

Changes in occupational roles in women with chronic pain and Rheumatoid Arthritis compared to healthy women¹

Leticia Meda Vendrusculo-Fangel^a , Renan Fangel^{a,b} , Tiago dos Santos Leles^a ,
Lilian de Melo Moura^a , Rita de Cássia Marqueti^a 

^aUniversidade de Brasília – UnB, Brasília, DF, Brasil.

^bCentro Universitário EuroAmericano – UNIEURO, Brasília, DF, Brasil.

Abstract: The objective of this study was to understand the occupational roles of women with chronic pain caused by Rheumatoid Arthritis (RA) and to compare these performance standards with those of healthy subjects. It is a cross-sectional, exploratory and comparative study. Participants were divided into 2 groups. For the RA group, two validated questionnaires were applied: Visual Analog Scale and the Occupational Roles List, clinical and demographic data. In the control group, the personal information sheet and the Occupational Role List were applied. The control group was matched in age and sociodemographic level. A total of 164 women participated in the study, of which 82 were women with chronic pain and rheumatoid arthritis, with a mean age of 55.9 ± 11.2 years, and 82 healthy and matched women. In the RA group (GAR), 48% of the participants in the work activities were lost, but the roles of caregiver (68%), household chores (89%), friend (74%), family member (93%), and religious (60%), remained in the process of becoming ill. In the control group (CG), the maintenance of most occupational roles is observed. In the comparison between both groups, a statistically significant difference was found in student, worker, volunteer, friend and passer/amateur roles. The occupational roles of women with chronic pain caused by RA are modified by illness and pain. When compared to healthy women, it is observed that the student, worker, volunteer and hobby/amateur roles are no longer performed due to illness. This influence is not dependent on pain intensity since no difference was found between participants with RA and levels of severity other than pain.

Keywords: *Rheumatoid Arthritis, Chronic Pain, Role Playing, Occupational Therapy.*

Modificações dos papéis ocupacionais de mulheres com dor crônica e Artrite Reumatoide, comparada a mulheres saudáveis

Resumo: O objetivo deste estudo foi compreender os papéis ocupacionais de mulheres com dor crônica causada pela Artrite Reumatoide (AR) e comparar estes padrões de desempenho com os de sujeitos saudáveis. Trata-se de um estudo transversal, exploratório e comparativo. Os participantes foram divididos em 2 grupos. Para o grupo AR, foram aplicados dois instrumentos validados: Escala Visual Analógica e as Lista de Papéis Ocupacionais, dados pessoais, clínicos e sociodemográficos. No grupo controle, foram aplicados a ficha de informações pessoais e a Lista de Papéis Ocupacionais. O grupo controle era pareado em idade e nível sociodemográfico. Participaram deste estudo 164 mulheres, sendo 82 mulheres com dor crônica e artrite reumatoide, com média de idade de $55,9 \pm 11,2$ anos, e 82 mulheres pareadas e sem dor crônica e sem AR. No grupo AR, 48% das participantes perderam as atividades laborais, porém os papéis de cuidador (68%), serviços domésticos (89%), amigo (74%), membro da família (93%) e religioso (60%), se mantiveram mesmo com o processo de adoecimento. Já no Grupo controle (GC), observa-se a manutenção da maioria dos papéis ocupacionais. Na comparação entre os grupos GAR e GC, encontrou-se

Corresponding author: Leticia Meda Vendrusculo-Fangel, Faculdade de Ceilândia, Universidade de Brasília, Campus Universitário, Centro Metropolitano, Ceilândia Sul, CEP 72220-275, Brasília, DF, Brasil, e-mail: leticiamvfangel@unb.br

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diferença estatisticamente significativa nos papéis de estudante, trabalhador, voluntário, amigo e passatempo/amador. Os papéis ocupacionais de mulheres com dor crônica causada pela AR são modificados pelo adoecimento e pela dor. Quando comparadas com mulheres saudáveis, observa-se que os papéis de estudante, trabalhador, voluntário e passatempo/amador, deixam de ser realizados devido ao adoecimento. Esta influência não é dependente da intensidade da dor, já que não foi encontrada diferença entre as participantes com AR e níveis de severidade diferentes da dor.

Palavras-chave: *Artrite Reumatoide, Dor Crônica, Desempenho de Papéis, Terapia Ocupacional.*

1 Introduction

Rheumatoid arthritis (RA) is an inflammatory, autoimmune systemic disease with a still unknown etiology. Its main characteristic is the symmetric polyarticular involvement leading to joints deformity and destruction due to bone and cartilage erosion. Due to articular alteration, the patient with RA has important levels of pain (LAURINDO et al., 2002). Also, RA has systemic alterations that exacerbate the process of fatigue and impact in daily life (BODE; TAAL, 2015).

Due to the common relation of manifestations of RA and the intense inflammatory process in the pathophysiology of the disease, there is a high prevalence of chronic pain in patients with RA. In the literature, about 80% of patients with RA will have chronic pain after 5 years of diagnosis, worsening their functionality, ability to work, and significant psychic suffering associated with painful experience (ANDERSSON; SVENSSON; BERGMAN, 2013; SOKKA et al., 2010; RICE et al., 2016).

Pain appears as an unpleasant individual experience, multidimensional, highly complex and subjective, being variable for each individual, according to their personality, psychological conditions, previous experiences, organic conditions, and the sociocultural context. It also involves the physical, sensory-perceptive, psychological, emotional, occupational, ethical, learning, behavioral, religious, and moral aspects (DE CARLO; QUEIROZ; SANTOS, 2007).

Due to the great period of living with pain, patients report the aggravation of anxiety and depression symptoms, and functional capacity, which causes impairment in their daily life, a fact that changes the routine, social and daily life activities, and directly impacts the individual's quality of life (SALAFFI et al., 2009; ROBINSON; KENNEDY; HARMON, 2011). As occupational roles are associated with the performance of their daily activities and the perception of these purposes by the individual, understanding the changes in these roles are essential for the development of care to the patient with RA (ROBINSON; KENNEDY; HARMON, 2011;

ANDERSSON; SVENSSON; BERGMAN, 2013; PARREIRA et al., 2013). Therefore, the objective of this study is to understand the occupational roles of women with chronic pain caused by RA by comparing the performance patterns of occupational roles with pain levels of women with rheumatoid arthritis and chronic pain and then by comparing these patterns with those of healthy individuals.

