


# Psychological determinants of quality of life in patients with rheumatoid arthritis

Determinantes psicológicos da qualidade-de-vida em pessoas com artrite reumatóide  
Determinantes psicológicos de la calidad de vida en personas con artritis reumatoide

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## Descriptores

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## Abstract

**Objective:** To assess the emotional states of the anxiety and depression dimensions and the quality of life in patients with rheumatoid arthritis.

**Methods:** A primary, descriptive, and cross-sectional study conducted in the northern region of Portugal, using a sample of 139 people suffering from rheumatoid arthritis (79.86% of whom were women) with a mean age of 63.05 years. A sociodemographic questionnaire, the “Hospital Anxiety and Depression Scale” and the “EQ-5D – Health Gains questionnaire were administered. Inferential statistics were used to conduct data analysis. IBM Statistical Package for the Social Sciences (SPSS) Statistics 24 program was the instrument of choice and  $p < 0.05$  was deemed statistically significant.

**Results:** Findings on emotional state showed severe/extreme anxiety levels in 45.3% of the respondents, moderate anxiety in 36.7% of them, mild anxiety in 10.1% and only 7.9% of participants showed no sign of anxiety. Most of the participants did not present any sort of depressive symptoms (71.9%) and 13.7% of them were diagnosed with mild depression. Low levels of depression were associated with a better quality of life. On the other hand, low levels of anxiety seem to lead to poorer quality of life ( $p=0.000$ ).

**Conclusion:** Evidence shows that anxiety and depression are predictors of QOL in patients with RA. That way, nursing interventions aimed at controlling the factors that trigger anxiogenic and depressive behaviours must be implemented to protect and improve patients' health.

## Resumo

**Objetivo:** Avaliar o estado emocional, nas dimensões ansiedade e depressão, e a qualidade de vida, em pessoas com artrite reumatóide.

**Métodos:** Estudo primário, descritivo e transversal, desenvolvido na região norte de Portugal, com uma amostra de 139 pessoas com artrite reumatóide (79,86% mulheres) e com média de idades de 63,05 anos. Foram aplicados: um questionário sociodemográfico, a escala “Hospital Anxiety and Depression Scale” e o questionário “EQ-5D – Avaliação de Ganhos em Saúde”. Na análise de dados, por meio do programa *IBM Statistical Package for the Social Sciences (SPSS) Statistics 24*, recorreu-se à estatística inferencial, considerando-se estatisticamente significativo um  $p < 0,05$ .

**Resultados:** Os achados sobre o estado emocional mostraram níveis de ansiedade severos em 45,3%, ansiedade moderada em 36,7%, ansiedade leve em 10,1% e apenas 7,9% dos participantes pontuaram sem ansiedade. A maioria não apresenta sintomatologia depressiva (71,9%) e 13,7% manifestou depressão

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leve. Os baixos níveis de depressão foram associados a uma melhor qualidade-de-vida, contrariamente aos níveis de ansiedade, onde uma diminuição dos mesmos diminui a qualidade-de-vida ( $p=0,000$ ).

**Conclusão:** Observou-se que a ansiedade e a depressão emergiram como preditores da QDV em pessoas com AR. Para proteger e melhorar a saúde dos pacientes, destaca-se a necessidade de implementar intervenções de enfermagem direcionadas ao controle dos fatores que induzem comportamentos ansiogênicos e depressivos.

## Resumen

**Objetivo:** Evaluar el estado emocional, en las dimensiones ansiedad y depresión, y la calidad de vida, en personas con artritis reumatoide.

**Métodos:** Estudio primario, descriptivo y transversal, desarrollado en la región norte de Portugal, con una muestra de 139 personas con artritis reumatoide (79,86 % mujeres) con un promedio de edad de 63.05 años. Se aplicaron: un cuestionario sociodemográfico, la escala "Hospital Anxiety and Depression Scale" y el cuestionario "EQ-5D – Avaliação de Ganhos em Saúde". En el análisis de datos, por medio del programa *IBM Statistical Package for the Social Sciences (SPSS) Statistics 24*, se recorrió a la estadística inferencial, y se consideró estadísticamente significativo un  $p < 0,05$ .

