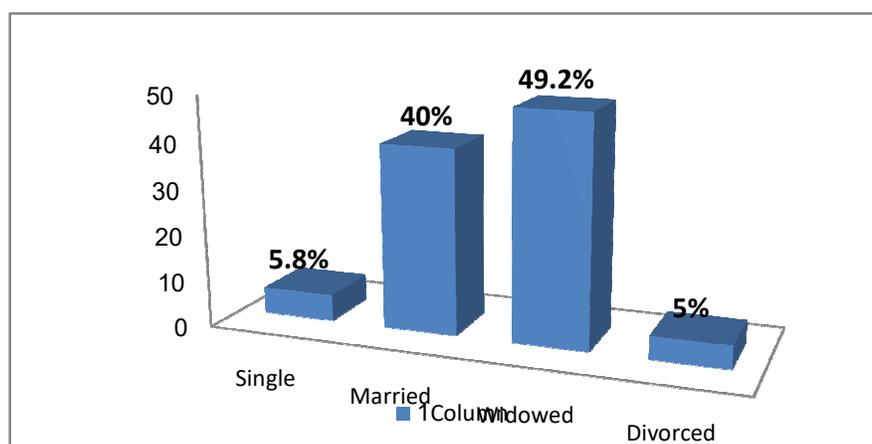
Figure (1): Distribution of studied elderly with rheumatoid arthritis according to theirmarital status
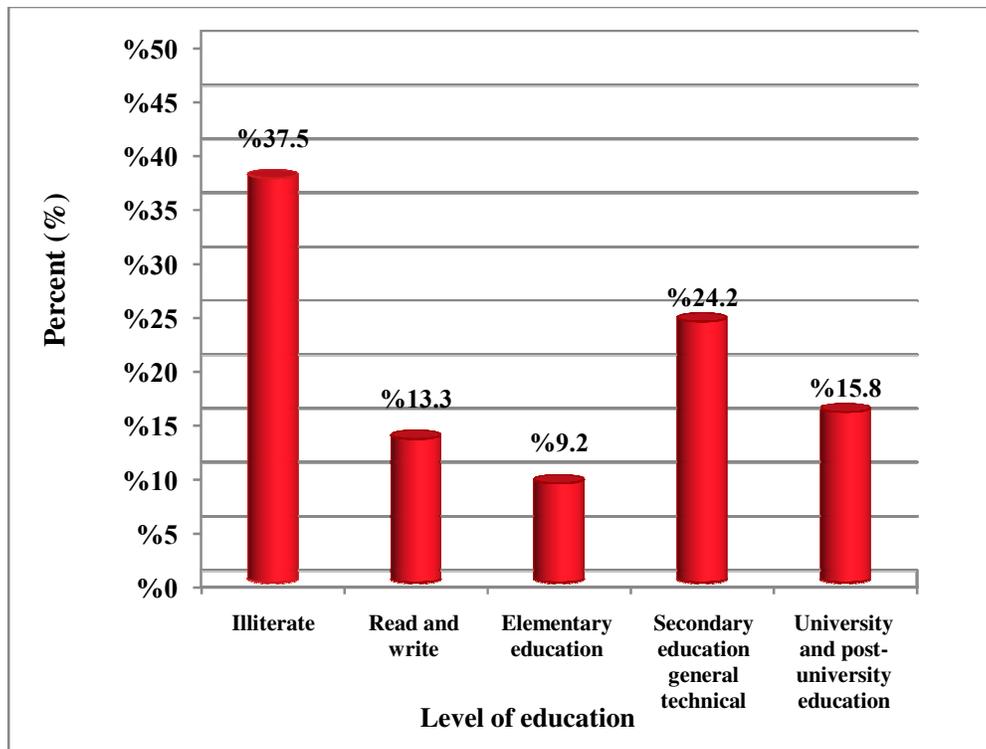
Figure (2): Distribution of studied elderly with rheumatoid arthritis according to their educational levels
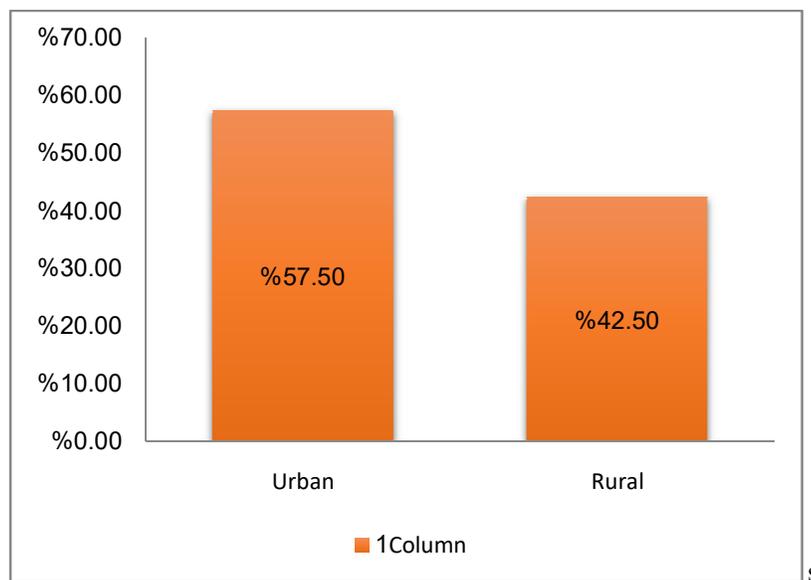