2 Method

This is a cross-sectional, exploratory and comparative study with a quantitative data analysis, comparing the changes experienced in different pain levels in women with rheumatoid arthritis and comparing the changes in the occupational roles with women without pain and without rheumatoid arthritis. This study was approved by the Research Ethics Committee under the CAAE number: 31013314.3.0000.0030, under opinion number 1,020,803 of April 13, 2015. All the ethical precepts established in resolution 466/2012 (BRASIL, 2012) were respected. The participation was of free will, the data provided was kept confidential and the participants could refuse to attend it at any time. After this information, the participants signed the ICF in two copies, in both groups.

The participants were selected through a convenience sample. All women who met the inclusion and exclusion criteria and were in the rheumatology clinic of a university tertiary hospital were invited to participate. The following inclusion criteria were used to define the participants: being over 18 years old, performing clinical follow-up for RA, with more than three episodes of pain in the last six months, able to complete the ICF. The exclusion criteria were women who had acute non-RA related pain, with a diagnosis of RA but without chronic pain, a diagnosis of severe psychiatric disorder, a chronic infectious disease, an with acute or chronic disease with a high probability of a brief death.

The selection of participants in the control group occurred through pairing, between gender, age, and socioeconomic level. The healthy participants

could not have chronic or acute pain defined by the Visual Analogue Scale, diagnosis of severe psychiatric disorder verified by screening with the Anxiety and Depression Scale (HADS) and by the participant's report in the general record, chronic infectious disease, acute or chronic disease with a high probability of a brief death.

Women who met the inclusion and exclusion criteria and who agreed to participate were sent to a reserved room. For the AR group, the evaluations were performed before the medical appointment. For the control group, the evaluations were performed in a place and date previously combined. These healthy participants were contacted at different locations: patient caregivers in public health services and community centers.

Two validated instruments and a general record were used for both groups to collect personal information and clinical data regarding the treatments performed, diagnosis time, number of pain episodes in the last three months, physical exercises, leisure activities, religion, and work. The data collection was held from May 2015 to December 2017.

The Visual Analog Scale (VAS) for Pain and the Protocol of the Occupational Identification List (POIL) were the validated instruments used.

VAS is used to quantitatively measure the intensity of pain perceived by the participant at the time of his evaluation. It refers to a line of 10 cm, numbered 0 to 10. At the left end, which is the numeral 0, "no pain" is written and at the other end, there is the number 10 and the phrase "worse than possible" is written. In its application, the participant is asked to choose and dial the reference number that represents the level of pain perceived at the moment.

After VAS application, POIL was applied, having an inventory divided into two parts. The protocol shows ten occupational roles, and the category "other" in case the participant plays a different role than those already considered in POIL. In the first part, the participant indicates the performance of the occupational roles of his life in the past, present and future. In this way, it is classified into eight types of patterns between losses, gains, changes, absence and/or continuity of these roles. In the second part, POIL identifies the importance assigned to each of the roles (CORDEIRO et al., 2007).

For the analysis of the data, frequency analysis was used for the personal and clinical characterization, t-test for comparison between the groups, *one-way* ANOVA test, with post-hoc of Tukey for comparison of variables by level of pain and descriptive analysis

for the other variables. Statistical data from the RAG and CG presented a normality pattern, assessed by the Kolmogorov-Smirnov test.

3 Results

One hundred sixty-four women participated in this study, in which 82 women had RA and chronic pain, with a mean age of 55.9 ± 11.2 years, and 82 paired women with no acute or chronic pain and no diagnosis of osteoarticular disease, different from RA. The mean age of the control group (CG) was 53.7 ± 12.8 years old since they were paired with RAG and socioeconomic data. Table 1 shows the personal, sociodemographic and clinical data of the participants of both groups.

The participants of both groups had low education level, were married and Catholic. The RAG performs less physical and leisure activity than the CG, with a statistically significant difference. Also, a statistical difference between the groups in their work was found. In RAG, 74% of women did not work in paid employment, 38% of them were retired, 38% reported not having worked because of illness or were removed by the INSS, and 24% reported other reasons or they never worked. In the CG, 54% of the women did not work, of which 75% were retired and 25% of them never worked.

The RAG participants showed a chronic disease with an average of 17.45 ± 9.08 years of diagnosis. All of them underwent medical follow-up, using medications regularly. 61% used synthetic disease course modifying drugs (MDCDs), 19% used biological MDCDs and 20% used other drugs, mainly non-steroidal anti-inflammatory drugs and analgesics. As the evaluation was performed before the medical consultations, the drugs described were those already in use since the previous consultation, for about 6 months.

Regarding the pain, RAG women presented on average 55.9 ± 38.9 episodes of pain in the three months before their evaluation date. The mean intensity of pain among the participants was 4.96 ± 2.6 when evaluated by VAS.

By identifying the referred pain intensities through the VAS, it was possible to classify RAG participants in three levels of pain: Strong (8-10); Moderate (4-7); Weak (1-3). After this classification, 22 participants reported weak pain in the RA group, with an average of $2 \pm 0.79.45$ women; forty-seven reported "Moderate pain" with an average of

Table 1. Personal and Sociodemographic Characterization of the participants – RAG and CG.

| | | RAG | CG |
|---------------------------|------------------------------|------------|----------|
| | | %(N) | %(N) |
| Education | Illiterate | 9% (7) | 5%(4) |
| | Incomplete Elementary School | 45% (37) | 32% (26) |
| | Complete Elementary School | 14% (11) | 7% (6) |
| | Incomplete High School | 12% (10) | 10% (8) |
| | Complete High School | 16% (14) | 18% (15) |
| | Complete Higher Education | 1% (1) | 12% (10) |
| | Other | 3% (2) | 16% (13) |
| Marital Status | Married | 39% (32) | 39% (32) |
| | Single | 27% (22) | 39% (32) |
| | Widow | 18% (15) | 14% (12) |
| | Divorced | 10% (8) | 5% (4) |
| | Stable union | 6% (5) | 3% (2) |
| Paid job | Yes | 26% (21) | 46% (38) |
| | No | 74% (61)*§ | 54% (44) |
| Leisure Activities | Yes | 51% (42)*§ | 70% (42) |
| | No | 49% (40) | 30% (40) |
| Physical Activity | Yes | 44% (36)*§ | 63% (52) |
| | No | 56% (46) | 37% (30) |
| Religion | Catholic | 55% (45) | 57% (47) |
| | Evangelic | 30% (25) | 26% (21) |
| | Spiritual | 7% (6) | 11% (9) |
| | Others | 7% (6) | 6% (5) |

RAG = Rheumatoid arthritis Group; CG = Control Group; N = Number of participants; % = percentage of participants; *statistical difference between RAG and CG; §T-Test $p \leq 0.05$.

