

Musculoskeletal symptomatology and quality of life of patients with work-related musculoskeletal disorders

Sintomatologia osteomuscular e qualidade de vida de portadores de distúrbios osteomusculares relacionados ao trabalho

Sintomatología osteomuscular y calidad de vida de portadores de disturbios osteomusculares relacionados al trabajo

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ABSTRACT

Objective: To analyze, based on an occupational profile, aspects of musculoskeletal symptoms and quality of life (QoL) of workers reported as having work-related musculoskeletal disorders (MSDs) in the state of Sergipe. **Methods:** The research was carried out between July/2013 and July/2014 and used the Nordic Musculoskeletal and SF-36 questionnaires in 56 volunteers. **Results:** We observed a greater severity of symptoms in the region of the shoulders and neck, and QoL low average in all areas, with significant relationship between sex and symptoms in the upper limbs, and between mental and physical components of QoL and symptomatology of shoulders and fists. **Final thoughts:** This research had methodological limitations related to the small number of individuals in the sample. However, it was still possible to achieve the goals through the analysis of occupational profile, musculoskeletal symptoms and QoL of workers flagged as bearers of MSDs in state of Sergipe. MSD patients' QoL is reduced, though its relationship with the symptoms of the disease needs to be investigated further.

Keywords: Cumulative Trauma Disorders; Quality of Life; Occupational Health.

RESUMO

Objetivo: Analisar, a partir de um perfil ocupacional, os aspectos da sintomatologia osteomuscular e da qualidade de vida (QV) de trabalhadores notificados como portadores de distúrbios osteomusculares relacionados ao trabalho (DORT) no estado de Sergipe. **Métodos:** A pesquisa foi realizada entre os meses de julho/2013 e julho/2014 e utilizou-se os questionários Nórdico de Sintomas Osteomusculares e o SF-36, em 56 voluntários. **Resultados:** Observou-se maior severidade dos sintomas na região dos ombros e cervical, e baixas médias de QV em todos os domínios, com relação significativa entre sexo e sintomatologia nos membros superiores, e entre componentes mentais e físicos da QV e a sintomatologia em ombros e punhos. **Considerações finais:** Esta pesquisa possuiu limites metodológicos relacionados ao reduzido número de indivíduos da amostra, no entanto, ainda assim, foi possível atingir seus objetivos, através da análise do perfil ocupacional, da sintomatologia osteomuscular e da QV dos trabalhadores notificados como portadores de DORT no estado de Sergipe. A QV do portador de DORT é reduzida, embora sua relação com a sintomatologia da doença precise ser investigada mais profundamente.

Palavras-chave: Transtornos Traumáticos Cumulativos; Qualidade de Vida; Saúde do Trabalhador.

RESUMEN

Objetivo: Analizar los aspectos de la sintomatología osteomuscular y la Calidad de Vida (CV) de trabajadores clasificados como portadores de Disturbios Osteomusculares Relacionados al Trabajo (DORT) en el estado de Sergipe. **Métodos:** Investigación conducida entre julio/2013 y julio/2014 en la cual se utilizó los cuestionarios Nórdico de Síntomas Osteomusculares y el SF-36 en 56 voluntarios. **Resultados:** Prevalencia de síntomas en el área de los hombros y cervical, y bajas tajas de CV en todos los dominios, con relación significativa entre sexo y sintomatología en los miembros superiores, y entre componentes mentales y físicos (CV) y la sintomatología en hombros y muñeca. **Consideraciones finales:** La investigación tubo limitaciones metodológicas relacionadas al reducido número de individuos de la amuestra. La CV del portador de DORT es reducida, a pesar de su relación con la sintomatología de la enfermedad necesitar una investigación más profundizada.

Palabras clave: Trastornos Traumáticos Cumulativos; Calidades de Vida; Salud Laboral.

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Submitted on 02/11/2016.

Accepted on 09/09/2016.

