Mod Rheumatol (2010) 20:491–495
DOI 10.1007/s10165-010-0316-4

ORIGINAL ARTICLE

Body image in patients with rheumatoid arthritis

Renata Trajano Borges Jorge · Christine Brumini · Anamaria Jones · Jamil Natour

Received: 12 February 2010 / Accepted: 28 April 2010 / Published online: 4 June 2010

Abstract We investigated body image in patients with rheumatoid arthritis (RA), correlating it with self-esteem, function, and quality of life. Forty-three RA patients and 39 control individuals from the community between 18 and 70 years of age and paired for gender, age, and body mass index (BMI) were evaluated. Patients were assessed for body image [Body Dysmorphic Disorder Examination (BDDE)], self-esteem (Rosenberg Self-Esteem Scale), function [Health Assessment Questionnaire (HAQ)] and quality of life [Short Form-36 (SF-36)]. The RA group had a mean age of 51.6 years, BMI 26.01, and disease duration 12.2 years. Most participants were categorized in functional class I. The BDDE score of the RA group (51.8) was significantly higher than in the control group (22.6) ($p < 0.001$). Rosenberg Self-Esteem Scale, HAQ and some SF-36 subscales were worse in the RA group than in the control group. These scores had a direct correlation with body image scores ($p < 0.001$). Individuals with RA had a worse body image than individuals without this condition. Body image was directly correlated with self-esteem, function, and quality of life.

Keywords Rheumatoid arthritis · Body image · Quality of life

Introduction

Rheumatoid arthritis (RA) is an autoimmune disease of unknown etiology characterized by systemic manifestations such as morning stiffness, pain, fatigue, and weight loss, as well as joint manifestation such as peripheral and symmetrical polyarthritis, which leads to joint destruction and deformity, especially in the hands and feet [1–4]. Although the pathogenesis and objective signs and symptoms of the disease are well-documented in the literature, little is known regarding the subjective symptoms involved, as psychosocial aspects among patients with chronic disease has received little scientific attention thus far [5]. Chronic diseases, especially diseases accompanied by deformity and disability, such as RA, are generally associated to psychological conditions, such as body-image disorders [5]. The literature has demonstrated that individuals with RA suffer more psychologically, especially those with a longer duration of the disease, when compared with individuals with other physical disorders and healthy individuals [6]. Body image is defined as the representation of the size and shape of the body in the mind and is profoundly influenced by feelings and attitudes related to the body [7]. Individuals learn to assess their bodies through interactions with their environment. Thus, body image is profoundly influenced by the standards imposed by society. Individuals who see themselves as outside the standard body measurements feel pressured and dissatisfied [8]. The main factors that trigger body-image disorders appear to be related to psychological issues, attitudes, social behavior, and physical disorders [9].

The relationship between body image and psychosocial factors in rheumatological disorders seems to have significant clinical implications. A small number of studies have demonstrated that these diseases play an important role in the self-assessment of body image [6, 9–11]. Cornwell et al. [10] report that these complaints are restricted to the physical deformities occasioned by the disease. Other authors, however, suggest that deformity alone is unable to explain the degree of dissatisfaction on the part of patients,

R. T. B. Jorge · C. Brumini · A. Jones · J. Natour (✉)
Division of Rheumatology, Federal University of São Paulo (UNIFESP), UNIFESP Botucatu, 740, São Paulo, SP 04023-900, Brazil
e-mail: jnatour@unifesp.br

especially female patients [9]. Self-esteem is linked to body image and also appears to have clinical significance in the investigation of subjective symptoms in patients with chronic diseases such as RA. Low self-esteem may be the result of an imbalance between what is desired and what is achieved. Moreover, self-esteem has been identified as an essential component of mental health as well as a determinant of health behavior [11]. The relatively few studies on body image involving patients with chronic disease, especially RA, have described contrasting results [5, 6, 9–11]. A number of these studies also exhibit methodological problems. Some are literature reviews, others are questionnaire validation studies, and others are cross-sectional studies with methodological flaws, such as a lack of a control group. The aim of this study was to investigate body image of patients with RA and correlate it with self-esteem, physical function, and quality of life (QOL).