5 ± 0.99 and 15 women reported “severe pain” with an average of 8.5 ± 0.90 pain intensity.

Table 2 shows the frequency data of both groups for the standard performed in each of the occupational roles. In RAG, 48% of the participants had losses in the work activities, but the roles of caregiver, household chores, friend, family member and religious remained even in the process of becoming ill. In the CG, most of the occupational roles were maintained.

In the comparison between the patient and healthy participants, there was a statistically significant difference in the student, worker and friend roles, with greater loss in that present; in the volunteer role, there was a greater achievement in the CG; and in the hobby/amateur role, the GC maintained this role as continuous. In this way, there are changes in the occupational roles of women with chronic pain caused by rheumatoid arthritis (Table 2).

Table 3 presents the data concerning the importance levels for each role classified by the participants of both groups. With the exception of hobby/amateur occupational and participation in organizations roles, the occupational roles were

identified as very important in both groups. In the comparison between the groups, there was no statistical difference between them.

After identifying that the chronic pain caused by rheumatoid arthritis changes the occupational roles, RAG was checked for the interference of the different levels of pain in the performance of the occupational roles (Table 4). Thus, the classification presented previously by the pain levels was used: Mild, moderate or strong pain measured by VAS.

For the verification of statistical difference between groups, the one-way ANOVA test was used. In the comparison of performance standards between the three levels of pain, no statistically significant differences were found. In this way, the level of pain does not interfere in the performance patterns of the occupational roles.

Thus, women with chronic pain caused by RA had changes in the roles of student, worker, friend, hobby/amateur and volunteer when compared to women without chronic pain and without RA. However, no difference was found between the groups when the impact of pain intensity in the modifications of the performance standards. All participants reported a

Table 2. Performance standards in each occupational role – RAG, CG.

| | | RAG | CG | | | RAG | CG |
|------------------------|-----------------------------|----------|------------------------|----------------------|-----------------------------|----------|----------|
| | | %(N) | %(N) | | | %(N) | %(N) |
| Student*§ | Performed only in the past | 60% (48) | 26% (22) | Friend*§ | Performed only in the past | 3% (2) | 0% (0) |
| | Loss only in the present | 18% (15) | 21% (17) | | Loss only in the present | 15% (13) | 0% (0) |
| | Gain only in the present | 0% (0) | 0% (0) | | Gain only in the present | 3% (2) | 1% (1) |
| | Performed from the present | 0% (0) | 1% (1) | | Performed from the present | 0% (0) | 0% (0) |
| | Performed until the present | 6% (5) | 4% (3) | | Performed until the present | 1% (1) | 5% (4) |
| | New role in the future | 1% (1) | 0% (0) | | New role in the future | 0% (0) | 1% (1) |
| | Continuous | 13% (11) | 48% (39) | | Continuous | 74% (60) | 88% (72) |
| Worker*§ | Absent | 3% (2) | 0% (0) | Family Member | Absent | 5% (4) | 4% (3) |
| | Performed only in the past | 18% (15) | 24% (20) | | Performed only in the past | 3% (2) | 0% (0) |
| | Loss on gift only | 48% (39) | 21% (17) | | Loss only in the present | 5% (4) | 1% (1) |
| | Gain only in the present | 0% (0) | 1% (1) | | Gain only in the present | 0% (0) | 4% (3) |
| | Performed from the present | 1% (1) | 3% (2) | | Performed from the present | 0% (0) | 0% (0) |
| | Performed until the present | 3% (2) | 3% (2) | | Performed until the present | 0% (0) | 0% (0) |
| | New role in the future | 0% (0) | 1% (1) | | New role in the future | 0% (0) | 0% (0) |
| Volunteer*§ | Continuous | 29% (23) | 47% (38) | Continuous | 93% (76) | 95% (78) | |
| | Absent | 3% (2) | 0% (0) | Absent | 0% (0) | 0% (0) | |
| | Performed only in the past | 8% (6) | 29% (24) | Religious | Performed only in the past | 11% (9) | 17% (14) |
| | Loss only in the present | 14% (12) | 4% (3) | | Loss only in the present | 5% (4) | 9% (7) |
| | Gain only in the present | 0% (0) | 0% (0) | | Gain only in the present | 0% (0) | 1% (1) |
| | Performed from the present | 4% (3) | 7% (6) | | Performed from the present | 1% (1) | 9% (7) |
| | Performed until the present | 0% (0) | 0% (0) | | Performed until the present | 10% (8) | 0% (0) |
| New role in the future | 38% (30) | 29% (23) | New role in the future | | 9% (7) | 4% (3) | |
| Continuous | 14% (12) | 18% (15) | Continuous | | 59% (48) | 55% (45) | |
| Absent | 24% (20) | 13% (11) | Absent | 5% (4) | 4% (3) | | |

RAG = Rheumatoid arthritis group; CG = Control Group; N = Number of participants; % = percentage of answers; *occupational roles with statistical difference between RAG and CG; §T-Test $p \leq 0.05$.