**Resultados:** Los hallazgos sobre el estado emocional mostraron niveles de ansiedad severos en 45,3 %, ansiedad moderada en 36,7 %, ansiedad leve en 10,1 % y apenas el 7,9 % de los participantes puntuaron sin ansiedad. La mayoría no presenta sintomatología depresiva (71,9 %) y el 13,7 % manifestó depresión leve. Los bajos niveles de depresión estuvieron asociados a una mejor calidad de vida, contrariamente a los niveles de ansiedad, en la que una disminución en ellos disminuyó la calidad de vida ( $p=0,000$ ).

**Conclusión:** Se observó que la ansiedad y la depresión emergieron como predictores de la CDV en personas con AR. Para proteger y mejorar la salud de los pacientes, se destaca la necesidad de implementar intervenciones de enfermería direcionadas al control de los factores que inducen a comportamientos ansiogênicos y depresivos.

## Introduction

The emergence of a chronic disease in adults implies changes in behaviour that will trigger anxiety-related disorders and depression. This situation will have a strong impact on one's quality of life, i.e., the individual's perception of his/her idiosyncrasies, goals, expectations, standards, and concerns. It is a broad and complex concept, which focuses on various determinants: the person's physical health, psychological state, level of independence, social relationships, personal beliefs, and the relationship people have to their environment. <sup>(1)</sup>

Rheumatic Diseases (RD) are responsible for incredibly high healthcare costs, since they require repeated medical consultations, hospitalizations, prescription drugs, and rehabilitation treatments and lead to rheumatic patients' loss of quality of life (QOL) which represents the first cause of temporary disability and entails a high rate of sick leave and early retirements. <sup>(2)</sup>

Rheumatoid Arthritis (RA) is a chronic inflammatory disorder that causes joint pain and that affects approximately 0.5 to 1% of the world adult population. <sup>(3)</sup> Its incidence increases among patients who are between 25 and 55 years of age and affects more commonly women than men (a ratio of 2/3:1). <sup>(4)</sup> A prevalence of 0.7% for RA was found among the Portuguese population. <sup>(2)</sup>

RA affects mostly joints and periarticular structures. It may, however, damage connective tissue in many parts of the body and result in various systemic manifestations. <sup>(5)</sup> Hence, it leads to a poorer functional capacity and quality of life, and to a higher risk of RA-associated comorbidities. <sup>(3)</sup>

As there is no cure for RA, the treatment is applied merely to control symptoms, relieve pain, prevent structural damage and premature death, improve/normalize function, and improve the patients' social participation and QOL. <sup>(5,6)</sup>

Several psychiatric comorbidities, such as depression and anxiety, are common among people with RA, and may produce undesirable consequences. <sup>(7,8)</sup>

Depression, as a nosological entity, is characterized by depressed mood and loss of interest or pleasure in activities that used to be pleasurable, poor concentration, appetite loss and sleep disturbance, sense of guilt, low self-esteem, hopelessness, among others, and has a huge impact on people's quality of life. <sup>(9)</sup>

Anxiety is another of the most common mental disorders and represents a serious challenge to public health. It is commonly regarded as a vague and irrevocable sense of fear or apprehension, a feeling of pressure or discomfort resulting from the anticipation of an impending danger and from the fear of the unknown or unusual. <sup>(10)</sup>

Depression is associated with high levels of pain and disability, lower health-related quality of life and increased mortality<sup>(7,11,12)</sup> and that is why the nosological entities under analysis in the chronic disease medical courses require further assessment, prevention and, if necessary, treatment.

In this context, the Hospital Anxiety and Depression Scale (HADS) developed by Zigmond and Snaith in 1983 is a valid instrument to help diagnose anxiety and/or depression disorders<sup>(13)</sup> and, was, therefore, used in this investigation.

The international scientific literature focusing on the development of mental illness as a consequence of rheumatoid arthritis is still scarce. This fact was more than enough to justify an investigation designed to study the existence of a relationship between both and that would, simultaneously, fulfil a purpose of the Portuguese Nurses' Association which recommends the provision of culturally accessible evidence-based nursing care coupled with the best degree of recommendation.

