

Application of the functionality index in people with rheumatic diseases**Aplicação do índice de funcionalidade em pessoas com doenças reumáticas****Aplicación del índice de funcionalidad en personas con enfermedades reumáticas**

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Objective: to identify functional impairments, barriers to social and occupational participation in people with rheumatic diseases. **Methods:** a case study, quantitative and descriptive, carried out in 2019 with people with rheumatic diseases accompanied by the Physica Therapy outpatient clinic of a University Hospital in the interior of the state of Rio Grande do Sul, Brazil. The Brazilian Functioning Index was used. Data were analyzed by descriptive statistics. **Results:** five patients participated, of which four were women, two adults, three elderly, most had incomplete high school education and were affected by motor deficiencies. The most affected functions were neuromusculoskeletal and pain. Participants mentioned barriers in the seven domains investigated by the instrument. **Conclusion:** rheumatic diseases affect the main significant occupations and it is up to the Occupational Therapist to understand and prevent limitations, seek strategies to reduce pain, functional disabilities, adapt daily life, maintain or improve the emotional state, social and occupational participation of affected people.

Descriptors: Rheumatology; Social participation; Occupational therapy.

Objetivo: identificar acometimentos funcionais, barreiras para a participação social e ocupacional em pessoas com doenças reumáticas. **Método:** estudo de caso quantitativo e descritivo realizado em 2019 com pessoas com doenças reumáticas acompanhadas pelo ambulatório de Fisioterapia de um Hospital Universitário do interior do Rio Grande do Sul. Utilizou-se o Índice de Funcionalidade Brasileiro. Os dados foram analisados por estatística descritiva. **Resultados:** participaram cinco pacientes, dos quais quatro eram mulheres, dois adultos, três idosos, a maioria tinha ensino médio incompleto e era acometido por deficiências motoras. As funções mais afetadas foram neuromusculoesqueléticas e dor. Os participantes referiram barreiras nos sete domínios investigados pelo instrumento. **Conclusão:** as doenças reumáticas afetam as principais ocupações significativas e cabe ao Terapeuta Ocupacional compreender e prevenir as limitações, buscar estratégias para reduzir a dor, incapacidades funcionais, adaptar o cotidiano, manter ou melhorar o estado emocional, a participação social e ocupacional das pessoas acometidas.

Descritores: Reumatologia; Participação Social; Terapia ocupacional.

Objetivo: identificar las deficiencias funcionales y las barreras a la participación social y laboral en personas con enfermedades reumáticas. **Método:** estudio de caso cuantitativo y descriptivo realizado en 2019 con personas con enfermedades reumáticas acompañadas por el ambulatorio de Fisioterapia de un Hospital Universitario del interior de Rio Grande do Sul, Brasil. Se utilizó el Índice de Funcionalidad Brasileño. Los datos se analizaron mediante estadísticas descriptivas. **Resultados:** participaron cinco pacientes, de los cuales, cuatro eran mujeres, dos adultos, tres ancianos, la mayoría tenía estudios secundarios incompletos y estaba afectado por discapacidades motoras. Las funciones más afectadas fueron las neuromusculoesqueléticas y el dolor. Los participantes informaron de obstáculos en los siete dominios investigados por el instrumento. **Conclusión:** las enfermedades reumáticas son las principales ocupaciones significativas y es función del Terapeuta Ocupacional comprender y prevenir las limitaciones, buscar estrategias para reducir el dolor, las incapacidades funcionales, adaptar el día a día, mantener o mejorar el estado emocional, la participación social y ocupacional de las personas acometidas.

Descriptores: Reumatología; Participación social; Terapia ocupacional.

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INTRODUCTION

Rheumatic diseases are characterized by the Brazilian Society of Rheumatology as “a set of different diseases that affect the human musculoskeletal system (bones, joints, cartilage, muscles, tendons and ligaments) or other parts of the body and that can occur in people of all ages”¹. These cause chronic and progressive impairment, being attributed to multiple etiologies related to immunological, genetic and environmental factors¹.