Table 2. Continued...

| | | RAG | CG | | | RAG | CG | | |
|-----------------------------|-----------------------------|----------------------------|----------|-----------------------------|-----------------------------|---------------------------------------|----------------------------|--------|----------|
| | | %(N) | %(N) | | | %(N) | %(N) | | |
| Caregiver | Performed only in the past | 9% (7) | 13% (11) | Hobby/ Amateur*§ | Performed only in the past | 3% (2) | 16% (13) | | |
| | Loss only in the present | 3% (2) | 7% (6) | | Loss only in the present | 26% (21) | 3% (1) | | |
| | Gain only in the present | 0% (0) | 0% (0) | | Gain only in the present | 0% (0) | 0% (0) | | |
| | Performed from the present | 1% (1) | 4% (3) | | Performed from the present | 9% (7) | 4% (3) | | |
| | Performed until the present | 9% (7) | 9% (7) | | Performed until the present | 4% (3) | 1% (1) | | |
| | New role in the future | 10% (8) | 3% (2) | | New role in the future | 9% (7) | 7% (5) | | |
| | Continuous | 68% (56) | 61% (50) | | Continuous | 30% (25) | 63% (52) | | |
| | Absent | 1% (1) | 4% (3) | | Absent | 20% (16) | 7% (5) | | |
| | Household chores | Performed only in the past | 3% (2) | | 1% (3) | Participation in Organizations | Performed only in the past | 4% (3) | 14% (11) |
| | | Loss only in the present | 1% (1) | | 0% (0) | | Loss only in the present | 5% (4) | 11% (9) |
| Gain only in the present | | 0% (0) | 0% (0) | Gain only in the present | 0% (0) | | 0% (0) | | |
| Performed from the present | | 0% (0) | 5% (4) | Performed from the present | 0% (0) | | 4% (3) | | |
| Performed until the present | | 8% (7) | 8% (7) | Performed until the present | 3% (2) | | 1% (1) | | |
| New role in the future | | 0% (0) | 1% (1) | New role in the future | 25% (21) | | 21% (17) | | |
| Continuous | | 89% (72) | 84% (69) | Continuous | 3% (2) | | 13% (11) | | |
| Absent | | 0% (0) | 0% (0) | Absent | 61% (50) | | 36% (30) | | |

RAG = Rheumatoid arthritis group; CG = Control Group; N = Number of participants; % = percentage of answers; *occupational roles with statistical difference between RAG and CG; §T-Test $p \leq 0.05$.

high level of importance of these roles in their lives, regardless of the group.

4 Discussion

This study aimed to identify if the occupational roles of women with chronic pain caused by rheumatoid arthritis change over time and to compare the population of women without pain and without RA, and also if the level of pain reported by women with chronic pain interfere with occupational roles.

The participants in this study are mostly retired, with low level of education, married and Catholic. In the study by Ryan and McGuire (2016) similar data were found, except for religion, not evaluated by these authors. They sought to understand the

relationship between pain severity and levels of anxiety and depression. In the sample, 94% of the participants were women, with a mean age of 45 years, with a diagnosis of RA for more than 10 years and financially dependent on other people. Regarding their pain, these authors found that most participants presented moderate pain and this pain interfered with the functionality in 70% of the participants. These data are similar to those found in this study.

In Brazil, retirement is conditioned by age and time of contribution at the National Institute of Social Security (INSS). In this way, women from 48 years old with more than 25 years of contribution could retire - Law 8,213/91 (BRASIL, 1991). The participants in this study were an average of 55 years old in the RAG and 53 years old in the CG. Therefore, they had a retirement age. However, with the change of

Table 3. Level of Importance of Occupational Roles – RAG, CG.

| | | RAG | CG | | | RAG | C |
|-------------------------|---------------------|----------|----------|---------------------------------------|---------------------|----------|----------|
| | | %(N) | %(N) | | | %(N) | %(N) |
| Student | No Importance | 3% (2) | 3% (2) | Friend | No Importance | 0% (0) | 0% (0) |
| | Some Importance | 4% (3) | 3% (2) | | Some Importance | 30% (25) | 17% (14) |
| | A lot of importance | 93% (77) | 94% (76) | | A lot of importance | 70% (57) | 83% (68) |
| Worker | No Importance | 1% (1) | 0% (0) | Family Member | No Importance | 0% (0) | 0% (0) |
| | Some Importance | 4% (3) | 5% (4) | | Some Importance | 5% (4) | 5% (4) |
| | A lot of importance | 95% (76) | 95% (76) | | A lot of importance | 95% (76) | 95% (76) |
| Volunteer | No Importance | 5% (4) | 4% (3) | Religious | No Importance | 1% (1) | 0% (0) |
| | Some Importance | 18% (16) | 12% (10) | | Some Importance | 11% (9) | 14% (11) |
| | A lot of importance | 78% (62) | 84% (69) | | A lot of importance | 88% (72) | 86% (71) |
| Caregiver | No Importance | 0% (0) | 3% (2) | Hobby/Amateur | No Importance | 5% (4) | 5% (4) |
| | Some Importance | 15% (12) | 15% (12) | | Some Importance | 38% (31) | 17% (14) |
| | A lot of importance | 85% (70) | 82% (68) | | A lot of importance | 57% (47) | 78% (64) |
| Household chores | No Importance | 0% (0) | 4% (3) | Participation in Organizations | No Importance | 15% (12) | 18% (16) |
| | Some Importance | 24% (20) | 19% (16) | | Some Importance | 40% (33) | 35% (29) |
| | A lot of importance | 76% (62) | 77% (63) | | A lot of importance | 45% (37) | 45% (37) |

RAG = Rheumatoid arthritis group; CG = Control Group; N = Number of participants; % = percentage of answers.

the aging process and the social condition, many Brazilians maintain paid work even after retirement (FONTOURA; DOLL; OLIVEIRA, 2015). In this way, the CG maintained the paid work activity, being able to maintain the financial independence, which differs from the RAG that by leaving work or retiring, they become more financially dependent on other people.

The occupational roles are related to the construction of the social and personal identity of each individual (CORDEIRO et al., 2007). Thus, it has direct relation with the social conditions and contexts of the individual. Women in both groups are at a low educational and sociodemographic level, interfering with the perception of future activities. One example is the hobby/amateur and participation in organizations roles, which may relate to free time or activities that need to be done outside of their home. By needing displacement and other financial expenses, they may be less desired for future performance. These roles were less frequently cited in the work of Santi et al. (2012) and Gil and De Carlo (2014).

Even receiving top treatment and medication, such as disease course modifiers, and accompanied by reference medical staff, the RAG participants presented moderate levels of pain. The maintenance of pain can be understood by the multidimensionality of this one involving physical, cognitive and affective factors. It results from the context, perception, memory of other painful events, behaviors, and conception of each individual. Therefore, the painful experience is not restricted to its physical dimension or intensity, being broader and more complex (VALERO; FARIA; LUCCA, 2015). Thus, pain becomes individual and multidimensional and directly influencing the daily and occupational roles of the individuals.