Figure (3): **Distribution of the studied elderly with rheumatoid arthritis according to theirresidence area**

Table (II): Distribution of the studied elderly with rheumatoid arthritis according to their performance of activities of daily living

Variables	The studied elderly with rheumatoid arthritis (n=120)			
	Independent		Dependent	
	No	%	No	%
Bathing	23	19.2	97	80.9
Dressing	25	20.8	95	79.2
Toileting	42	35	78	65
Transferring	36	30	84	70
Continence	6	5	114	95
Feeding	42	35	78	65

Table (III): Distribution of the studied elderly with rheumatoid arthritis according to their degree of independency in the performance of activities of daily living

Degree of independency in the performance of activities of daily living	The studied elderly with RA(n=120)	
	No	%
Severe functional impairment	92	76.7
Mild to moderate impairment	20	16.7
Full function	8	6.7
Range	0-5	
Mean ± SD	1.45 ± 1.54	

Table (IV): Distribution of the studied elderly with rheumatoid arthritis according to their instrumental activities of daily living

Variables	The studied elderly with RA (n=120)			
	Independent		Dependent	
	N	%	N	%
Telephoning	115	95.8	5	4.2
Shopping	11	9.2	109	90.8
Transportation	44	36.7	76	63.3
Use of medicine	7	5.8	113	94.2
Financial behavior	9	7.5	111	82.5
	N=66		N=66	
Food preparation (for female)	6	9.1	60	90.91
Housekeeping (For female)	15	22.7	51	77.27

Table (V): Distribution of the studied elderly with rheumatoid arthritis according to their level of independency in performance of instrumental activities of daily living

Variables	The studied elderly with RA (n=120)	
	No	**%**
Low function dependent for men and women	5	4.17
Mild to moderate function for women	61	50.83
Mild to moderate function for men	54	45.00
Range	0-6	
Mean ± SD	1. 8 ± 1.19	

Table (VI): Distribution of the elderly with rheumatoid arthritis according to their domains and categories of QOL

Variables	The studied elderly with RA (n=120) QOL categories						χ^2	P-value
	Poor		Fair		Good			
	N	**%**	**N**	**%**	**N**	**%**		
Overall Quality of Life and General Health	20	16.7	50	41.7	50	41.7	15.0	0.00**
Physical Domain	96	80	11	9.2	13	10.8	117.6	0.00**
Psychological Domain	80	66.7	26	21.7	14	11.7	61.8	0.00**
Social relationships Domain	38	31.7	39	32.5	43	35.8	0.35	0.83
Environment Domain	79	65.8	30	25	11	9.2	61.55	0.00**
Total QOL	100	83.3	6	5	14	11.7	135.8	0.00**