This primary study is justified by the need to monitor variables that are likely to have an impact on therapeutic adherence. In addition, the assessment of the different levels of these nosological entities in people with chronic diseases, such as RA, is essential for their effective prevention and for the implementation of a holistic treatment.

As part of an ongoing effort to better understand the impact of RA on the lives of people affected by that disease, this study seeks to assess the emotional states of anxiety and depression, and the quality of life in people with RA, in order to support the planning of more suitable nursing interventions.

Bearing all this in mind, the following statements were adopted as guiding question and research hypothesis, respectively:

- Are the emotional states of anxiety and depression related to the quality of life in people with rheumatoid arthritis who are undergoing treatment in the rheumatology follow up consultations at a hospital unit located in northern Portugal?
- The emotional states of anxiety and depression predict the quality of life of people with rheumatoid arthritis.

## Methods

This is a descriptive analytic and correlational study with a cross-sectional approach, which is part of a broader research project entitled Development and Feasibility of an eNURSING Intervention aimed at People with Rheumatoid Arthritis: Continuity of Care. The main study design and development follows the guidelines provided by the Medical Research Council (MRC)<sup>(14,15)</sup> Framework for complex interventions and is included in the first stage of the MRC (Development), mainly the part that deals with modelling intervention components and defining outcomes.

The development of this study complied with all the formal, legal, and ethical procedures of good conduct in research, namely:

- The study received a favourable opinion from the University of Lisbon and was therefore approved and registered (identifier TID n°.101622929).
- Permission was obtained for each of the scales used by the authors.
- The research was submitted to the Health Ethics Committee of the reference hospital (reference n°. 03/20/05/2019) and obtained a favourable opinion.
- The administration of the data collection instrument was authorized by the Board of Directors of the hospital.
- Participants were guaranteed the right to self-determination. Their rights to intimacy, anonymity, and confidentiality were also ensured. Data collection required the existence of an informed and free consent.

The non-probability sample by convenience composed of 139 participants corresponds to 80% of the patients with RA assisted in the rheumatology consultation of a hospital located in the north of Portugal. The existence of another chronic disease, such as anxiety or depression, was an exclusion criterion. The data collection instrument included a questionnaire focusing on the participants' socio-demographic background, the "HADS - Hospital Anxiety and Depression Scale" (the Portuguese version validated by Pais-Ribeiro, Silva, Ferreira, &

Martins, 2007) and the “EQ-5D - Health Gains questionnaire, Portuguese version, 1997, 2013, EQ-5D v2” (EuroQoL Group, 1987, validated by the Centre for Health Studies and Research of the University of Coimbra). The presence of symptoms that may suggest anxiety and depression was assessed using the HADS scale, developed by Zigmond and Snaith in 1983, to make sure that the emotional components of physical illnesses could be identified. This scale will work as a diagnosis device for anxiety and depression in the setting of a general medical hospital and will prove very useful to assess changes in the patient’s emotional state.<sup>(16)</sup>

The HADS consists of two subscales: a seven-item subscale that measures anxiety, and another seven-item subscale that measures depression. Each subscale is scored and assessed separately. The type of response required for the 14 items of the scale ranges from zero (0 - Low) to three (3 - High), on a 4-point Likert scale. For each item there are four possible responses, and the participant has to choose the one that fits the way he/she has felt during the past week. The total scores of each subscale range from 0 to 21 and represent the sum of the scores obtained in the items included in each subscale. Higher scores indicate high levels of anxiety and depression.

The scores obtained for each subscale may indicate a possible clinical disorder. The authors suggest eight (8) as cut-off point and consider that the lowest scores show the absence of anxiety and depression. On the other hand, they consider that anxiety and depression may be classified as “normal” (0-7), mild (8-10), moderate (11-15) and severe (16-21).<sup>(13,16)</sup>

The EQ-5D questionnaire was one of the tools used to assess the quality of life of people with RA. Said questionnaire allows the combination of two components that are essential to any health-related quality of life measurement that can be used in cost-utility evaluations: a profile describing a person’s health state according to several domains or dimensions; and a numerical scale to assess the aforementioned health state.<sup>(17)</sup>

Developed by the EuroQoL group in the 1980s and available to general public since 1990, the EQ-5D provides a classification system that describes

health across five dimensions: mobility, self-care, usual activities, pain/discomfort and anxiety/depression. 3 levels of problem severity experienced or felt by the individual are described in each dimension: “no” (level 1), “some” (level 2) and “extreme” (level 3). For the EQ-5D, there are  $3^5 = 243$  possible health profiles.

