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# Predictors and Effective Factors on Quality of Life Among Iranian Patients with Rheumatoid Arthritis

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## ABSTRACT

**Introduction:** Rheumatoid arthritis is a chronic autoimmune disorder that leads to joint swelling, stiffness, pain and progressive joint destruction. It is a common disease with prevalence of 1% worldwide that affecting all aspects of patients' lives. Therefore, this study was conducted to summarize and provide a clear view of quality of life among the patients in Iran through a literature review. **Methods:** This study was conducted as a literature review over article published between 2000 to 2013, by using data bases comprise of Google scholar, Science Direct, Pubmed, IRANDOC, SID, Medlib, Magiran and by key words: "quality of life", "rheumatoid arthritis", "Iran" and their Persian equivalents. Finally 2065 articles assessed and according to the aim of the study are 11 studies synthesized. Extracted results first were summarized in Extraction Table, and then analyzed manually. **Results:** In reviewed articles rheumatoid arthritis patients' quality of life was measured by using five different tools, the most important one of them was SF36 questionnaire. Among eight dimensions of SF36 questionnaire, the highest mean according included articles result was social functioning with average score of 63.4 and the lowest for physical limitation (physical role functioning) with score of 43. Overall, mean of eight dimensions was 52.47. The most important factors affecting quality of life were disease severity and pain, depression, income, educational, occupational status, married status, sign of disease, fatigue, anxiety and disease activity scores. **Conclusion:** The results of the study showed relatively low quality of life of rheumatoid arthritis patients in Iran. Empowering patients by participating them in service delivery process and decision making can improves quality of life and in this regard health care provider must be focused on patient self-care abilities and reinforcing this factor by training them.

**Keywords:** Rheumatoid Arthritis, Quality of Life, Systematic Review, Iran.

## 1. INTRODUCTION

Rheumatoid arthritis (RA) is a chronic autoimmune disorder characterized by inflammation of synovial tissues that leads to joint swelling, stiffness, pain, and progressive joint destruction with unpredictable course and wide variation in severity (1, 2, 3). RA has a prevalence of 1% in the world, with a higher prevalence among both elderly peoples and women (3, 4, 5). In addition to bad effects on patients' quality of life and life expectancy, RA has a considerable financial impact on patients family, health care payers, and society (5, 6).

Daily pain, stiffness, fatigue, depression, physical disability and associated psychological features are common features of RA (7). Pain and fatigue are essentially symptomatic consequences, which occur early in the disease and may remain constant throughout its course; disability is a result of the pain, inflammation and joint damage that characterizes RA and de-

velops early and gradually progresses; the psychological effects of RA appear to follow of the combination of pain and disability, mediated by individual patients underlying health beliefs and their pre-existing psychological conditions. Clinically significant fatigue is present in 40-80% of patients with RA and many patients continue to have considerable amounts of pain. Some studies have suggested that depressive symptoms are common in 25% or more of patients (7, 8). Such morning stiffness may last for an hour or more in 24-49% of patients (7). Depression has been shown to be associated with reduced health status, as well as higher level of pain and fatigue levels and reduced quality of life (8). Thus, RA is traditionally considered to be a disease with a major impact on all aspects of quality of life (7).

The quality of life (QOL) is defined as perception of people about life, values, goals, standards, and interests (9, 10). Many instruments exist for measuring QOL. The medical outcomes

study short form 36 item (SF-36) and medical outcomes study short form 20 item (SF-20) health status survey questionnaire are two of the most commonly used generic measures used to quantify the health related quality of life in people with musculoskeletal disorders. The SF-36 consists of 36 items that are employed to calculate scores on eight dimensions and the SF-20 with 20 items, measure has six dimensions. Every item is scored between 0 and 100, and the best score for example 100 score is defined as better situation in the dimensions (9, 11-16).

Unfortunately the available treatment options do not completely treat RA. Thus, the basic aim of treatment is to manage and control the effects of disease on patients at minimum level by increasing the quality of life (17). Also studies indicated that quality of life could be considered as one of the most important components of quality of medical and health care (9). Despite, the importance of Quality of life in patients with rheumatoid arthritis, up to our knowledge, there isn't any review study in this field published in Iran to summarize the results and to provide a general and clear cut perspective of patients' quality of life. For this reason, this study has been conducted to conclude and provide a general and clear view of the results of previous studies to be used in planning and interventions for improving Rheumatoid Arthritis patients' quality of life.