** Significant at p < 0.01.

Table (VII): Correlation between domains of QOL and activities of daily living:

Domains of QOL of the studied caregivers	Activities of daily living	
	R	**P-value**
Overall quality of life and general health	0.251	0.00**
Physical domain	0.432	0.00**
Psychological domain	0.288	0.00**
Social relationships domain	0.232	0.01*
Environment domain	020.4	0.02*
Total QOL	0.376	0.00**

** Significant at p < 0.01 and *significant at p <0.05.

Table (VIII): Correlation between domains ofQOL **and instruments activities of daily living:**

Domains of QOL of the studied caregivers	Instrument's activities of daily living	
	R	**P-value**
Overall quality of life and general health	0.283	0.00**
Physical domain	0.427	0.00**
Psychological domain	0.385	0.00**
Social relationships domain	0.147	0.12
Environment domain	0.214	0.01*
Total QOL	0.394	0.00**

** Significant at p < 0.01 and *significant at p <0.05.

Discussion

Rheumatoid arthritis (RA) is a chronic disabling disease of the joints and may affect other body parts which starting at any age but mainly 55th to 75th, and is a deadly disease in 80th and older**.** It is three times more common among females than males [22,23]**.**

Elderly patients with RA suffer from complications that lead to poor quality of life and disability due to poor knowledge that affect their self-care behaviors toward disease coping and compliance with treatment regimen [24,25]**.**So, the aim of the current study was to assess the relationship between functional status and quality of life of the elderly with rheumatoid arthritis. Regarding demographic characteristics of the studied elderly, the present study revealed that, less than half of them were male, while more than half of them were female. Also, slightly less than two-thirds of female elderly were employed. In addition, their ages ranged between $60 \geq 70$ years with a mean of 70.69 ± 6.60 years among female and male patients respectively **(Table I).** This result is in agreement with **Rais et al., (2014)** who conducted a study to examine rheumatoid arthritis clinical features and management strategies at an urban tertiary facility in Pakistan and reported that the majority of

their participants were females [26]. From the study point of view this finding may be due to female hormones and genes, which may increase the risk for RA than males**.**

Regarding to elderly income the result of the current study shows that nearly three-quarters of the studied elderly with RA had enough income while, the rest of them had enough money and save. The findings of the present study are in the same line with **Yanget al., (2018)** who conducted a study to analysis of socioeconomic status among patients with rheumatoid arthritis and found that the subjects with low socioeconomic status are at in increasing risk of developing RA with higher mortality rate [27]. This finding can be explained that the income has great impact on quality of life and prognosis of the disease.

The result of the present study shows that more than two-thirds of the studied elderly with RA were living with their families and less than one- quarter of them were living in the geriatric home **(Table I).** This result in the same line with **Cunha et al., (2010)** who conducted a study to examine NEAR study: needs and expectation in rheumatoid arthritis-do we know our patients' needs? and reported that the majority of the study subjects were living with their family [28]. This finding may be

due to family bonding and family culture and traditions which do not allow for the family's elderly to stay in the geriatric to keep the extended family.

The result of the present study shows that nearly half of the studied elderly was widow which constituted the highest percentage compared to less than half of them were married.**(Figure1).** This result is a contrast with **Unk and Brasington (2014)** who conducted study to examine efficacy study of multimedia rheumatoid arthritis patient education program and mentioned that about half of their participants were married and are complaining of RA [29].