The respondent is also asked to classify his or her prevailing state of health using a visual analogue scale bounded at 0 (worst imaginable health state) and at 100 (best imaginable health state) often referred to as the EQ-VAS thermometer. For each individual, the result of this classification is represented by a five-digit string. For example, state 21132 corresponds to the health state of a person who experiences some problems walking, who has no problems in taking care of him/herself and performing his/her usual activities, who experiences extreme pain or malaise and who are feeling moderately anxious or depressed.

The answers may be aggregated using an algorithm based on the values set by society, i.e., the values that individuals associate with each one of the health states and will allow the design of a value index. This value will be placed on a scale that ranges between 1 (perfect health) to 0 (death) and that also permits negative values that are used to describe health states that are deemed worse than death. This way, it will allow researchers to generate an index that will be used to represent the value of the state of health of an individual.<sup>(17)</sup>

People with RA were classified into three groups according to the QOL index. Scores  $\leq 0$  refer to “Poor QDL”; “Fair QDL” when scores  $>0$  and  $<1$ ; “Perfect health” = 1. In accordance with the Medical Research Council (MRC), which was the theoretical model chosen for this study, the IBM Statistical Package for the Social Sciences (SPSS) Statistics 24 was used to analyze the results.  $P < 0.05$  was accepted as statistically significant. The statistical procedures included a descriptive analysis and the definition of absolute frequency and absolute percentage. Some of those were measures of location (mean) or variability measures (coefficient of variation and standard deviation). Once the normality of the numerical variables was determined- using

Kolmogorov-Smirnov test- and the values of asymmetry and kurtosis were calculated, the Kurskall Wallis test was used to perform inferential analysis.

The chi-square test of independence was used when the variables under study are categorical. The prediction model was tested using multiple regression.

## Results

79.86% of the participants were female between the ages of 26 and 85 and with a mean age of 63.05 years. Table 1 briefly characterises the patients with RA who were receiving treatment in the rheumatology consultation of a hospital located in the northern area of Portugal.

**Table 1.** Sociodemographic background of the sample

| Variables                                       | Total<br>n(%)<br>139(100) |      | Chi-squared test<br>$\chi^2$ |
|---|---------------------------|------|------------------------------|
| Marital status                                  |                           |      |                              |
| With a partner                                  | 96                        | 69.1 | $\chi^2=0.578$ ; $p=0.501$   |
| Place of residence                              |                           |      |                              |
| Rural   | 110                       | 79.1 | $\chi^2=0.007$ ; $p=1.000$   |
| Academic qualifications                         |                           |      |                              |
| Have left school after the 4 <sup>th</sup> year | 86                        | 61.9 | $\chi^2=0.693$ ; $p=0.724$   |
| Employment status                               |                           |      |                              |
| Unemployed                                      | 81                        | 58.3 | $\chi^2=7.339$ ; $p=0.010$   |
| Are you affiliated with any religion?           |                           |      |                              |
| Yes   | 123                       | 88.5 | $\chi^2=10.019$ ; $p=0.004$  |

$P < 0.05$  statistically significant difference;  $p \geq 0.05$  statistically non-significant difference

The use of the EQ-5D Scale to assess QOL revealed that the participants showed no difficulty in dimensions such as mobility (54.7%), self-care (59.7%), and usual activities (52.5%), that 35.3% of them do not feel pain/discomfort and 68.3% do not show any sort of anxiety/depression. Most of the sample seem to have a reasonable QOL (90.6%) and only 9.4% of people with RA confess to having “poor quality of life”. None of the participants’ scores reflect the existence of “perfect health”. The minimum score obtained in the QOL index was -0.429 and, according to the scale applied, negative values reflect health states “worse than death”. The maximum value obtained in the QOL index was 0.650, which shows a “reasonable quality of life”, with a strong oscillation around the mean

(VC=61.75%) (Table 2). The mean value was 0.400 (SD=0.247), which means a “reasonable quality of life”. The assessment carried out by the respondents of their health status showed a mean value of  $60.25 \pm 24.861$  on a scale where 0 corresponds to the worst imagined health state and 100 to the best imagined health state.