**2. MATERIAL AND METHOD**

A literature review performed including three English and five Persian electronic databases: Science Direct, Pubmed and Google scholar for English and Google scholar, IRAN DOC, SID, Medlib and Magiran in Persian, the selected time period for searching articles was since 2000 till 2013. The combination of following keywords was used as search strategy: "quality of life", "rheumatoid arthritis", "Iran" and their Persian equivalents.

Our eligible criteria for selecting articles were quantitative or qualitative studies about rheumatoid arthritis patients' quality of life in Iran. Only studies published in English and Persian were included. Also, to control and minimize effect of time on patients' quality of life, since it could be changed by time because of factors such as medical advancements, changing patients' knowledge and life styles, and many other factors all articles published from 2000 till 2013 were included in this study. Articles measure quality of life only by qualitative methods without release conceptual framework for predicting quality of life and those articles such as: letter to the editors, and articles presented in seminars and conferences without full text, or resulted from implemented interventions and animal studies, were excluded.

Articles were first categorized according tools' used to measure quality of life and then studied accurately and after extracting the required information, results were summarized in extraction table at first and then quantitative data were analyzed by excel software and presented descriptively. For analyze factor affecting quality of life, content analysis of text was done by authors to code and combine main categories to expanding categories after consultation.

**3. RESULTS**

Overall, 2065 articles were found in searched references. After studying titles, abstracts, and full texts of articles, and excluding duplicated and irrelevant cases, 11 articles totally relevant to the aim of the study were selected and evaluated.

In investigated articles for evaluating patients' quality of life in Iran, 5 different tools were used and Short Form Health Survey (SF-36) questionnaire and MOS-SF-20 (Medical Outcome Survey Short Form 20) were applied mostly with 5 and 2 times respectively.

**Mean of Rheumatoid arthritis patients' quality of life based on eight items of SF36 and six dimensions SF20**

In the present study, scores of each one of eight dimensions of SF36 questionnaire were reported specifically in 5 articles (14, 19-22), and scores of each one of equivalent six dimensions of SF20 questionnaire were reported in 2 articles (16, 23) combined with SF36 results. Mean of each one of dimensions has been showed in Figure 1.

As it is shown in this diagram, social functioning with score of 63.4 and physical limitation (physical role functioning) with score of 43 have the highest and the lowest scores in octet dimensions for quality of life, respectively. Overall mean of these octet dimensions simply is 58.49.

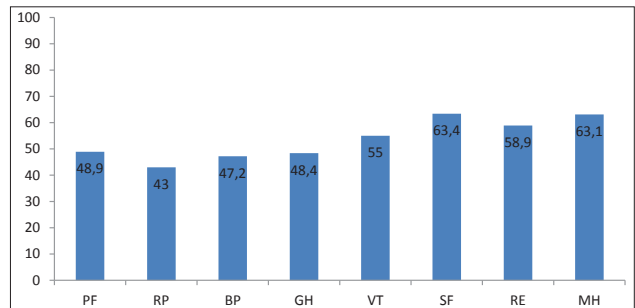


Figure 1. Mean of scores in octet dimensions of Rheumatoid Arthritis patients' quality of life in Iran based on SF36 questionnaire. PF, physical functioning; RP, role-physical; BP, bodily pain; GH, general health; VT, vitality; SF, social functioning; RE, role-emotional; MH, mental health

In Figure 2 composite mean of general dimensions of quality of life, (physical and mental health score) is 47.49 and 59.93 respectively. Finally, overall mean of total QOL score of rheumatoid arthritis patients' quality of life in Iran with allocation of weight to dimensions and studies sample size was 52.47.