The symptoms of rheumatic diseases manifest themselves in different ways among people. Pain is the most reported symptom, followed by fatigue, crepitus, edema, decreased range of motion, morning joint stiffness, deformities, joint nodules, muscle tension, functional disability and emotional disorders².

Rheumatic diseases can also compromise body structures of the locomotor system and, in some cases, internal organs¹. Given their heterogeneity, the choice of treatment will depend on the disease, its presentation and the evolution of the clinical picture. Regarding treatment, people affected by rheumatic diseases need prolonged clinical follow-up, allopathic treatments, which are often expensive and can trigger side effects, which are minimized with the use of other drugs¹.

People with rheumatic diseases suffer impairment in their functionality, social and occupational participation, economic condition, in addition to psycho-emotional impacts². To understand the relationship of body structure with environmental, cultural and socioeconomic barriers, in 2001, the International Classification of Functioning, Disability and Health (ICF) was approved by the World Health Organization. And based on the reflections of the ICF, the Brazilian Functionality Index (IF-Br) was created to understand the needs, demands and barriers faced by people with disabilities. The IF-Br is designed to investigate not only biomedical issues, but also factors related to the environment, culture and social conditions, as it is understood that the limitations faced by people with disabilities have their origin in society³.

Regarding occupational therapeutic intervention, it is noteworthy that the professional will consider all aspects of daily life in their planning, considering the person's social, occupational and cultural participation. The occupational therapist must be part of the multidisciplinary team that monitors people affected by rheumatic diseases, seeking to contribute to understanding and coping with the disease, preventing the worsening of deformities, improving and maintaining functional capacity, encouraging engagement in occupations, contributing to their autonomy and independence in self-care, work, educational, social and leisure activities⁴.

In turn, the use of a group approach with people with rheumatologic diseases, by occupational therapists, contributed to health promotion, manual functional rehabilitation, construction of a space for well-being, social interaction and health education⁵. In this context, this study aims to identify functional impairments, barriers to social and occupational participation in people with rheumatic diseases.

METHODS

It is a case study, quantitative and descriptive. It is a data clipping from the project "*Evaluation of the Brazilian Functioning Index in Adults with Disabilities*", carried out from March to November 2019.

The following inclusion criteria were considered: i) people with disabilities affected by rheumatic diseases; ii) aged 18 years or more; iii) both sexes; and iv) accompanied by the Physical Therapy outpatient clinic of a University Hospital in the interior of the state of Rio Grande do Sul. Exclusion criteria: i) people unable to communicate orally; ii) person with cognitive disabilities; and iii) people with difficulties to understand the study.

The data collection instrument used was the IF-Br³, comprised of 81 questions divided into three blocks: Block 1: seeks to investigate bodily functions, and consists of 20 questions; Block 2: identification form with 16 multiple choice questions and 4 open questions; and Block 3: investigates activities and participation, structured with 41 multiple choice questions, grouped into seven domains (Sensory, Communication, Mobility, Personal Care, Domestic Life, Education, Work and Economic Life, Socialization and Community Life).

In Block 3, people score their level of dependence and independence in the highlighted activities, the score follows the criteria: 25 points corresponds to total dependence on third parties; 50 corresponds to partial dependence on third parties; 75 corresponds to modified independence; and 100 corresponds to total independence. When in Block 3, if the participant mentions a score of 25 (total dependence on third parties), it is necessary to investigate the external factor that prevents them from performing a certain activity. External factors are divided into Products and Technologies, Environment, Support and Relationships, Actions and Services and Systems. If there is more than one external barrier that prevents the person from performing a certain activity, these must be marked³.

For the total value of each domain of Block 3, the percentage calculation is performed. It is noteworthy that the domains have maximum reference values, they are: 200 for the Sensory domain; 500 for Communication; 800 for Mobility; 800 for Personal Care; 500 for Domestic Life; 500 for Education, Work and Economic Life; and 800 for Socialization and Community Life.

The final calculation of the IF-Br is performed from the sum of the scores of the seven domains of Block 3 and the percentage calculation, with 700 being the maximum value of the final score of the instrument³.

The collected data were weighted from the simple descriptive analysis, the numerical results of the IF-Br.