DOI: 10.5935/1414-8145.20160103

INTRODUCTION

For the International Labour Organization (ILO), the work-related diseases are those that occur as a result of "exposure to risk factors under a professional activity"¹. They are considered hidden epidemics that cause 2.02 million deaths per year and represent financial losses for companies and workers, as well as for the economic development of countries, since it causes a loss of 4% of the global gross domestic product (GDP)¹.

Of the diseases that have a strong association with the work, we can highlight the musculoskeletal disorders (MSDs), which group different diseases in different body segments, are directly related to the movement at work, and have in common the expression of pain with variable intensity². Psychosocial factors related to the working environment play an additional role in the development of MSDs, especially monotonous work, controlled by productivity tension and with low social support. The long cycles of work that required a variety of movements, were replaced by machines in production lines, handled with shorter cycles, but with more tasks and more repetitive and monotonous activities³.

The MSD symptoms create sensations of pain, fatigue and paraesthesia, especially in shoulder and upper limbs, often accompanied by nerve or muscle tendon lesions⁴.

Thus, besides the direct effect on the health of the worker and the incapacity for work, MSDs impose a large socioeconomic burden due to extensive use of health services, absenteeism due to illness, disability pensions and loss of productivity⁵.

We believe that the relationship between health and illness at work is directly related to quality of life (QoL). QoL is understood as "the individuals' perception of their position in life in the context of culture and value systems in which they live and in relation to their goals, expectations, standards and concerns"⁶. So, the concept of QoL is based in different perspectives, and is directly associated with health, and also close to individual satisfaction level in their affective, family, environmental and social lives⁷.

The strong association between MSDs and QoL is explained by the reduction of work capability the worker is exposed, which affects psychosocial symptoms such as loneliness, sadness, anxiety and depression states, in addition to the feeling of helplessness in the face of disease. MSDs cause consequences, ranging from an inability to perform the labor activity which first caused the disorder, to execution of simple tasks of daily living such as housework and self-care activities⁵.

The assessment of QoL in patients with chronic diseases such as MSDs became one of the public health goals, since this strategy allows the improvement of actions for the prevention and treatment of disease, as a form of subsidy for public health policies because there is the possibility of assessing the patients as social beings, from their physical, mental and social aspects⁸.

Given the relevance of MSDs in health, and the impact that the disease can cause to the society, the goal of this study was to analyze, from an occupational profile, aspects of musculoskeletal symptomatology and QoL of workers identified as patients with this condition in the state of Sergipe.

Thus, this study becomes relevant in the context of occupational health, since it uses the individual interview of workers as a tool for Quality of Life and musculoskeletal symptoms research/assessment, which enhances the quality of the gathered data.

METHODS

This is a study of case series with a quantitative approach, conducted between the months of July/2013 to July/2014. The sample consisted of employees with proven diagnosis of MSDs, referenced in the Worker's Health Reference Centers (CEREST) the state of Sergipe, located in Aracaju, Lagarto and Canindé de Sao Francisco regions, in 2013. All workers referenced in CEREST were included in the study. Those who agreed to participate voluntarily signed the Consent Form prepared based on the assumptions of the Brazil platform, to which this project was submitted and approved by Opinion No. 392883. The proposed methods sought to investigate the reported cases of MSDs in the state of Sergipe, with the outcome of the evaluation of the QoL of these individuals.

The Research Files of Diseases Related to Labor, which are used by the Ministry of Health as a basis for reporting MSD cases in the Notifiable Diseases Information System (SINAN) were used as the data source for this study, since they could provide guiding information to identify the participants and occupational characteristics of the sample, such as personal data, occupation, specific diagnosis, working hours and the possibility of working breaks.

After identification, the workers who joined the study were contacted individually in their homes by trained investigators for the application of the study instruments: the questionnaire to assess QoL, Short Form-36 (SF-36), and the Nordic Questionnaire for Musculoskeletal Symptoms (QNSO). The SF-36 has been translated and validated in Brazil in 1999, and contains 11 questions with 36 items, which comprise eight domains grouped as physical (functional capability, physical aspects, pain, general health state), and mental parts (vitality, social and emotional aspects, and mental health), and question for comparison between their current perception of health and their perception from a year ago. The variables are evaluated through a score for each domain, ranging from 0 to 100, 0 being the worst and 100 the best⁹. Domains were classified according to values over 70 indicate ideal or high QoL; values below 70 were considered low or not-ideal QoL levels¹⁰.