Materials and methods

Participants

Eighty-two individuals were evaluated: 43 RA patients and 39 controls. Individuals in the RA group had a confirmed diagnosis of classic RA and were recruited from the rheumatology outpatient clinic by two physiotherapists. Sixty-one patients were asked to participate, but only 43 agreed or fulfilled the inclusion criteria. The control group comprised individuals accompanying the patients (14%), university employees (30%) and individuals from the community (56%). Seventy-six individuals were selected, but only 39 fulfilled the inclusion criteria.

Inclusion criteria

The RA group included patients between 18 and 70 years of age, of either gender, with an established diagnosis of RA based the criteria of the American College of Rheumatology and belonged to functional classes I, II and III [12]. The control group comprised individuals from the community matched for gender, age and body mass index (BMI).

Exclusion criteria

Individuals with fibromyalgia, neurological disease, psychiatric disorders, or other severe comorbidities were excluded from the study.

Evaluation instruments

Sociodemographic data were collected on identification, age, gender, marital status, years of schooling, employment status, disease duration, functional class, and BMI. Participants were then evaluated using the following instruments:

- The Body Dysmorphic Disorder Examination (BDDE): a body image assessment measure validated for the Portuguese language, with 34 questions that evaluate the excessive importance given to self-assessed appearance, discomfort in public situations, and withdrawal from social activities. The score ranges from 0 to 168, with higher scores denoting a worse perception of body image [13].
- The Rosenberg Self-Esteem Scale: a self-esteem assessment measure validated for the Portuguese language that contains ten questions designed to globally assess an individual's positive or negative attitude regarding himself/herself. The total score is 30 points, with higher scores denoting lower self-esteem [14].
- The Health Assessment Questionnaire (HAQ): a functional capacity assessment measure validated for the Portuguese language containing 20 questions on activities that use the upper and lower limbs. The score ranges from 0 to 3, for which 0 denotes the best condition and 3 denotes the worst [15].
- The Short Form-36 (SF-36): a generic QOL assessment measure validated for the Portuguese language, with 36 questions that address overall health and physical and emotional aspects. The score ranges from 0 to 100, for which 0 denotes the worst condition and 100 denotes the best condition [16].

The study received approval from the Ethics Committee of the university, and all participants gave written informed consent.

Statistical analysis

Continuous variables were compared using Student's *t* test when exhibiting normal distribution and the Mann–Whitney *U* test when not exhibiting normal distribution. Normality of the variables was determined using the Kolmogorov–Smirnov test. The categorical variables were compared using the Chi-square test. Comparisons between BDDE, HAQ, SF-36, and Rosenberg questionnaires were performed using Spearman's correlation coefficient.

Results

Clinical and demographic characteristics

In the overall sample, 85.4% of participants were women, mean BMI was 25.65, and 65.9% were engaged in an occupation. In the RA group, mean disease duration was 12.2 years, and 83.7% were in functional class I. Table 1

Table 1 Sociodemographic data for each group

	RA group ($n = 43$)	Control group ($n = 39$)	P value
Age (years)	51.6	52.3	0.747
Gender (female)	83.7%	87.2%	0.658
BMI	26.01	25.29	0.344
Years of schooling	5.8	11.9	0.001*
Marital status (married)	32.6%	66.7%	0.019*
Employment status	34.1%	28.2%	0.280
Disease duration (years)	12.2	–	–
Functional class (I/II/III)	83.7/9.3/7%	–	–

RA rheumatoid arthritis, *BMI* body mass index

* Statistically significant difference

displays the clinical and demographic data for the overall sample.

Table 2 display scores on the assessment measures for body image, self-esteem, function, and quality of life subscale of the RA group and control groups. All assessment measures revealed statistically significant differences between RA and control groups.

Spearman correlation coefficients between the BDDE and the variables age, years of schooling, BMI, disease duration, self-esteem, functional capacity, and quality of life are displayed in Tables 3, 4, and 5.