The study of the anxiety and depression dimensions, regarded as continuous variables, revealed that scores may vary between zero (0) and twenty-one (21) for each dimension. Higher values correspond to more negative states of anxiety or depression.

**Table 2.** Statistics related to the quality of life of patients with RA

|        | n   | SK/error | K /error | VC (%) | Mean Ranking | Mann Whitney U |
|--------|-----|----------|----------|--------|--------------|----------------|
| Male   | 28  | -2.891   | 1.730    | 80.56  | 66.29        | U=1450         |
| Female | 111 | -5.052   | 2.022    | 57.32  | 70.94        | Z= -0.551      |
| Total  | 139 | -5.922   | 2.995    | 61.75  |              | $p=0.582$      |

For anxiety, results ranged between a minimum of 3, a maximum of 21 and a mean value of 14.482 (SD=4.386) was found. Scores obtained for depression ranged between zero and 21, with a mean value of 5.475 (SD=4.318). Evidence also showed that, in the Anxiety dimension, men obtained higher mean values compared to women, with statistically significant differences (U=872;  $p=0.00$ ). The opposite occurred for the Depression dimension, with statistically significant differences (U=1143;  $p=0.030$ ) (Table 3).

In the Anxiety component, 45.3% of the participants showed a severe level of anxiety, 36.7% showed moderate anxiety, 10.1% mild anxiety and 7.9% did not show any anxiety at all. It is possible to observe that, in most cases, women show anxiety levels that are more moderate than those experienced by men (31.7% vs. 5%), with statistically significant differences found using the chi-square test ( $\chi^2=10.824$ ;  $p=0.013$ ).

Most patients with RA did not show any sign of depression (71.9%). Nonetheless, mild depression could be observed in 13.7% of them and the results demonstrated that women tend to feel stronger levels of depression compared to men (13.7% vs. 0% mild depression; 11.5% vs. 1.4% moderate depression and 1.4% vs. 0% severe depression), with statistically significant differences ( $\chi^2=8.342$ ;  $p=0.039$ ) (Table 3).

**Table 3.** Statistics related to anxiety and depression according to the participants' gender

| Variables  | Gender | n   | Mann-Whitney U |
|------------|--------|-----|----------------|
| Anxiety    | Male   | 28  | U= 872.000     |
|            | Female | 111 | Z=7088.000     |
|            | Total  | 139 | P=.000         |
| Depression | Male   | 28  | U=1143.000     |
|            | Female | 111 | Z=1549.000     |
|            | Total  | 139 | P=.030         |

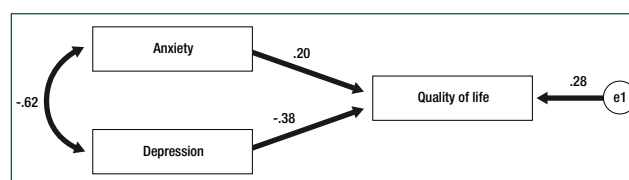
The assessment of QOL conducted according to the anxiety and depression clinical variables showed that the mean values for moderate anxiety and moderate depression are higher than those observed for any of the other levels used to describe the patients' anxiety and depression when the existence of "poor QPL" among people with RA is concerned (4.3% and 3.7%). Here, statistically significant and very significant differences were found, respectively ( $\chi^2=11.406$ ,  $p=0.010$  vs.  $\chi^2=21.796$ ,  $p=0.00$ ) (Table 4). It should also be noted that 44, 6 % of patients with RA who show severe levels of anxiety have a reasonable QOL ( $\chi^2=11.406$ ,  $p=0.010$ ).