With regards to educational level, the table illustrates that less than two-fifths of the studied elderly were illiterate while, the rest of them were read and write, nearly one- quarter of them had secondary education and less than one quarter had university and post graduate and only few of them had elementary education.**(Figure2)**. This result is similar with **Reckner-Osslon et al., (2001)** who conducted a study to evaluate comorbidity and Life style, reproductive factors, and environmental exposures associated with rheumatoid arthritis and reported that the majority of elders with RA were illiterate [30]. This finding can be explained that the

risk for RA decrease with increasing level of education for patients.

Concerning the place of residence, the result of the present study shows that more than half of the studied elderly with RA were living in urban area and the rest of them were living in rural areas.**(Figure3)**. This result disagrees with **Linde et al., (2008)** who conducted a study to examine health –related quality of life of patients with rheumatoid arthritis. Which factors are significance? And   reported that the majority of elders with RA were living in urban areas [31].

The results of the present study revealed that more than one-third of the studied elderly with RA had independent in toileting and feeding while, less than one-fifth of them had independent in bathing, on contrast the majority of them had dependent in continence and bathing, while slightly less than two-third of had dependent in toileting **(Table II).**This finding is supported with a study carried out by **Hilary et al., (2009)** for assessment of a sixteen-week training program on strength, pain, and function in rheumatoid arthritis patients and observed that the disability related to RA decreased implementation of their self-care [32]. Also, a study conducted by **Linn Rasker et al., (2006)** who illustrated the improvement of the severity of RA symptoms decrease

implementation of their performance of activities of daily living [33].

In relation to, the degree of independency in the performance of activities of daily living the result of the present study illustrates that more than three-quarters of the studied elderly with RA had a severe functional impairment, while less than one-quarter had a mild to moderate impairment and the rest of them had full function. Also, the degree of independency of studied elderly ranged from 0-5 with a mean of 1.45 ± 1.54 **(Table III)**.This result is congruent with a study done by **Osman. (2016)** who reported that more than half of studied participants had a severe functional impairment of the daily functioning of their studied elderly [34]. Additionally, another study conducted by **Hilary et al., (2009)** who observed that there was a severe functional impairment of their RA studied participants and become more independent in their daily life activities [32].

As regards to instrumental activities of daily living the result of the current study illustrates that the majority of the studied elderly had independent in telephoning and more than two third had independent in transportation while, only few of them had independent in shopping, financial behavior and use of medicine on contrast the majority of them had dependent in the use of medicine, shopping and financial

behavior while, only very few of them had dependent on the telephoning **(Table IV)**.This results is in accordance with **Pytel et al., (2012)** who stated that the majority of RA patients dependent in use of medicine, shopping and they start to practice some exercise regularly after feeling better [35].

Concerning others independence of instrumental activities of daily living for female. The result of the present study reveals that more than one-quarter of them had independent in housekeeping, while less than one- fifth of them had independent in laundering and food preparation. On contrast the majority of them had dependent in food preparation and laundering, while more than three-quarters of them had dependent in housekeeping **(Table V)**.This result is in accordance with a study conducted by **Nadrian, et al., (2019)** to examine development and psychometric properties of a self-care behaviors scale (SCBS) among patients with rheumatoid arthritis and illustrated that the majority of them had dependent in food preparation and laundering of their RA patients [9].

As regards to the levels of independency of elderly performance of instrumental activities of daily living. This table reveals that more than half of the studied elderly women with RA had mild to moderate

function while, less than one half of men had a mild to moderate function. Furthermore, this result shows that the degree of independence in the performance of instrumental activities of daily living of studied elderly ranged from 0-6 with a mean of 1.8 ± 1.19 **(Table V)**.This result is similar to a study conducted by **Chen and Wang(2007)** to examine the relationship between physical function, knowledge of disease, social support and self-care behavior among patients with rheumatoid arthritis and observed that more than half of women had mild to moderate function [36].