The QNSO is a questionnaire translated to Portuguese and validated for use in 2002¹¹, and consists of questions of multiple or binary choices that describe and ask about the occurrence of musculoskeletal symptoms in different anatomical regions in which those are more common (neck, shoulder, arm, elbow, forearm, wrist, hands/fingers, dorsal and lumbar spine, hip and lower limbs). Following the author's criteria, each volunteer answered the questionnaire considering the 12 months and the seven days preceding the assessment and also reported any impediment to perform their routine activities in the last year due to symptoms^{4,11}.

In QNSO there is also a section that allows the measurement of demographic (gender, age, weight, height, number of dependent children, marital status), occupational (left/right dexterity preference, occupation, how time in this employment, how many working hours per day/week), lifestyle and habits variables (smoking, other professional activities), as well as the "non-occupational risk" variable, which assesses whether the individual is exposed to risk factors for musculoskeletal disorders from causes unrelated to work. Apart from these, there is a specific question aiming to investigate the perception of the subjects about the association between symptoms and the practice of their professional activity.

The measurement of symptom severity was evaluated by indices in each anatomical region, ranging from 0 to 4, as follows: level 0 represents the absence of symptoms; level 1 means symptoms were reported in the previous 12 months or in the seven days prior to the assessment; level 2, for reports of symptoms in the 12 months and the last seven days; level 3 in case of reports of symptoms within seven days before the assessment or in the previous 12 months and impediment to perform activities; level 4 for records of symptoms during the last 12 months and in the seven days before study and impediment to perform activities. These indices are presented by mean and standard deviation calculations⁷.

Statistical analysis was performed using frequency distribution of socio-occupational variables of the participants. We calculated the average values of each domain and QoL total scores. The QNSO variables were analyzed using descriptive statistics (mean, standard deviation, simple frequency and percentage). The scores provide the level of severity; the higher the average (close to the maximum value: 4), the higher the severity of symptoms. To investigate the association between QNSO, SF36 and the occupational variables, the Mann-Whitney and Kruskal Wallis nonparametric tests with significance level of 95% were made because, due to the small number of participants, there was no possible way to perform mean comparison through T or ANOVA parametric tests. To check the difference between the proportions, in the case of categorical variables, we used the chi-square test with 0.05 of significance level.

RESULTS

The analysis of report files indicated that in 2013, 56 cases of MSDs were reported in Sergipe (51 in Aracaju, 4 in Canindé do São Francisco and 1 in Lagarto). However, there was a random loss in the sample, since the questionnaires were administered to 39 individuals, representing 69.64% of the total. Of the 17 (30.36%) remaining workers, 4 (23.53%), could not be found by the researchers, and 13 (76.47%), did not agree to participate in study. The sociodemographic and occupational profile of individuals was generated from the files available. The average age was 43.33 years (± 11.03); 79.5% of subjects were female; 69.2% of the workers had secondary school education, 15.4% had primary school education level and the same quantity had higher education level; 92.3% had a profession; 97.4% had a workload of more than eight hours a day; 89.7% reported having no break during work activities; and 92.6% did not present non-occupational risk factor burden. The affected body segments with the highest prevalence were the upper limbs (87.2%); and most workers (87.2%) reported a relationship between pain symptoms and work; all of the workers assessed recognized themselves as patients suffering from MSDs. Work absenteeism was reported in 87.9% of cases, and workload reduction in the case of 76.9% of workers.

We registered 30 different professions as participants' occupation, all of them related to the common services area, such as commerce, cleaning, construction, food, IT and health.

QoL and musculoskeletal symptoms assessment

The variable that addresses the severity level of symptoms was described by mean and standard deviation, by anatomic area of the body. SF36 questionnaire was used to assess QoL, measuring average values, standard deviation and the total score of domains (Table 1).