Discussion

The aim of this study was to investigate the body image of patients with RA and correlate it with self-esteem, function, and quality of life. Few studies addressing this issue are found in the literature. Moreover, those few studies have conflicting results and methodological flaws [5, 6, 9–11, 17–22]. The majority of participants in our sample were women, and scores in the RA group denoted a significantly worse body image than that found in the control group. As marital status and years of schooling did not behave in a homogeneous manner between RA and control groups, further statistical tests were conducted to determine whether these differences were important to the analysis of body image between groups. These tests confirmed the worse body image in the RA group when compared with the control group. This finding partially corroborates that described by Cornwell et al. [10], who found no significant differences in body image between women with RA and healthy women, except for specific parts of the body, such as the hands, feet, and muscles. Such characteristics are clearly associated to physical capacity [17]. Cornwell et al. [10] investigated women with systemic lupus erythematosus (SLE) and RA using adequate assessment measures and a control group for comparison purposes, but the groups were heterogeneous in terms of sociodemographic characteristics. Contesting this study, Gutweniger et al. [5] demonstrated that women with RA and accentuated morning stiffness suffer from a greater concern with the body. A similar result is described by MacSween et al. [11], who found that the overall physical self-perception of

Table 2 Scores on the assessment measures for each group

	RA group ($n = 43$)	Control group ($n = 39$)	p
BDDE	51.8	22.6	<0.001*
Rosenberg	9.4	5.2	<0.001*
HAQ	1.1	0.02	<0.001*
SF-36			
Functional capacity	49.5	95.8	<0.001*
Physical limitation	31.2	92.8	<0.001*
Pain	50.1	84.9	<0.001*
Overall health status	54.0	88.5	<0.001*
Vitality	49.6	82.2	<0.001*
Social aspects	77.0	91.3	0.024*
Emotional aspects	49.5	94.8	<0.001*
Mental health	61.4	85.6	<0.001*

RA rheumatoid arthritis, *BDDE* Body Dysmorphic Disorder Examination, *Rosenberg* Rosenberg Self-Esteem Scale, *HAQ* Health Assessment Questionnaire, *SF-36* Quality of Life Short-Form 36

* Statistically significant difference

Table 3 Spearman correlation coefficients between Body Dysmorphic Disorder Examination (BDDE) and other variables

	RA group ($n = 43$)	Control group ($n = 39$)
Age	−0.235	0.073
Years of schooling	0.048	0.073
BMI	0.099	0.351*
Disease duration	0.013	–
Rosenberg	0.396*	0.526*
HAQ	0.480*	−0.095
SF-36		
Functional capacity	−0.506*	−0.120
Physical limitation	−0.349*	−0.171
Pain	−0.201	−0.020
Overall health status	−0.402*	−0.337*
Vitality	−0.380*	−0.259
Social aspects	−0.337*	−0.249
Emotional aspects	−0.289	−0.317*
Mental health	−0.116	−0.264

RA rheumatoid arthritis, *BMI* body mass index, *Rosenberg* Rosenberg Self-Esteem Scale, *HAQ* Health Assessment Questionnaire, *SF-36* Quality of Life Short-Form 36

* Statistically significant difference

Table 4 Mann–Whitney *U* test for years of schooling and chi-square test for marital status between rheumatoid arthritis (RA) group and 11 control individuals to verify statistically significant difference found in Table 1

	RA group ($n = 43$)	Control group ($n = 11$)	*P* value
Years of schooling	5.83	6.45	0.404
Marital status (married)	32.6%	45.5%	0.315

Table 5 Difference in Body Dysmorphic Disorder Examination (BDDE) score between the groups controlled for years of schooling and marital status

	BDDE	*P* value
Control group	17.45	<0.001*
Rheumatoid arthritis group	51.76	<0.001*

* Statistically significant difference

women with RA was poor when compared with young healthy women or obese women paired for age. In the same study by MacSween et al. [11], women with RA achieved better scores than obese women with regard to the body domain. Likewise, in a study involving women who desired cosmetic surgery, Jorge et al. [13] found a worse body image score in the experimental group. These findings suggest that women with RA have an intermediate perception of body image that falls between that of healthy women from the community and those with complaints related to esthetic issues. This reinforces the notion that individuals with RA exhibit body image complaints related mainly to physical capacity and dexterity [10].