Thus, a biopsychosocial approach is needed to understand pain in its multidimensionality, which broadens the view on health-disease relationship since it perceives the human body as a biological, emotional and social being that organizes, stores and assigns meanings to processes different ways of behaving in front of the illness. In the experience of chronic pain, cognition, mood, environment, and behavior are directly related to the role of pain and

Table 4. Performance standards in each occupational role – RAG, different levels of pain.

| | RAG-Mild (N=22) | | RAG-Moderate (N=45) | | RAG-Strong (N=15) | | RAG-Mild (N=22) | RAG-Moderate (N=45) | | RAG-Strong (N=15) | |
|----------------|-----------------------------|----------|---------------------|----------|----------------------|-----------------------------|-----------------|---------------------|----------|-------------------|--|
| | %(N) | %(N) | %(N) | %(N) | %(N) | %(N) | | %(N) | %(N) | %(N) | |
| Student | Performed only in the past | 64% (14) | 56% (25) | 67% (10) | Friend | Performed only in the past | 4% (1) | 16% (7) | 7% (1) | | |
| | Loss only in the present | 18% (4) | 20% (9) | 20% (3) | | Loss only in the present | 13% (2) | 2% (1) | 13% (2) | | |
| | Gain only in the present | 0% (0) | 0% (0) | 0% (0) | | Gain only in the present | 4% (1) | 0% (0) | 0% (0) | | |
| | Performed from the present | 0% (0) | 0% (0) | 0% (0) | | Performed from the present | 0% (0) | 2% (1) | 0% (0) | | |
| | Performed until the present | 0% (0) | 9% (4) | 0% (0) | | Performed until the present | 0% (0) | 0% (0) | 0% (0) | | |
| | New role in the future | 0% (0) | 0% (0) | 7% (1) | | New role in the future | 0% (0) | 76% (34) | 0% (0) | | |
| | Continuous | 9% (2) | 13% (6) | 7% (1) | | Continuous | 74% (17) | 4% (2) | 67% (10) | | |
| | Absent | 9% (2) | 2% (1) | 0% (0) | | Absent | 4% (1) | 0% (0) | 13% (2) | | |
| | Performed only in the past | 13% (3) | 16% (7) | 13% (2) | Family Member | Performed only in the past | 4% (1) | 4% (2) | 0% (0) | | |
| | Loss only in the present | 57% (12) | 47% (21) | 53% (8) | | Loss only in the present | 0% (0) | 0% (0) | 13% (2) | | |
| Worker | Gain only in the present | 0% (0) | 0% (0) | 0% (0) | | Gain only in the present | 0% (0) | 0% (0) | 0% (0) | | |
| | Performed from the present | 0% (0) | 0% (0) | 0% (0) | | Performed from the present | 0% (0) | 0% (0) | 0% (0) | | |
| | Performed until the present | 0% (0) | 2% (1) | 7% (1) | | Performed until the present | 0% (0) | 0% (0) | 0% (0) | | |
| | New role in the future | 0% (0) | 0% (0) | 0% (0) | | New role in the future | 0% (0) | 93% (42) | 0% (0) | | |
| | Continuous | 26% (6) | 33% (15) | 20% (3) | | Continuous | 96% (21) | 0% (0) | 87% (13) | | |
| | Absent | 4% (1) | 2% (1) | 7% (1) | | Absent | 0% (0) | 2% (1) | 0% (0) | | |

RAG = Rheumatoid arthritis group; N = Number of participants; % = percentage of a answers.

Table 4. Continued...

| | RAG-Mild (N=22) | | RAG-Moderate (N=45) | | RAG-Strong (N=15) | | RAG-Mild (N=22) | | RAG-Moderate (N=45) | | RAG-Strong (N=15) | |
|------------------|-----------------------------|----------|---------------------|---------|-------------------|--------|-----------------|-----------------------------|---------------------|----------|-------------------|---------|
| | | %(N) | | %(N) | | %(N) | | %(N) | | %(N) | | %(N) |
| Volunteer | Performed only in the past | 22% (5) | 2% (1) | 7% (1) | 17% (3) | 7% (4) | 13% (2) | Performed only in the past | 0% (0) | 0% (0) | 13% (2) | 0% (0) |
| | Loss only in the present | 22% (5) | 11% (5) | 13% (2) | 0% (0) | 0% | 7% (1) | Loss only in the present | 0% (0) | 0% | 0% | 7% (1) |
| | Gain only in the present | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0% | 0% | Gain only in the present | 0% (0) | 0% | 0% | 0% (0) |
| | Performed from the present | 0% (0) | 4% (2) | 7% (1) | 4% (1) | 13% | 0% (0) | Performed from the present | 4% (1) | 13% | 0% (0) | 0% (0) |
| | Performed until the present | 0% (0) | 0% (0) | 0% (0) | 4% (1) | 11% | 13% (2) | Performed until the present | 4% (1) | 11% | 13% (2) | 0% (0) |
| | New role in the future | 35% (7) | 38% (17) | 47% (7) | 9% (2) | 58% | 7% (1) | New role in the future | 9% (2) | 58% | 7% (1) | 0% (0) |
| | Continuous | 9% (2) | 18% (8) | 13% (2) | 65% (15) | 4% | 53% (8) | Continuous | 65% (15) | 4% | 53% (8) | 0% (0) |
| | Absent | 13% (3) | 27% (12) | 13% (2) | 0% (0) | 7% | 7% (1) | Absent | 0% (0) | 7% | 7% (1) | 0% (0) |
| | Performed only in the past | 17% (4) | 4% (2) | 7% (1) | 0% (0) | 0% | 0% | Performed only in the past | 0% (0) | 2% (1) | 0% (0) | 0% (0) |
| | Loss only in the present | 0% (0) | 2% (1) | 13% (2) | 43% (12) | 22% | 13% (2) | Loss only in the present | 43% (12) | 22% (10) | 13% (2) | 0% (0) |
| Caregiver | Gain only in the present | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0% | 0% | Gain only in the present | 0% (0) | 0% | 0% | 0% (0) |
| | Performed from the present | 4% (1) | 2% (1) | 0% (0) | 9% (2) | 9% | 13% (2) | Performed from the present | 9% (2) | 9% | 13% (2) | 0% (0) |
| | Performed until the present | 0% (0) | 9% (4) | 20% (3) | 0% (0) | 4% | 4% | Performed until the present | 0% (0) | 4% | 4% | 13% (2) |
| | New role in the future | 13% (3) | 9% (4) | 7% (1) | 13% (1) | 7% | 13% (2) | New role in the future | 13% (1) | 7% | 13% (2) | 0% (0) |
| | Continuous | 65% (14) | 71% (32) | 53% (8) | 22% (5) | 33% | 35% (5) | Continuous | 22% (5) | 33% (15) | 35% (5) | 0% (0) |
| | Absent | 0% (0) | 2% (1) | 0% (0) | 13% (2) | 22% | 13% (2) | Absent | 13% (2) | 22% (10) | 13% (2) | 0% (0) |