Before starting the interviews, the study proposal was presented to the participants, those who agreed to take part in the study signed the Free and Informed Consent Term. To protect the patient's identity, participants were identified by the letter "P" and a sequential number. This research was approved by the Ethics and Research Committee with Human Beings of the Universidade Federal de Santa Maria, under registration number CAAE: 97504718.8.0000.5346.

RESULTS

The participants of this study were five people with disabilities affected by rheumatic diseases, of which four were women, the minimum age was 52 years and the maximum 70 years, and all self-declared white. As for educational level, three had studied up to Elementary School, but did not finish it. Regarding the occupation before injury, two participants reported being a housewives, one was an artisan, one was a hairdresser's assistant and another was a mechanic technician.

Regarding the region of the body with sequelae, four participants referred to the Upper Limb (UL) and Lower Limb (LL) and one reported having Multiple System Atrophy (MSA). All participants have motor impairment, only one of them has hearing and motor impairment (Chart 1).

Regarding "Bodily Functions", it is observed that the participants mentioned impairments in "Mental Functions" (three participants mentioned impairments in specific functions and two in global functions), all in the pain function in "Sensory and Pain Functions". In the "Movement-Related Neuromusculoskeletal Functions", five reported involvement in joint and bone functions, four in muscle functions and three in movement functions (Chart 2).

Chart 1. Sociodemographic and health condition description. Santa Maria, 2019.

Part	Sex	Age	Color	Educational level	Occupation before injury	Pathology	Region of sequelae	Type of disability
P1	F	52	White	Incomplete Elementary School	Hairdresser assistant	Osteoarthritis/Rheumatoid arthritis	UL LL	Motor
P2	M	52	White	Complete High School	Mechanical technician	Fibromyalgia Ankylosing Spondylitis	UL LL	Hearing and Motor
P3	F	70	White	Complete Higher Education	Artisan	Fibromyalgia	MSA	Motor
P4	F	67	White	Incomplete Elementary School	Housewife	Gout Osteoarthritis	UL LL	Motor
P5	F	68	White	Incomplete Elementary School	Housewife	SLE Osteoarthritis	UL LL	Motor

Key: Part.: Participant; SLE: Systemic Lupus Erythematosus; UL: Upper Limb; LL: Lower Limb; MSA: Multiple System Atrophy.

Chart 2. Bodily functions affected. Santa Maria, 2019.

Bodily functions	Type of function	Participants
1. Mental Functions	Global	2
	Specific	3
2. Sensory Functions and Pain	Vision and related functions	1
	Hearing	1
	Vestibular	-
	Pain	5
	Additional sensory	-
3. Voice and Speech Functions	Voice, articulation, fluency, speech rhythm	-
4. Functions of Hematologic, Immune and Respiratory Cardiovascular System	Cardiovascular	-
	Hematological	1
	Immunological	2
	Respiratory	-
5. Digestive, Metabolic and Endocrine System functions	Digestive	2
	Metabolism and endocrine	1
6. Genitourinary and Reproductive Functions	Urinary	2
	Genitals and reproductive	-
7. Neuromusculoskeletal and Movement-Related Functions	Joints and bones	5
	Muscular	4
	Movements	3
8. Skin Functions and Related Structures	Skin, hair and nails	2

It is observed that the participants had lower percentages in the domain related to Education, Work and Economic Life, followed by the domains related to Domestic Life, Socialization and Community Life (Table 1).

Table 1. Percentage of independence levels for each domain and total IF-Br score. Santa Maria, 2019.