Investigations regarding body image found in RA have not sought to correlate the degree of dissatisfaction related to body image with functional class or deformity [5, 6, 9–11, 17–22]. The studies do not address exactly what disabilities or deformities affect body image in RA patients, but it is likely that many of these body image complaints are related to deformity of the hands, feet, knees, and muscles, as well as gait and postural problems. The majority of patients in our study (83.7%) belonged to functional class I and, as such, did not exhibit difficulties in performing daily activities, personal hygiene, or work-related activities. It therefore cannot be said that the perception of body image among these patients is directly related to functional class. However, there was a correlation between HAQ and BDDE scores, demonstrating that a worse degree of functional capacity denoted a worse body image. Functional capacity, physical limitation, and pain subscales on the SF-36 were also significantly different between RA and control groups and were positively correlated with the HAQ score. Only the social aspects subscale achieved scores considered satisfactory in RA patients and similar to those found in the control group.

Monaghan et al. [9] reported that patients with RA or SLE, even those with a recent diagnosis and no concrete evidence of deformity, stated that their appearance had changed after the disease, and 30–53% of these patients reported feeling unattractive. The authors employed function questionnaires and a generic QOL questionnaire. The results were in agreement with those of this study, which revealed that patients with RA had a worse body image than individuals in the control group, even though most of the patients were in functional class I.

Our study found no direct relationship between disease duration and body image or self-esteem. This is in agreement with findings described by Cornwell et al. [10], who also found no significant correlation between body image or self-esteem and age or time elapsed since diagnosis. However, the literature states that individuals with RA have a worse body image, especially those with a longer disease duration, when compared with individuals with other disorders and healthy individuals [6]. The RA group in our study had lower self-esteem than those in the control group. Few studies have addressed the self-esteem of patients with RA. Skevington et al. [18] demonstrated that such patients (with an early diagnosis) had lower self-esteem than the control group paired for gender and age. However, Cornwell et al. found no significant differences between patients with RA, those with SLE, and healthy individuals with regard to self-esteem. The authors attribute this finding to the considerable variability in scores between individuals studied due to the emotional instability of those with chronic disease and disability [10]. Data from our study demonstrate that body image of individuals with RA was directly proportional to self-image, demonstrating yet again that body image and self-esteem are closely linked and determinants of mental health [18].

Certain aspects inherent to QOL were clearly compromised in these individuals. The mental health and emotional aspects subscales on the SF-36 revealed worse conditions in the RA group in comparison with the control group. Moreover, correlations were found between the BDDE and functional capacity, physical limitation, overall health status, vitality, and social aspects subscales on the SF-36 questionnaire, indicating that patients with a worse body image generally achieve worse scores on these subscales as well. These findings are in agreement with those described by Monaghan et al. [9] who stated that concepts linked to appearance and disability are predictive of depression in individuals with SLE and RA. The findings are also in agreement with those described by Cornwell et al. [10], who found that individuals with RA exhibited more emotional problems than those with SLE, especially

with regard to the fear of disease progression and dependence upon others for personal hygiene and mobility.

Regarding the instruments used to assess body image among patients with RA in the studies surveyed, only four studies employed specific questionnaires [5, 6, 10, 11]. One was a validation study of a self-perception questionnaire regarding RA. Other studies carried out semistructured interviews, used questions from correlated measures, and/or drafted questions that the authors judged pertinent for addressing the issue or were simply review articles [9, 19–22]. The nonexistence of a body image assessment measure especially designed for patients with RA led to our choosing the BDDE as the primary assessment measure, which is designed for individuals with some degree of dissatisfaction with specific physical characteristics [23]. The strong point of our study was the attempt to quantify qualitative impressions in the literature in reference to subjective symptoms among patients with RA. However, some limitations should be considered. There was no evaluation of the concrete presence of physical deformity and no assessment of disease activity and stage, which may have clarified some of the results encountered. Furthermore, the fact that the majority of the sample comprised women in functional class I limits the generalization of the findings. Despite these limitations, the results suggest that addressing aspects linked to appearance should become a frequent practice in assessing and treating patients with RA, even in the absence of evident deformity, for subjective complaints may interfere in treatment results.

The development and/or standardization of a body image assessment measure for patients with chronic and/or incapacitating diseases could minimize the conflicting results from studies that address this topic. Moreover, the body image issue should be incorporated into the evaluation of these patients.

Conclusion

Individuals with RA had a worse body image than individuals without this condition. Body image had a direct correlation with self-esteem, function, and QOL.

Conflict of interest statement None.