The result of the current study represents that more than one-third of the studied elderly with RA had a fair and a good in overall their quality of life and general health had a good social relationship domain, had a poor environmental domain and two-thirds of them had a poor psychological domain. As regards to physical domain more than three-quarter of them had a poor physical domain while, the rest of them had a fair and a good physical domain, had a good psychological domain and had a good environmental domain. Also, there was a highly statistically significant difference between overall quality of life, general health QOL domains and QOL categories in overall quality of life and general health, physical

domain, psychological domain, environment domain and QOL categories (p =0 .000). But there was insignificant association between social relationships domain and QOL categories, at (p =0 .83). **(Table VI).** This result is in contrast with a study carried out by **Radner et al., (2011)** to determine comorbidity affects all domains of physical function and quality of life in patients with rheumatoid arthritis and mentioned that their study confirms that RA has a significant effect on the health-related quality of life of patients [37]. The disease duration was the most influencing factor on both the physical and mental function. This result is in the same line with a study done by **Sturgeon et al., (2016)** to assess the affective disturbance in rheumatoid arthritis: psychological and disease-related pathways and reported that their study confirms that the interplay between physical and psychological processes in RA requires an understanding of many levels at which this interaction could occur in RA patients so management to patient require attention to both psychological health and physical function [38]. Another study conducted by**Lwinet al., (2020)** to evaluate the impact of mental health on disease: A narrative review and observed that the elderly depression is two times more prevalent in RA regarding anti-rheumatic therapies, on depression and

cognitive function in RA patients [39].This finding can be explained that there was some medication as disease-modifying anti-rheumatic drugs (DMARD) for RA lead to negative cognitive perception and belief in the ability to do things with presence of RA.

The result of the present study shows that there was a significance positive correlation between domains of QOL and activities of daily living and general health (p=<0.01). **(Table VII).** This result is in agreement with a study by **Attia et al., (2016)** who reported that this study confirm that RA cause impairment of all aspects of QOL (physical, social, psychological and environment) and the disease activity is the most predictor factor in those patients [40]. This finding may be due to feeling of elderly with pain and functional disability may have an important impact on QOL of RA patients through restrictions and unpleasant physical sensations they cause.

The result of the present study reveals that there was a significance positive correlation between overall quality of life, general health and all domains of QOL except social relationship domain and instruments activities of daily living at (p=<0.01). **(Table VIII).** This result is supported by **Gupta et al., (2009)**who conducted a study to assess the relation

between functional status and quality of life of elderly with rheumatoid arthritis and found that there was a significant correlation between instrumental hand function (grip strength, muscle power and range of motion) and Activities of Daily Living (ADL) in rheumatoid arthritis patients[41]. This finding can be explained that the most characteristic extra-particular lesion is rheumatoid nodules which are small granulomas, and appear under the skin especially over the bony prominence on tendons, in the sclera and viscera and about 30% of rheumatoid arthritis patients develop it.

The QOL is an individual category and its improvement should imply personal experience of the individual. Furthermore, the integrative therapeutic model should include psychosocial support, activities to improve functional abilities, professional counseling, and using medical and complementary therapies to alleviate the symptoms of RA [42]. In this way, the results of this study indicated the need for further research that would include a larger number of respondents. Assessing the impact of different interventions on the QOL should also be an important task that can help define a holistic and integrative model of treatment and rehabilitation for RA patients.

Conclusion:

Based on the findings of the present study, it can be concluded that, more than three-quarters of the studied elderly with RA had a poor QOL and less than one-fifth had a good QOL, while the rest had a fair QOL as a result of their domains and categories of QOL of elderly with RA. There was a statistically significant positive correlation between all domains of QOL and activities of daily living and instruments activities of daily living.

Recommendation

Based on the findings of the present study, the following recommendations were suggested.

1. Hold continuous educational and orientation program for rheumatoid arthritis patients to upgrade their knowledge about rheumatoid arthritis's disease and its management and encouragethem for high level of self-care, health status, follow up.

2. Instructional guidelines should be applied on a wide range through different social media.

3. Community support either governmental or non- governmental should be provided to all rheumatoid arthritis patients.

4. Further research is required to investigate factors associated with rheumatoid arthritis patients as

psychological, social and environmental factors.

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