IF-Br Domains	P1	P2	P3	P4	P5
Sensory Domain	100.0%	50.0%	100.0%	75.0%	100.0%
Communication Domain	100.0%	95.0%	100.0%	100.0%	100.0%
Mobility Domain	34.1%	90.6%	100.0%	68.7%	75.0%
Personal Care Domain	68.7%	84.3%	100.0%	100.0%	84.3%
Domestic Life Domain	60.0%	75.0%	60.0%	90.0%	80.0%
Education, Work and Economic Life Domain	35.0%	55.0%	70.0%	55.0%	40.0%
Socialization and Community Life Domain	81.2%	81.2%	90.6%	78.1%	78.1%
IF-Br Total Score	68.4%	75.8%	88.6%	80.9%	79.6%

Participants identified barriers in the seven domains of the IF-Br. In relation to the “Sensory Domain” it is observed that the participants mentioned barriers of products and technology in the activities and participation in “Observing”, signaled environmental barriers related to “Listening”. In the “Communication Domain”, participants highlighted action barriers related to “Communicating/Producing Messages” and “Use of remote communication devices” (Table 3).

In the “Mobility Domain” – activities and participation – “Moving inside building other than their own home” three participants mentioned environmental barriers, three pointed to support and relationship barriers, one action barrier and two from services, systems and policies and “Moving outside their home and other buildings” three participants mentioned environmental barriers, three mentioned support and relationship barriers, two attitudinal barriers and two related to services, systems and policies (Table 3). As for the “Personal Care Domains”, the participants highlighted barriers in the activities and participation related to “Urination regulation”, “Defecation regulation” and “Getting dressed”. In the “Domestic Life Domain”, the participants indicated barriers to carrying out their “Household chores”, “Maintaining and properly using household objects and utensils” and “Caring for others” (Table 3).

In the “Education, Work and Economic Life Domain” the participants cited barriers in activities and participation related to “Education”, of which one reported support and relationship barriers and four identified action barriers. As for “Professional qualification”, one participant indicated support and relationship barriers and four identified action barriers. Regarding “Paid work”, two participants mentioned product and technology barriers, one mentioned environmental barriers and one related to relationship support, two mentioned action barriers and one related to services, systems and policies. In the “Socialization and Community Life Domain”, five participants highlighted action barriers in “Political life and citizenship” (Table 3).

Chart 3. Researched according to identified barriers. Santa Maria, 2019.

Domain	Activities and Participation	Barriers identified by participants				
		P and T	Env	S and R	At	SS and P
1. Sensory	1.1 Observing	2	-	-	-	-
	2.2 Listening	-	3	-	-	-
2. Communication	2.1 Communicating/Receiving Messages	-	-	-	-	-
	2.2 Communicating/Producing Messages	-	-	-	1	-
	2.3 Talking	-	-	-	-	-
	2.4 Discussing	-	-	-	-	-
	2.5 Use of remote communication devices	-	-	-	1	-
3. Mobility	3.1 Changing and maintaining body positions	1	-	1	-	-
	3.2 Reaching, transporting and moving objects	1	-	1	-	1
	3.3 Fine hand movements	1	-	-	-	-
	3.4 Moving around the house	-	1	2	1	-
	3.5 Moving inside building other than their own home	-	3	3	1	2
	3.6 Moving outside their home and other buildings	-	3	3	2	2
	3.7 Using public transport	1	-	1	1	1
	3.8 Using individuals transport as a passenger	-	1	1	1	1
4. Personal Care	4.1 Washing up	1	-	-	-	-
	4.2 Caring for body parts	1	-	-	-	-
	4.3 Urination regulation	-	-	1	1	1
	4.4 Defecation regulation	-	-	1	1	1
	4.5 Getting dressed	2	-	1	-	-
	4.6 Eating	-	1	1	-	-
	4.7 Drinking	-	-	-	-	-
	4.8 Ability to identify health problems	-	-	-	-	-
5. Domestic Life	5.1 Preparing snack-like meals	-	-	1	-	-
	5.2. Cooking	-	-	1	-	-
	5.3 Performing household chores	1	-	2	1	-
	5.4 Maintaining and properly using household objects and utensils	1	-	2	-	-
	5.5 Caring for others	-	-	-	3	-
6. Education, Work and Economic Life	6.1 Education	-	-	1	4	-
	6.2. Professional qualification	-	-	1	4	-
	6.3 Paid work	2	1	1	2	1
	6.4 Making purchases and contracting services	-	-	1	1	-
	6.5 Administration of personal economic resources	-	-	1	-	-
7. Socialization and Community Life	7.1 Regulate behavior in interactions	-	-	-	-	-
	7.2 Interacting according to social rules	-	-	-	-	-
	7.3 Relationships with strangers	-	-	-	1	-
	7.4 Relationships with family and familiar people	-	-	-	-	-
	7.5 Intimate relationships	-	-	-	1	-
	7.6 Socialization	-	-	-	1	2
	7.7 Making their own choices	-	-	-	-	-
	7.8 Political life and citizenship	-	-	-	5	-

Key: P and T: Products and Technology; Env: Environment; S and R: Support and Relationships; At: Attitudes; SS and P: Services, Systems and Policies.