As depression levels decrease, the QOL of the patients with RA improves. In contrast, the decrease in anxiety levels has been associated with a decrease in QOL. The Kruskal-Wallis test reveals highly significant statistical evidence ( $KW=20.816$ ,  $p=0.00$  and  $KW=19.599$ ,  $p=0.00$  respectively).

Structural equation modelling takes into account the model of linear causal interactions among variables while accounting for measurement error, and provides a direct method for the analysis of multiple simultaneous relationships, with statistical evidence.<sup>(18)</sup>

Based on this assumption, the structural equations model was designed, and depression and anx-

ety were found to be predictors of the quality of life of patients with rheumatoid arthritis, explaining 28% of its variance (AMOS scheme, pictured in figure 1). Comparative analysis of the beta coefficients suggests that the anxiety variable is positively associated, i.e., patients with anxious behaviours have better QOL. Conversely, for the depression variable, the presence of depressive behaviours decreases the level of QOL of patients with RA.



**Figure 1.** Multiple regression between the anxiety and depression variables and the quality of life

## Discussion

Quality of life is a concern of contemporary society and that is why there has been a growing need to assess QOL in people with RA, as it often has significant physical, psychological, and social implications, or may lead to an evident decline in QOL<sup>(3)</sup> and in its predictors, like anxiety and depression, for instance.

### Characterization of patients with RA, in the mobility, self-care and usual activities dimensions.

The responses provided by the participants do not reflect any sort of difficulty in dimensions like mobility (54.7%), self-care (59.7%), usual activities (52.5%). These findings are in line with other similar studies<sup>(19)</sup>. Over the last few years, we have wit-

**Table 4.** Anxiety and depression in people with poor and reasonable quality of life

| Anxiety        | No<br>n(%) | Mild<br>n(%) | Moderate<br>n(%) | Severe<br>n(%) | Total<br>n(%) | Chi-Square test ( $\chi^2$ ) |
|----------------|------------|--------------|------------------|----------------|---------------|------------------------------|
| Poor QOL       | 3(2.2)     | 3(2.2)       | 6(4.3)           | 1(0.7)         | 13(9.4)       | $\chi^2=11.406$<br>$p=0.010$ |
| Reasonable QOL | 8(5.8)     | 11(7.9)      | 45(32.4)         | 62(44.6)       | 126(90.6)     |                              |
| Depression     | No<br>n(%) | Mild<br>n(%) | Moderate<br>n(%) | Severe<br>n(%) | Total<br>n(%) | Chi-Square test ( $\chi^2$ ) |
| Poor QOL       | 3(2.2)     | 3(2.2)       | 6(3.7)           | 1(0.7)         | 13(9.4)       | $\chi^2=21.796$<br>$p=0.00$  |
| Reasonable QOL | 97(69.8)   | 16(11.5)     | 12(8.6)          | 1(0.7)         | 126(90.6)     |                              |

n – sample size; QOL – quality of life; Chi-square test ( $\chi^2$ )

nessed the emergence of new drugs and new strategies, such as the “treat-to-target” strategy (that sets disease remission in patients with long-term disease as a goal, in clear accordance with a given set of recommendations) that have allowed an improvement in the domains previously referred, the reduction in suffering and the improvement of long-term QOL.<sup>(20,21)</sup> Other investigations conducted with people with RA show that the emergence of depressive disorders is related to the unwillingness to perform household chores or to engage in social interactions or recreational activities.<sup>(22)</sup>

### Characterisation of patients with RA, in the anxiety and depression dimensions

According to the assessment of the domains included in the Hospital Anxiety and Depression Scale (HADS), people with RA, mostly female patients, tend to show severe and moderate levels of anxiety (45.3%; 36.7%). Once again, these findings are in line with national<sup>(23)</sup> and international studies<sup>(24,25)</sup>. As for the depression dimension, it was found that most people with RA do not show signs of depression (71.9%) or present only mild levels of depression (13.7%), which contradicts other studies<sup>(23)</sup>. However, the results obtained are in line with said studies when it comes to prove the prevalence of this nosological entity in female patients<sup>(23)</sup>.