RAG = Rheumatoid arthritis group; N = Number of participants; % = percentage of a answers.

Table 4. Continued...

| | RAG-Mild (N=22) | RAG-Moderate (N=45) | RAG-Strong (N=15) | Participation in Organizations | RAG-Mild (N=22) | RAG-Moderate (N=45) | RAG-Strong (N=15) |
|------------------|--------------------|------------------------|----------------------|-----------------------------------|--------------------|------------------------|----------------------|
| | %(N) | %(N) | %(N) | | %(N) | %(N) | %(N) |
| Household chores | 0% (0) | 0% (0) | 0% (0) | Performed only in the past | 0% (0) | 4% (2) | 0% (0) |
| | 4% (1) | 0% (0) | 0% (0) | Loss only in the present | 4% (1) | 4% (2) | 7% (1) |
| | 0% (0) | 0% (0) | 0% (0) | Gain only in the present | 0% (0) | 0% (0) | 0% (0) |
| | 0% (0) | 9% (4) | 0% (0) | Performed from the present | 0% (0) | 0% (0) | 0% (0) |
| | 0% (0) | 0% (0) | 7% (1) | Performed until the present | 0% (0) | 2% (1) | 7% (1) |
| | 0% (0) | 0% (0) | 0% (0) | New role in the future | 17% (3) | 31% (14) | 40% (6) |
| | 87% (19) | 91% (41) | 93% (14) | Continuous | 4% (1) | 2% (1) | 0% (0) |
| | 9% (2) | 0% (0) | 0% (0) | Absent | 74% (17) | 56% (25) | 47% (7) |

RAG = Rheumatoid arthritis group; N = Number of participants; % = percentage of a answers.

suffering in the individual's life (FLORES; COSTA JUNIOR, 2008; SARDA JUNIOR et al., 2012).

Rheumatoid arthritis affects individuals in productive working age and can establish a considerable limitation in functional capacity and absence of work capacity (PARREIRA et al., 2013). As shown previously, on average, 73.8% of the women had no paid work due to the functional disability from the disease.

According to Corbacho and Dapuetto (2010), people diagnosed with RA give up their professions and/or occupations 20 years earlier than expected, causing serious damage to their quality of life. The major challenge for public health in future decades is the diagnosis, maintenance, and prevention of possible threats related to functional disability, in favor of longevity with total quality of life, independence, and autonomy (DEL DUCA; SILVA; HALLAL, 2009).

Many studies with the proposal to identify the occupational roles of individuals affected by various diseases are carried out in Brazil (CORDEIRO et al., 2007; DIAS et al., 2012; QUILES-CESTARI; RIBEIRO, 2012; SILVA, 2011; SOUSA, 2008; PARREIRA et al., 2013; DAHDAAH; CARVALHO, 2014; CRUZ; EMMEL, 2012). However, little is said about the occupational performance of women with chronic pain and rheumatoid arthritis.

In the study by Parreira et al. (2013), the authors evaluated the occupational roles of patients with rheumatoid arthritis. Twenty-three women and four men were included. The participants presented greater loss than the gain in their occupational roles, with the worker role as the one of greater loss. However, these authors do not compare the data obtained with healthy population.

In this study and in the data obtained by Parreira et al. (2013), the participants obtained more losses than gains over time. The student and worker roles were those that the participants most failed to perform, and most of the participants classified these roles as only performed in the past, but with a high level of importance. However, occupational roles of caregiver, household chores, and family members were classified as continuous roles, that even with the illness they are performed by the participants. These occupational roles were also identified by the participants with great importance for occupational life.

These roles are related to the social role of women in Brazil. In the study by Rocha-Coutinho (2004), women reported that those roles defining her as women are being mothers and caring for their

children. This aspect is verified in this study with the maintenance of the occupational role of caregiver and its evaluation as very important. The same reflection happens for the role of family member. Regarding household chores, the activities related to this occupational role, when verified by PNAD (INSTITUTO..., 2017), 90% of the women refer to the accomplishment of these activities. If compared to 45% of men, the social role of women was therefore maintained and expected, even with their illness.

According to Rodrigues et al. (2000), the family has the fundamental role for family welfare in terms of growth, satisfaction of needs, training of citizens, performance of ideals, social support, development and care, and considering the possibilities of each member of the family as a trainer, according to their beliefs and values. In beliefs and values, interdependence between the specificities of family and society are found.

When compared with the healthy individuals, the roles with difference were student, worker, volunteer and hobby/amateur. These data reinforce the main losses of women with pain and rheumatoid arthritis in their occupational roles.

According to Porto and Tamayo (2003), being a worker brings values related to the social function as a source of income and human sustenance, as well as a basis of social support, social participation and the way of relating work to other aspects of life. On the other hand, the role of volunteer is directly related to the personal nature of donating effort and time for individual need and also a social need. Voluntary work breaks with isolation and loneliness, seeking a healthier space (AZEVEDO, 2007). But dedicating to altruism, free time is needed. Women with RA need to take care of themselves first, which may be the difference with healthy women. The same happens with the accomplishment of leisure activities and the occupational role of Hobby. Due to the need to take care of their health, the focus becomes the occupational roles socially expected by the woman and the management of her health.

When comparing the severity of pain, there was no difference in the occupational roles. Thus, regardless of its intensity, pain impairs the performance of some occupational roles.

