

Assessment of the impact of different rheumatoid arthritis stages on the quality of life of a sample of Iraqi patients

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ABSTRACT

Rheumatoid arthritis is a chronic systemic disease affecting joints, muscles, eyes, and nerves, accompanied by pain and deformity of bones that lead to reduced quality of life of rheumatoid arthritis patients in many aspects. This cross-sectional study aimed to assess patients' quality of life with rheumatoid arthritis. Eighty patients who fulfilled the disease's diagnostic criteria were included in this study between August 2019 and February 2020. The study is based on interviews with 80 patients with established rheumatoid arthritis enrolled in two hospitals in Baghdad. Quality of life of patients assessed by (the WHO-BREEF) questionnaire. Patients with rheumatoid arthritis perceived reduced quality of life in several domains, such as physical health, psychological health, social relationships, and environment, consequently, compared with the healthy. The results showed of all domains, the environment was primarily affected (the lowest score ranged from 28.95 in mild cases to 41.89 in severe cases), followed by physical health scores ranging from 58.95 to 62.48. In contrast, domains 2 (psychological health) and 3 (social relationship) showed comparable scores. In conclusion, rheumatoid arthritis patients in this study perceived lower quality of life in physical and environmental aspects with better improvements in social and psychological health scores. In addition, morning stiffness considers a significant factor affecting Q.O.L. in those patients.

Keywords: Rheumatoid arthritis, Quality of life, Morning stiffness, (WHO-BREEF) questionnaire, An autoimmune disease

Introduction

Rheumatoid arthritis (R.A.) is one of the most painful chronic systemic diseases that affect many parts of the body, including joints, connective and fibrous tissues, muscles, and tendons, with a tendency to suddenly attack between the ages of 20 -40 and results in changing shape of bones which is called deformity [1]. The prevalence of R.A. is estimated to be 1-2%, with higher chances by three times of occurring in the female gender. According to epidemiological information, this disease has a

genetic predisposition, and exposure to certain environmental factors may lead to the expression of R.A. [2].

The role of many factors, such as environment, hormones, and genetics, is unclear in initiating R.A. [3]. Upon triggering an immune response, immune system cells produce many products, including autoantibodies and cytokines such as vascular endothelial growth factor (VEGF), interleukins (IL-6, IL-7, IL-17), and tumor necrosis factor-alpha (TNF- α) which in turn lead to synovitis and growth of abnormal tissue called pannus which destroys the bone and cartilage [4, 5].

Rheumatoid arthritis is described as systemic because it affects joints, skin, eyes, and nerves. On the other hand, R.A. has also been considered an autoimmune disease with resulting symptoms such as pain caused by patients' immune systems attacking the lining of joints [6, 7].

Aim of the study

To assess the quality of life in patients with rheumatoid arthritis (R.A.).

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Patients

Eighty patients who fulfilled the diagnostic criteria of Rheumatoid arthritis were enrolled in the study and were visiting Baghdad teaching hospital and A.L. Yarmouk teaching hospital between August 2019 and February 2020. The study is based on interviews with 80 patients with established rheumatoid arthritis enrolled in two hospitals in Baghdad.

Data collected from the patients through direct questionnaires include age, gender, duration of symptoms in years, and others. All patients with R.A., as diagnosed by their physician, were eligible for inclusion in the study. Any screening questionnaires not filled were considered invalid.

Materials and Methods

This cross-sectional study was conducted to assess the impact of impaired morning function, other symptoms, and disabilities on the quality of life of R.A. patients. The study used a qualitative design with a Statistical System approach to describe variations in how individuals experience their quality of life.

Q.O.L of R.A. patients assessed by (the **WHO-BREFE**) questionnaire, an abbreviated version of the WHOQOL-100 scale [8]. This questionnaire included 26 items to ask about and took two weeks to complete Patients' responses ranged from 1 (very dissatisfied) to 5 (very satisfied).

WHO-BREFE involved four domains: physical health (seven items), psychological health (six items), social relations (three items), and environment (eight items) [9]. The score of each domain can be calculated in one of three ways; the first way is just a summation of the raw scores; the second way consists of transforming raw scores into scores ranging from 4-20 to be in line with the WHOQL-100 Instrument., and the last method is composed of transforming the 4-20 scores onto a 0-100% scale [10]. Institutional ethical committee approval was obtained, and written informed consent was taken from all patients.