**Paradigms of quality of life predictors based on path analysis of the Precede model**

The PRECEDE model is a statistical technique used primarily to examine the comparative strength of direct and indirect relationships among variables. The model served as a heuristic

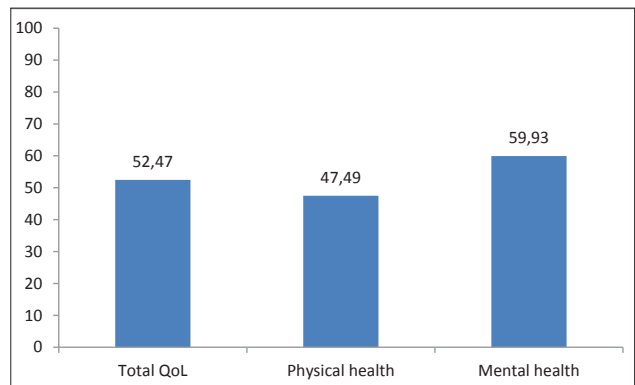


Figure 2. Mean of general dimensions of Rheumatoid Arthritis patients' quality of life in Iran

device to identify the variables to study, as well as aiding in organizing the study and analyzing the data by a series of parameters are estimated by solving one or more structural equations in order to test the correlation matrix between two or more causal models, which are hypothesized by the researcher to fit the data (24, 25). According to the model, predictors for RA patients quality of life are; reinforcing factors (rewards or punishments that are experienced or anticipated consequences of behavior, e.g. social support), Enabling factors (characteristics of the individual or environment that facilitate or are needed to carry out the particular behaviors, e.g. personal skills and resources in the environment), Predisposing factors (characteristics that lead to or motivate behavior, including knowledge, attitude and self-efficacy), Self-care behaviors and Health status.

#### **Factors affecting quality of life**

In reviewed articles, different variables and factors have been reported to affect rheumatoid arthritis patients' quality of life, they are;

#### **Disease severity and pain**

Disease severity and pain of rheumatoid arthritis are important factors in most of the studies that had significant relationship with decreasing patients' quality of life. By increasing disease severity and pain, a significant decrease occurs in physical, psychological and mental function. This is more obvious in physical function (14, 19, 22).

#### **Depression**

The role of depression has been considered as an effective factor in most of the investigated studies that showed significant relationship between depression and patients' quality of life. In the other word, by increasing depression, a significant decrease occurs in patients' quality of life (14, 26-28).

#### **Demographic Condition**

Higher family income and educational status, having a job and being married had significant correlate with improving some aspects in rheumatoid arthritis patients' quality of life in some studies (26, 27, 29). Whereas by increasing age, a significant decrease occurs in patients' quality of life (29). In this studies, there was no significant relationship between sex and quality of life (20, 21, 29).

#### **Signs and symptoms**

Signs and symptoms such as; fatigue, anxiety and higher disease activity scores due to rheumatoid arthritis in some investigated studies had a significant relationship with patients' quality of life. These conditions significantly decrease patients' quality of life (22, 26, 27).

#### **Other factors**

It is noteworthy to mention some other factors affecting rheumatoid arthritis patient's quality of life such as doing aerobic exercise and use of physiotherapy (29, 30).

## **4. DISCUSSION**

In chronic diseases, improvement of patients' QoL is as important objectives as improving the medical status. Also, QoL measures have been increasingly used for resource allocation and determine treatment strategies (7). Among the eight dimensions assessed the worst scores in the scales of: role-physical, body pain and physical functioning. On the other hand, according study findings the most important factors affecting quality of life were disease severity and pain, depression, income, educational, occupational status, married status, sign of disease, fatigue, anxiety

and disease activity scores.

In our review of literature QoL score were relatively low for Iranian patients. In studies of Ranzolin (31), Tander (7) and Lapsley (32), SF-36 scores was 55.5, 54.4 and 55.5 which were comparable with our study. Whereas, study of Lima et al (33) in Brazil showed QoL score with SF-36 was 75.4, so it appears QoL was some better in Brazil.

In Iranian studies role-physical and social functioning was lowest and the highest scores, respectively. Role-physical with four item, related to physical disability resulting in limitations of usual role activities and social functioning with two items related to physical and emotional problems resulting in limitations of social activities (7, 34).