Other studies should be done to verify these changes throughout treatment, as well as the evaluation of the best occupational therapy interventions to reduce the impact of pain on the occupational roles of women with rheumatoid arthritis. The limitation of this study is being a cross-sectional study, longitudinal

studies could help in the understanding of the real reasons of not performing occupational roles in the present and if they would really be achieved in the future. Also, the inhomogeneity of the disease activity and the number of participants per pain level were a limitation, which may interfere in not finding statistical difference.

Thus, this study identified that some changes in the occupational roles of women with chronic pain and rheumatoid arthritis when compared to women without pain and without RA. This is an important finding since there are no other studies that compare this population to healthy subjects in the national literature. This finding justifies the need for the intervention of occupational therapists in the population of women with rheumatoid arthritis early, since it favors the maintenance of occupational performance and occupational roles, stimulating their performance even after the illness.

5 Conclusion

This study enabled to verify that women with chronic pain caused by RA undergo changes in the performance patterns of student, worker, friend and hobby/amateur occupational roles when compared to women of the same age and socioeconomic level who did not report pain or presented the diagnosis of RA. These findings also enabled to identify the need of the occupational therapist, who seeks to broaden the daily life and recover the occupational performance of this population. These changes in occupational roles, independently, occur from the level of pain intensity reported by the participants.

All the occupational roles were considered important for the occupational life of the women of both groups, being the participation in organizations as the least important related to social representations and activities outside the home context.

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References

ANDERSSON, M. L. E.; SVENSSON, B.; BERGMAN, S. Chronic widespread pain in patients with rheumatoid arthritis and the relation between pain and disease activity measures over the first 5 years. *The Journal of Rheumatology*,

Toronto, v. 40, n. 12, p. 1977-1985, 2013. <http://dx.doi.org/10.3899/jrheum.130493>.

AZEVEDO, D. Voluntariado corporativo: motivações para o trabalho voluntário. *Revista Produção Online*, Florianópolis, p. 1-14, 2007. Edição Especial.

BODE, C.; TAAL, E. Rheumatoid Arthritis: psychosocial aspects. In: WRIGHT, J. D. (Ed.). *International Encyclopedia of the Social & Behavioral Sciences*. New York: Elsevier, 2015. p. 655-659. <http://dx.doi.org/10.1016/B978-0-08-097086-8.14122-4>.

BRASIL. Lei nº 8.213, de 24 de julho de 1991. Dispõe sobre os planos de benefícios da previdência social e dá outras providências. *Diário Oficial [da] República Federativa do Brasil*, Poder Executivo, Brasília, DF, 24 jul. 1991. Disponível em: <http://www.planalto.gov.br/ccivil_03/leis/L8213cons.htm>. Acesso em: 9 nov. 2018.

BRASIL. Resolução nº 466, de 12 de dezembro de 2012. Aprova normas regulamentadoras de pesquisas envolvendo seres humanos. *Diário Oficial [da] República Federativa do Brasil*, Poder Executivo, Brasília, DF, 12 dez. 2012. Disponível em: <http://bvsms.saude.gov.br/bvs/saudelegis/cns/2013/res0466_12_12_2012.html>. Acesso em: 9 nov. 2018.

CORBACHO, M. I.; DAPUETO, J. J. Avaliação da capacidade funcional e da qualidade de vida de pacientes com artrite reumatoide. *Revista Brasileira de Reumatologia*, São Paulo, v. 50, n. 1, p. 31-43, 2010. <http://dx.doi.org/10.1590/S0482-50042010000100004>.

CORDEIRO, J. R. et al. Cross-cultural reproducibility of the Brazilian Portuguese version of the Role Checklist for chronic obstructive pulmonary disease patients. *American Journal of Occupational Therapy*, Bethesda, v. 61, n. 1, p. 33-40, 2007. <http://dx.doi.org/10.5014/ajot.61.1.33>.

CRUZ, D. M. C.; EMMEL, M. L. G. Papéis ocupacionais de pessoas com deficiências físicas: diferenças de gênero e ciclos de desenvolvimento. *Revista Baiana de Terapia Ocupacional*, Salvador, v. 1, n. 1, p. 4-24, 2012.

DAHDAH, D. F.; CARVALHO, A. M. P. Papéis ocupacionais, benefícios, ônus e modos de enfrentamento de problemas: um estudo descritivo sobre cuidadoras de idosos dependentes no contexto da família. *Cadernos de Terapia Ocupacional da UFSCar*, São Carlos, v. 22, n. 3, p. 463-464, 2014. <http://dx.doi.org/10.4322/cto.2014.067>.

DE CARLO, M. M. R. P.; QUEIROZ, M. E. G.; SANTOS, W. A. Terapia ocupacional em dor e cuidados paliativos: princípios, modelos de intervenção e perspectivas. In: DE CARLO, M. M. R. P.; QUEIROZ, M. E. *Dor e cuidados paliativos: terapia ocupacional e interdisciplinaridade*. São Paulo: Roca, 2007. p. 126-145.

DEL DUCA, G.; SILVA, M.; HALLAL, P. C. Incapacidade funcional para atividades básicas e instrumentais da vida diária em idosos. *Revista de Saúde Pública*, São Paulo, v. 43, n. 5, p. 796-805, 2009. <http://dx.doi.org/10.1590/S0034-89102009005000057>.