References

1. Harris ED. Clinical features of rheumatoid arthritis. In: Kelley WK, et al., editors. Textbook of rheumatology. 4th ed. Philadelphia: W.B. Saunders; 1993. p. 833–73.
2. Laurindo IMM, Pinheiro GRC, Ximenes AC, Bertolo MB, Xavier RM, Giorgi RDN. Consenso brasileiro para o diagnóstico e tratamento da artrite reumatóide. Rev Bras Reumatol. 2002;42(6):355–61.
3. Wilder RL. Rheumatoid arthritis: epidemiology, pathology and pathogenesis. In primer on the rheumatic diseases. 10th ed. Atlanta: Arthritis Foundation; 1993. p. 86–9.
4. Arnett FC, Edworthy SM, Bloch DA, McShane DJ, Fries JF, Cooper NS, et al. The American Rheumatism Association 1987 revised criteria for the classification of rheumatoid arthritis. Arthritis Rheum. 1988;31:315–24.
5. Gutweniger S, Kopp M, Mur E, Gunther V. Body image of woman with rheumatoid arthritis. Clin Exp Rheumatol. 1999;17:413–7.
6. Ben-Tovim DI, Walker MK. Body image, disfigurement and disability. J Psychol Res. 1995;39(3):283–91.
7. Slade P. What is body image? Behav Res Ther. 1994;32:497.
8. Russo R. Imagem corporal: construção através da cultura do belo. Movimento Percepção. 2005;5(6):81–90.
9. Monaghan SM, Sharpe L, Denton F, Levy J, Schrieber L, Sensky T. Relationship between appearance and psychological distress in rheumatic diseases. Arthritis Rheum. 2007;57(2):303–9.
10. Cornwell CJ, Schmitt MH. Perceived health status, self-esteem and body image in women with rheumatoid arthritis or systematic lupus erythematosus. Res Nurs Health. 1990;13:99–107.
11. MacSween A, Brydson G, Fox KR. Physical perceptions of women with rheumatoid arthritis. Arthritis Rheum. 2004;51(6):958–63.
12. Hochberg Mc, Roland W, Dwosh I, et al. The American College of Rheumatology 1991 revised criteria for the classification of global functional status in rheumatoid arthritis. Arthritis Rheum. 1992;35(5):498–502.
13. Jorge RT, Sabino Neto M, Natour J, Veiga DF, Jones A, Ferreira LM. Brazilian version of the body dysmorphic disorder examination. São Paulo Med J. 2008;126(2):87–95.
14. Dini GM, Quaresma MR, Ferreira LM. Adaptação cultural e validação da versão brasileira da escala de auto-estima de Rosenberg. Rev Soc Bras Cir Plast. 2004;19(1):41–52.
15. Ferraz MB, Oliveira ML, Araújo PP, Atra E, Tugwell P. Cross-cultural reliability of the physical ability dimension of the health assessment questionnaire. J Rheumatol. 1990;17:1022–4.
16. Ciconelli RM, Ferraz MB, Santos W, Meinao I, Quaresma MR. Tradução para a língua portuguesa e validação do questionário de avaliação de qualidade de vida SF-36. Rev Bras Reumatol. 1999;39(3):143–50.
17. Vamos M, White GL, Caughey DE. Body image in rheumatoid arthritis: the relevance of hand appearance to desire for surgery. Br J Med Psychol. 1990;63:267–77.
18. Skevington SM, Blackwell F, Britton NF. Self-esteem and perception of attractiveness: an investigation of early rheumatoid arthritis. Br J Med Psychol. 1987;60(1):45–52.
19. Lowman EW, Miller S, Lee PR, Stein H, King R, Heald L. Psychosocial factors in rehabilitation of the chronic rheumatoid arthritic. Ann Rheum Dis. 1954;13(4):312–6.
20. Sandra KP, Patricia ES, Vicki A. Corporeality: women's experiences of a body with rheumatoid arthritis. Clin Nurs Res. 2004;13:137.
21. Anita EW, Christopher JN, Michael IR. Rheumatoid arthritis patients' experiences of wearing therapeutic footwear—a qualitative investigation. BMC Musculoskelet Disorder. 2007;8:104.
22. Oberai B, Kirwan JR. Psychological factors in patients with chronic rheumatoid arthritis. Ann Rheum Dis. 1988;47:969–71.
23. Rosen JC, Reiter J. Development of the body dysmorphic disorder examination. Behav Res Ther. 1996;34(9):755–66.