DISCUSSION

As for the age and sex of the participants, there is agreement with another investigation⁶. This shows that rheumatic diseases are prevalent in the female population and affect adults and the elderly.

Most had a low level of education, similar to other studies⁶⁻⁷, which can be considered because they are users dependent on the Unified Health System (SUS), when compared to users of health plans. Another study points to the fact that people with low educational levels and lower socioeconomic conditions tend to seek the SUS (especially considering its principles) more⁸.

Participants mentioned limitations in “Global and Specific Mental Functions”. A study on inadequate pain relief in people with primary knee osteoarthritis points to depression as one of the impairments presented by the participants². The depressive conditions presented by people with rheumatic diseases may be associated with the limitations they face in performing their daily activities, generating embarrassment, isolation and losses in their social participation.

Rheumatic diseases lead to chronic and disabling impairment, and it is reasonable to infer that they can be an important stressor and favor the emergence of psychological changes and depressive symptoms, which the entire team should be aware of.

Regarding the “Sensory Functions and Pain”, it can be observed that the five participants highlighted the pain condition. Rheumatic diseases represent the set of different diseases that affect the musculoskeletal system and are associated with inflammatory processes, causing pain, mainly in the joints and muscles. Pain can generate restrictions on social participation and lead to losses in significant occupational roles, resulting in reduced ability to perform self-care, productive, social and leisure activities^{4-5,9-10}.

As for the “Neuromusculoskeletal Functions Related to Movement”, it is observed that the participants referred to impairments in the “Joint and Bone Functions,” “Muscular” and “Movement”. Rheumatic diseases cause limitations in the locomotor system and connective tissue, that is, bones, joints, cartilage, muscles, tendons and ligaments¹¹.

Diseases and injuries that encompass the musculoskeletal system generate pain and can cause impairments such as loss of functions, deformities and disabilities, reduced functional capacities, such as Activities of Daily Living (ADL), Instrumental Activities of Daily Living (IADL), activities of work and leisure, as well as the mental capacities that can also be compromised, significantly affecting the quality of life of these people⁹.

In the “Mobility Domain” participants mentioned barriers in all activities and participation. Rheumatic diseases cause musculoskeletal impairments, contributing to physical disability in affected people. Due to all the symptoms such as pain, swelling, generalized tiredness, among others, we can understand the difficulties of moving and how they are mainly related to the worsening of joint symptoms¹⁰.

In the “Personal Care Domain” there were difficulties in basic activities such as “Urination regulation”, “Defecation regulation” and “Getting Dressed”. These dysfunctions can compromise the self-esteem of people with rheumatic diseases, leading to isolation and restrictions on occupational and social participation, with negative consequences for the quality of life of people affected by rheumatic diseases⁹.

In the “Domestic Life Domain”, the participants had difficulties in the activities and participation of “Performing household chores,” Maintaining and properly using household objects and utensils” and “Caring for others.” A study on the occupational performance of people with osteoarthritis in the hands highlighted that the activities that the participants had the greatest impairment were: washing clothes, cutting with a knife, washing dishes and clothing⁹. These activities require muscle strength and skills in pinching and palm pressing.

Another study showed that people affected by rheumatological diseases have commitments to perform activities such as: household chores, going to the bathroom, showering, dressing, eating, moving around and going to a medical appointment, for example, thus, generally needing help from other people to carry out their daily activities¹².