- DIAS, V. N. et al. Transplante de células-tronco hematopoéticas: um estudo controlado sobre papéis ocupacionais. *Cadernos de Terapia Ocupacional da UFSCar*, São Carlos, v. 20, n. 2, p. 165-171, 2012. <http://dx.doi.org/10.4322/cto.2012.016>.
- FLORES, A. M. N.; COSTA JUNIOR, Á. L. Modelo biopsicossocial e formulação comportamental: compreendendo a cefaléia do tipo tensional. *Psicologia em Estudo*, Maringá, v. 13, n. 1, p. 143-151, 2008. <http://dx.doi.org/10.1590/S1413-73722008000100017>.
- FONTOURA, D. S.; DOLL, J.; OLIVEIRA, S. N. O desafio de aposentar-se no mundo contemporâneo. *Educação & Realidade*, Porto Alegre, v. 40, n. 1, p. 53-79, 2015. <http://dx.doi.org/10.1590/2175-623645774>.
- INSTITUTO BRASILEIRO DE GEOGRAFIA E ESTATÍSTICA – IBGE. *Síntese de indicadores sociais: uma análise das condições de vida da população brasileira*: 2017. Rio de Janeiro: IBGE, 2017. Disponível em: <<https://biblioteca.ibge.gov.br/visualizacao/livros/liv101459.pdf>>. Acesso em: 20 set. 2018.
- GIL, N. A. N.; DE CARLO, M. M. R. P. Os papéis ocupacionais de pessoas hospitalizadas em decorrência da Síndrome da Imunodeficiência Adquirida. *O Mundo da Saúde*, São Paulo, v. 38, n. 2, p. 179-188, 2014. Disponível em: <http://bvms.saude.gov.br/bvs/artigos/mundo_saude/papeis_ocupacionais_pessoas_hospitalizadas_decorrencia.pdf>. Acesso em: 20 set. 2018.
- LAURINDO, I. E. M. et al. Consenso brasileiro para o diagnóstico e tratamento da artrite reumatoide. *Revista Brasileira de Reumatologia*, São Paulo, v. 6, n. 42, p. 355-361, 2002.
- PARREIRA, M. M. et al. Papéis ocupacionais de indivíduos em condições reumatológicas. *Revista de Terapia Ocupacional da Universidade de São Paulo*, São Paulo, v. 24, n. 2, p. 127-133, 2013. <http://dx.doi.org/10.11606/issn.2238-6149.v24i2p127-133>.
- PORTO, J. B.; TAMAYO, A. Escala de valores relativos ao trabalho: EVT. *Psicologia: Teoria e Pesquisa*, Brasília, v. 19, n. 2, p. 145-152, 2003. <http://dx.doi.org/10.1590/S0102-37722003000200006>.
- QUILES-CESTARI, L. M.; RIBEIRO, R. P. P. Os papéis ocupacionais de mulheres com anorexia nervosa. *Revista Latino Americana de Enfermagem*, Ribeirão Preto, v. 20, n. 2, p. 1-8, 2012. <http://dx.doi.org/10.1590/S0104-11692012000200004>.
- RICE, S. et al. Psychological distress in out-patients assessed for chronic pain compared to those with rheumatoid arthritis. *Pain Research and Management*, New York, v. 2016, p. 1-7, 2016. <http://dx.doi.org/10.1155/2016/7071907>.
- ROBINSON, K.; KENNEDY, N.; HARMON, D. Review of occupational therapy for people with chronic pain. *Australian Occupational Therapy Journal*, Melbourne, v. 58, n. 2, p. 74-81, 2011. <http://dx.doi.org/10.1111/j.1440-1630.2010.00889.x>.
- ROCHA-COUTINHO, M. L. Novas opções, antigos dilemas: mulher, família, carreira e relacionamento no Brasil. *Temas em Psicologia*, Ribeirão Preto, v. 12, n. 1, p. 2-17, 2004.
- RODRIGUES, M. S. P.; GUEDES SOBRINHO, E. H. G.; SILVA, R. M. A família e sua importância na formação do cidadão. *Família Saúde e Desenvolvimento*, Curitiba, v. 2, n. 2, p. 40-48, 2000. Disponível em: <<https://revistas.ufpr.br/refased/article/viewFile/4934/3754>>. Acesso em: 20 set. 2018.
- RYAN, S.; MCGUIRE, B. Psychological predictors of pain severity, pain interference, depression, and anxiety in rheumatoid arthritis patients with chronic pain. *British Journal of Health Psychology*, London, v. 21, n. 2, p. 336-350, 2016. <http://dx.doi.org/10.1111/bjhp.12171>.
- SALAFFI, F. et al. The health-related quality of life in rheumatoid arthritis, ankylosing spondylitis, and psoriatic arthritis: A comparison with a selected sample of healthy people. *Health and Quality of Life Outcomes*, London, v. 7, n. 25, p. 1-12, 2009.
- SANTI, A.; MARIOTTI, M. C.; CORDEIRO, J. R. Lista de Identificação de Papéis Ocupacionais em um centro de tratamento de Hemodiálise: contribuições para a intervenção de terapia ocupacional: estudo piloto. *Revista de Terapia Ocupacional da Universidade de São Paulo*, São Paulo, v. 23, n. 3, p. 289-296, 2012. Disponível em: <<http://www.periodicos.usp.br/rto/article/view/55645/59105>>. Acesso em: 20 set. 2018.
- SARDÁ JÚNIOR, J. J. et al. Preditores biopsicossociais de dor, incapacidade e depressão em pacientes brasileiros com dor crônica. *Revista Dor*, São Paulo, v. 13, n. 2, p. 111-118, 2012. <http://dx.doi.org/10.1590/S1806-00132012000200003>.
- SILVA, T. G. P. *A influência dos papéis ocupacionais na qualidade de vida de pacientes com esquizofrenia*. 2011. 115 f. Dissertação (Mestrado em Saúde Mental) – Universidade de São Paulo, Ribeirão Preto, 2011.
- SOKKA, T. et al. Work disability remains a major problem in rheumatoid arthritis in the 2000s: data from 32 countries in the QUEST-RA study. *Arthritis Research & Therapy*, London, v. 12, n. 2, p. R42, 2010. <http://dx.doi.org/10.1186/ar2951>.
- SOUSA, C. C. M. *Os papéis ocupacionais da mulher portadora de fibromialgia*. 2008. Monografia (Graduação em Terapia Ocupacional) – Universidade de São Paulo, Ribeirão Preto, 2008.
- VALERO, M. C.; FARIA, M. Q. G.; LUCCA, P. S. R. Avaliação e tratamento de dor crônica no paciente idoso. *Revista Thêma et Scientia*, Porto Alegre, v. 5, n. 2, p. 129-138, 2015.

Author's Contributions

Leticia Meda Vendrusculo-Fangel: Conception of text, organization of sources, collection and analysis of the data, writing, and review of the text. Renan Fangel: Collection and analysis of the data, writing, and proofreading. Tiago dos Santos Leles and Lilian de Melo Moura: review of the text. Rita de Cássia Marqueti: Advisor, writing and review of the text. All authors approved the final version of the text.

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