Statistics

Data were inserted using an Excel program in which data were presented as mean and number (%).

Results and Discussion

Demographic factors and disease variables of 80 R.A patients are illustrated in the **Table 1**:

More than half of the patients in this study were between 18 and 45 years old, with a mean age of 42.8125 ± 13.5 , and the female gender represented 82% of cases.

The disease duration ≤ 5 years in 38% of study participants to more than ten years in 30% of patients. 40% of them were an employee in paid jobs. Most respondents had a family history of R.A. (85%), while 41% were not. Sever morning stiffness was

found in 46%, while mild and moderate cases represented 27% and 26%, respectively.

Table 1. patients' demographic and disease characteristics of R.A.

Variables	Study groups
Age means(years)	42.8125±13.5
Age group	N (%)
18-45 years	41(51.25%)
Gender	N (%)
Female	66(82.5%)
Male	14(18%)
Disease duration	N (%)
0-5 years	31(38.25%)
5-10 years	25(31.25%)
10 years and more	24(30%)
Employment status	N(%)
Employed%	32(40%)
unemployed %	48(60%)
Family history	N (%)
Patients with Family history	47(85.75)
Patients with No Family history	33(41.25%)
Morning stiffness severity of patients	N(%)
mild	22(27.5%)
moderate	21(26.25%)
sever	37(46.25%)

Table 2 showed that Patients with rheumatoid arthritis perceived reduced quality of life in several domains, such as physical health, psychological health, social relationships, and environment, compared with the healthy population (100% considered the perfect score of healthy adults). The results showed of all domains; the environment was primarily affected (the lowest score ranged from 28.95 in mild cases to 41.89 in severe cases), followed by physical health scores ranged from 58.95 to 62.48, while domain 2 (psychological health) and 3 (social relationship) showed comparable scores

Table 2. Distribution of R.A patients according to Quality-of-life scores

Domain components	Mild (22 patients)	Moderate (21 patients)	Severe (37 patients)
Domain 1 mean score	58.95±25.5	65.38±25.54	62.48±25.39
Domain 2 mean score	74.27±24.9	76.61±24.9	82.13±24.22
Domain 3 mean score	72.72±20.6	83.42±20.6	81.54±21.66
Domain 4 mean score	28.95±26.2	32.14±26.24	41.89±28.96

One of the diseases that could bring massive work disability with symptoms of depression is R.A., an autoimmune disease with many complications affecting joints and many parts of the body, leading to reduced quality of life [11-14]. Additionally, the disease can occur at any age in any gender but with a higher percentage in young females between 25-45 years [14].

In our study, R.A. was noticed mainly in the age group of 18-45 years (51.25%). The mean age of all patients was (42.8125). A comparable result was noticed in a study done by Phillips *et al.* (2012) where the patients were divided into three age groups; the first one aged between 18-45, the second one ranged from 46-55 years, and the last one ranged from 46-55 years and in the first group (18–45 years), the highest percentage of R.A. patients were found, while the mean age of these patients was (48.9) [15]. In another study done in Iraq by Faiq *et al.* (2019), the group with the highest R.A. incidence was 50–59 years, with a mean age of (50.8) [16].

In the present study, the female patient group represents (83%) of the patient, and this result close to that in a study was done by Gorial *et al.* where the Male 29(11.6%) and Female 221(88.4%) [17]. It is known that the pain perception in females was higher than in males gender [17], with consequences leading to limitations in daily physical activity. However, the latter does not always correlate with specific biomarkers of disease activity [18]. Several previous studies around the world reported that most patients with R.A. are middle-aged women, generally greater than 70%, although R.A. can occur at any age in either gender [19].

Patients with a disease duration of ≤ 5 years in this study represent most participants (38%), and those with a duration of disease more than five years were older than other patients. A comparable result was noticed in Dow *et al.* (2012), where the patients with recent onset R.A. (≤ 2 years) were slightly younger than those with R.A. for > 2 years (65%), and the patients with long disease duration showed low Q.O.L. and more physical disability QoL and functional ability were positively correlated in patients with long-standing R.A., with a large proportion showing impairments in both [15]. As disease duration increased, the rate of work disability increased, as shown in a recent study; 35, 39, and 44% after 5, 10, and 15 years of R.A. diagnosis, respectively [20].