In another study, there was a change in occupational roles performed by people affected by rheumatic diseases¹³. In this way, people with rheumatic diseases suffer impacts on the occupational performance of their daily activities, affecting the various areas of human occupation. The damage caused by these can lead the person to reduce or definitively interrupt the performance of activities that are important and significant for their life, causing damage to their identity, social and occupational participation.

In the “Education, Work and Economic Life Domain” it can be seen that most participants have levels that significantly compromise their activities; this data is also reinforced by the fact that all participants are retired. In an investigation, it was observed that the performance area in which people affected by rheumatic diseases had the highest number of compromised activities was productivity, that is, in productive occupations, and most of the activities described are related to the profession performed by the participants: artisan, manicurist, packer, beautician, housekeeper and seamstress⁹. In the difficulties encountered by people with

rheumatic diseases, dysfunctions related to work activities represent a serious consequence, which can lead to early retirement⁴.

Early retirement can generate significant impacts on the economic condition of the worker, as in some cases, workers who retire early are faced with a significant reduction in salary and can have direct repercussions on the family's financial situation and structure. Research has shown that people who were working had a lower prevalence of incapacity for instrumental activities, which are those that involve greater complexity to perform¹¹.

In terms of emotional impacts, early retirement can generate feelings of disqualification, frustration, anger and worthlessness, as well as causing social identity conflicts¹³, exposing the worker to other diseases, such as depression. Given this, it is understood that people affected by rheumatic diseases can have their identity affected. The reality experienced by people affected by rheumatic diseases may justify the fact that they have a higher prevalence of depressive and anxiety disorders than is usually found in the general population¹⁴.

In the "Socialization and Community Life Domain" the participants faced barriers in the activities and participation of "Relationships with strangers", "Intimate relationships" and "Socialization". The psychosocial impacts were mentioned in other studies, which showed a weakening in the social participation of people affected by rheumatic diseases^{5,9}. The restrictions caused by rheumatic diseases in the performance of people's daily activities negatively impact their emotional state, social relationships and quality of life⁴.

In view of the compromises in health conditions and in the social and occupational participation of people with rheumatic diseases participating in this study, it is understood that the occupational therapist in their interventions seeks to delay new symptoms, minimize sequelae, reduce disabilities and the impacts of the disease on the functionality of these people⁴, as well as adapting or potentiating new occupational engagements, in order to allow people, even with a physical and emotional condition limited by the disease, to find meanings to continue being participatory in significant occupations.

The occupational therapist is a professional that must compose the multidisciplinary team that accompanies people affected by rheumatic diseases. Because the interventions of this professional are not exclusive to the treatment of pain, but general to the profession, that is, they seek to increase independence, autonomy, self-esteem, maintain/reestablish competence and occupational roles, maximize function, recover the balance of daily activities and expand resources for occupational engagement¹⁵.

CONCLUSION

The impairments caused by rheumatic disease generate restrictions on physical capacities, so people affected by this disease end up suffering damage in the performance of their ADL, IADL, work and leisure activities, causing psycho-emotional impacts on social and occupational participation.

Understanding the reality experienced by these people is important for health professionals to qualify their assistance and the care provided. For Occupational Therapy, the main goal to be achieved with the person being monitored is social and occupational participation, depending on any pathology, promoting actions and interventions that contribute to the improvement in the quality of life and consequently to the health of this population.

The application of the IF-Br made it possible to identify the functional impacts that the rheumatic disease can cause to people, and that it becomes useful for its application by occupational therapists to outline their intervention plan, as long as it relates to the areas and contexts of the work. occupational performance and human occupation.

The small number of participants and the lack of publications that use the IF-Br, especially related to rheumatic diseases can be considered limitations of this study. It is suggested that other professionals apply the IF-Br relating it to rheumatic diseases and that new studies be developed with larger samples.

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CONTRIBUTION

Bruna Tainá Bordin Camponogara participated in the design, collection and analysis of data, writing and revision. **Luiza Lima da Silva, Caroline da Rosa Mendes, Nathalie da Costa Nascimento, Miriam Cabrera Corvelo Delboni** contributed to the design and writing. **Aline Sarturi Ponte** collaborated in the writing and revision.

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