### Impact of Anxiety and Depression on the QOL of patients with RA

Patients with mild levels of anxiety and moderate levels of depression showed worse QOL. Contrarily, patients with RA who show higher levels of anxiety and lower levels of depression tend to have better QOL ( $k_w=19.599$ ,  $p=0.00$ ;  $k_w=20.816$ ,  $p=0.00$ ). This fact is consistent with an international study conducted on depression<sup>(25)</sup> and with a national study that focuses on both dimensions.<sup>(2)</sup> One of the studies, whose purpose was to assess health-related quality of life and its factors, revealed a negative and significant association between the depression and anxiety variables and QOL.<sup>(19)</sup>

However, this study demonstrates that people with RA who show lower levels of anxiety have worse quality of life, a fact that is not consistent

with the scientific literature consulted. According to the World Health Organization, anxiety tends to decrease with age,<sup>(9)</sup> and the worst levels of QOL are found in people with RA, not only due to the spreading of the disease and to the presence of comorbidities, but also due to gradual mental and functional degeneration that will have a direct and deep impact on self-care, and will entail serious restrictions to autonomy<sup>(26)</sup>. These results are in accordance with our findings.

The amount of evidence produced in this study justifies the implementation of multidisciplinary health actions that should be personalized and directed to the real needs of patients with RA, in order to promote psychological well-being and improve QOL, as advocated by the World Health Organization. These actions will have a positive impact on the management of chronic disease and will represent major health gains.<sup>(9)</sup>

One of the limitations of this study was the difficulty in reaching patients with RA, because of the current COVID-19 global pandemic. A non-probabilistic sample was used as an alternative. Another limitation has to do with the fact that the study was entirely conducted in one rheumatology consultation located in a specific region of Portugal, which has limited the size and variety of the sample ( $n=139$ ). This study should be replicated in other health care centres across the country and a larger sample should be used in these further studies. We consider that the introduction of other clinical variables, such as time of diagnosis, number of joints affected and treatment, will favour the optimization of the results. Still, we would like to stress the positive aspects identified. For instance, the high adherence rate (80%) has to be highlighted, as does the referral of some consultations that was possible only because certain conditioning factors had been identified, namely those that are crucial to the diagnosis of the patients' care needs and will, once again, generate health gains.

This study demonstrates how important psychological processes are to the quality of life of patients with RA and, therefore, fully complies with its original purpose, since anxiety and depression were found to be predictors of QOL in people with RA. Evidence

shows that most of our respondents have a reasonable QOL, severe levels of anxiety, but do not show any sign of mild depression. The findings also demonstrate that the mental health of patients with RA influences their QOL, which means that the assessment of possible anxious or depressive behaviours in patients suffering from RA is of fundamental importance to help promote their QOL. This assessment will undoubtedly play a massive role in the mitigation and prevention of depressive behaviours and Nurses will play a crucial part in such process since they act as a connecting element between the multidisciplinary team and the patient with RA who will ultimately contribute to the optimization of their skills and abilities.<sup>(27,28)</sup>

## Conclusion

This study allowed us to obtain a deeper knowledge of the impact of anxious and depressive behaviours on the quality of life of patients facing RA. Bearing in mind the associations identified and the evidence collected in the scientific literature available, the study is of great use to stress how important the assessment and the therapeutic work of those nosological entities are and how they are supported by the nursing care delivered. There is no doubt that these procedures will massively contribute to a significant improvement of the health state of the patients under study. The findings of this research will also be important to re-direct nursing interventions in a more appropriate and effective way, particularly those designed within the scope of eNURSING interventions that were planned to be part of the research that we are currently developing: “Development and Feasibility of an eNURSING Intervention aimed at Patients with Rheumatoid Arthritis: Continuity of Care”, that will provide us with the right tools to manage the remote monitoring of patients, and will therefore contribute to their autonomy.

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## Collaborations

Ribeiro AA, Cunha M, Monteiro P, Nunes D, Rodrigues R, Assis C and Henrique MA have contributed to the conception of the study, to all the work that involved data analysis and interpretation, writing, relevant critical review of intellectual content and to the approval of the final version to be published.

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