In this study, of the 80 Respondents, 60% were unemployed. In contrast, 40% were employed, a similar result showed by Sato *et al.* (2013), where work disability is a consequence of many rheumatic diseases which occurs early during the initiation of the disease [21]. But as science advanced and many therapeutic options were discovered, RA-induced work disability rates appear to have dropped [22, 23]; however, the risk of work disability and quitting jobs is still high in R.A. patients [23, 24], with disability rates reaching 20% to 30% in the first 2 to 3 years of the disease [25].

Our study found a positive family history of R.A. in 85.75% of patients. The same result was noticed in a study by Matthew *et al.* (2017), which indicates that the general population of Taiwan has an estimated familial transmission of 59.4%.

This study indicates that the risk of R.A. incidence increased by five folds in first-degree relatives compared with the general population [26].

One of the characteristic features of R.A. is Morning stiffness which is dependable by the patients and physicians to make decisions on changing medication in daily practice life and work [27].

The assessment of morning stiffness by the patients depends on a scale from 0(no morning stiffness) to 10 (severe morning stiffness). Patients with a rating of (1-3) were categorized as mild, while ratings ranging from (4-7) were categorized as moderate; finally, patients with a rating of (8-10) considered morning stiffness as severe [9]. In the current study, 46% of patients were severely stiff in the morning, 27% were mild, and 26% had moderate stiffness, and this is similar to a study done by Pinheiro *et al.* (2013), which concluded that Mild (25%) Moderate (36%) Severe (65%) where the Patients with R.A. with active disease had higher severity scores of morning stiffness than those with inactive disease [21].

Chronic pain caused by R.A. will adversely affect not only physical activity but also economic, social, psychological, and financial aspects, according to Kuo *et al.* (2012) [28].

Evaluation of well-being-related personal satisfaction depends on treatment strategies and the impact of a series of elements, i.e., sociodemographic contrast, arrangement of values, assumptions, requirements, mentalities, and techniques for esteeming an illness circumstance and transformation interaction of a patient to a new, evolving circumstance [29]. Generally, dealing with constantly sick patients is significant while considering all areas associated with well-being upkeep; as shown by WHO, well-being is bio-psycho-social prosperity, not just a shortfall of illness or disorders [30].

Of all domains, domain four, the environment, was affected mostly (the lowest score ranged from 28.95 in mild cases to 41.89 in severe cases), followed by domain 1(physical health) mean score ranged from 58.95 in mild to 62.48 in severe.

Functional disability increased in R.A. patients, as shown in this study, with decreased physical health scores in all patients with different severity of morning stiffness due to the damaging effect of this disease on multiple parts of the body, and this is similar to study done by Bedi *et al.* (2005) and Kadhim *et al.* (2019), which presumed that R.A. had the most impact on the physical domain of Q.O.L. [16, 31]. All patients in this study have a low score in domain four which cover many aspects of patients' environment for many reasons; firstly cost of transportation to the rheumatology center is high, besides the overall cost of health care services such as laboratory data and drugs regimen for R.A. is also consider a burden on R.A. patients. Secondly, the prolonged waiting time to see a doctor is somewhat bothersome to those patients. Lastly, a low score in this domain gives an idea about resource utilization in Iraq associated with poor satisfaction, similar to other studies in different countries [32, 33].

Although patients in this study were physically disabled, the social and psychological spaces of Q.O.L. were preserved and recorded higher scores among other domains, similar to other studies [34, 35]. A possible explanation for the social domain score is that the number of questions covering this aspect in WHOQOL-BREF is only three. In contrast, other domains contain six or more questions and respond more sensitively to changes than the social and psychological domains [10]. In addition, depression level is low with high satisfaction about their lives, which comes in contrast to another study that found a close

relationship between depression and the early stages of disability in patients with R.A. [36, 37], meaning that participants in this study gain good support from their families, so they adapted to R.A. and knew how to deal with it.

Some limitations in this study included few participants, severity rating done by physicians, and the patients reported greater severity in most cases.

Conclusion

In conclusion, rheumatoid arthritis patients in this study perceived lower quality of life in physical and environmental aspects with better improvements in social and psychological health scores. In addition, morning stiffness considers a significant factor affecting Q.O.L. in those patients.

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