Almost all of the drugs currently used in rheumatoid arthritis, such as anti-inflammatory drugs, disease-modifying anti-rheumatic drugs (DMARDs) and biological drugs, all target pain relief to a greater or lesser extent (8). Although controlling pain is one indication for successful treatment, the majority of RA patients have significant amounts of pain despite therapy (8). Pain can be so severe that it interferes in the individual's work, daily life activities and QoL (7). This review demonstrated that by increasing pain, a significantly decrease patients' quality of life. These results have been also described by Tander et al (7), Pollard (8) and Garip (17).

The increase in the scores of the depressive moods was related to significant worsening of physical functioning and impairment in daily functioning due to emotional problems (7). Estimates supported of the prevalence of depression in patients with rheumatoid arthritis vary between 14% and 46% and in Zyrianova study (35) the prevalence of depression was 65%. other authors reported depression has been associated with reduced health status, as well as higher pain and fatigue levels and finally reduced quality of life (7, 8, 36).

In evaluated studies, some items are reported as factors improving patients' quality of life such as low age, high education, higher income, being married and having a job. The results of most conducted studies in this field confirm these items (33).

In Iranian studies the age has a major influence in QOL. As expected, similar to the results of other studies, older individuals have poorer health status than younger ones, (33, 37, 38)

We didn't find any correlation between sex and patients' quality of life patients with RA in included studies. These results have been also supported by Bedi et al (39) and Tander et al (7). Whereas result the study of Garip et al (17) in 2010 and few other studies (33, 40) showed correlation between sex and QOL. Therefore, Women obtained lower scores than men in all domains expected for QOL (17).

Fatigue, disease duration and higher disease activity scores, in present study, caused a significant decrease in patients' quality of life. Many studies showed that regard fatigue as a major determinant of their quality of life (8, 41). RAQoL was linearly related with disease duration at a medium level and disease activity scores strongly correlated with RAQoL.

Study findings showed health status and enabling factors had a direct effect on quality of life which health status had the most powerful effect. Self-care behaviors, predisposing, reinforcing and enabling factors had an indirect effect on quality of life through health status. After health status, self-care behaviors are the second powerful predictor of quality of life in RA patients and then enabling factors is the third one (23, 25, 42) (Figure 3).

Although this was the first study in the country attempting to summarize the results of conducted studies on of rheumatoid arthritis patients' quality of life systematically. The most important limitation for this study is that, due to the different methods of information collection and reporting in available studies. Nevertheless, it is possible to show more clear results about status of these people's quality of life through a meta-analysis study in this field, whereas there are few study about these patients QoL in Iran and its require to implement more studies in different fields to measure and assess QoL. As well as these studies could not reflect all patients' quality of life in a country, so has the need for more research in this field. In spite of these limitations, in this study it was tried to identify all articles in this field by accurate and complete search.

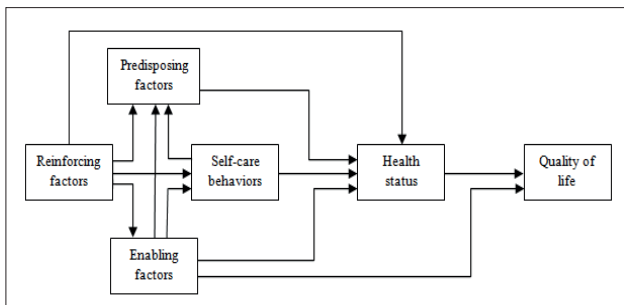


Figure 3. Paradigms of quality of life predictors based on path analysis of the Precede model

## 5. CONCLUSION

This review showed relatively low quality of life among Iranian rheumatoid arthritis patients in general. For improving the Quality of life all health workers must specially attention to the all dimensions of QoL as well as Paradigms of quality of life predictors based on path analysis of the Precede model. In this regard, it is necessary to have a wide view for improving QoL from different perspectives and by participation of all stakeholders. Therefore, this study suggests that identified weak points and planning for them at all levels, from the individual level to the community level, as well as empowering patients by participating them in service delivery process and decision making can improves quality of life and in this regard health care provider must be focused on patient self care abilities and reinforcing this factor by training.

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