Regarding their perception about their own health, only 1 (2.6%) participant reported that a "much better" health state, 8 (20.5%) volunteers reported they consider their health "a little better", 14 (35.9%) said it is "almost the same", 10 (25.6%) said they were "much worse", and 6 (15.4%) reported it was "a little worse".

QoL domains average values from SF-36 were compared using *Kruskal Wallis* test ($p < 0.05\%$) for occupational variables (disease site, work hours and breaks) and sociodemographic characteristics (age and education), while the Mann Whitney test was used for the gender variable. The results were significant in the relationship between gender and *Social Aspects*, *Vitality* domains, and the *Total Score*, where men presented higher averages; in the relationship between Education, *Functional Capability* and *Emotional Aspects*, in which individuals with higher and secondary education had the highest averages, respectively;

Table 1. Descriptive analysis of symptom severity and Quality of Life levels (SF-36) of workers with MSDs - CEREST-SE (2013)

Severity of symptoms by anatomic area	Average	Standard Deviation
Cervical	2.28	1.57
Shoulders	2.51	1.65
Arms	2.00	1.79
Elbows	2.05	1.77
Forearms	1.69	1.74
Wrist	2.23	1.79
Dorsal	0.90	1.50
Lumbar	1.62	1.74
Lower limbs	1.49	1.65
SF-36 Domains	Average	Standard Deviation
Limitation by emotional aspects	23.07	35.17
Limitation by physical aspects	23.20	31.52
Social aspects	53.52	33.31
Functional capability	48.33	25.37
Pain	25.55	20.76
Health state	29.44	21.62
Mental health	49.02	24.42
Vitality	45.70	28.55
Total score	298.10	130.47

and between age and *Emotional Aspects*, where we observed that the subjects of 45 years or older presented highest average scores (Table 2).

Severity assessment of musculoskeletal symptoms in relation to sociodemographic and occupational variables

The assessment of the severity of symptoms and sociodemographic and occupational variables revealed a significant relationship only between the gender variable and the severity level in arms, elbows, forearms and wrists (Table 3). Female patients presented higher averages than men.

Severity assessment of symptoms compared do Quality of Life

The comparative analysis between SF36 and QNSO was done using SF36 domains and the symptom severity levels for each body area. We used the Mann-Whitney test, with significance level of 0.05 (Table 4). We found significant differences in the severity level of the wrists only in relation to the low level found in *Vitality* domain. It was also possible to

Table 2. Comparison of average values between SF36 domains according to sociodemographic characteristics of people with MSDs - CEREST-SE (2013)

Domain	Gender Rank average	p*
Total Score	Men = 27.63 Women = 13.03	0.030
Social Aspects	Men = 31.44 Women = 17.05	0.000
Vitality	Men = 27.63 Women = 13.03	0.020
	Education (Rank Average)	p**
Functional Capability	Primary = 26.42 Secondary = 16.85 Higher = 27.75	0.030
Limitation due to Emotional Aspects	Primary = 29.33 Secondary = 19.59 Higher = 12.50	0.010
	Age (Rank Average)	p**
Limitation due to Emotional Aspects	24-34 years = 12.5 35-45 years = 18.15 > 45 years = 24.78	0.010

* Mann-Whitney; ** KruskalWalls tests (p > 0.05).

Table 3. Severity assessment of symptoms according to gender of patients. CEREST-SE (2013)

Body area severity level	Gender (Rank average)	p
Severity level/Arms	Men = 11.88 Women = 23.10	0.010
Severity level/Elbows	Men = 11.69 Women = 22.15	0.030
Severity level/Forearms	Men = 13.19 Women = 21.76	0.040
Severity level/Wrists	Men = 13.06 Women = 21.79	0.030

observe significant differences between the severity level of shoulders in relation to low levels of *Functional Capability* and *Physical Aspects*.

DISCUSSION

In this study, we observed higher severity levels in the shoulder (2.51), and in wrists areas (2.23). These results do not support study¹¹ that who found rates below 1 for all the anatomic regions. However, it is worthy to note that the research done by these authors assessed the employees of a bank, with a mean

Table 4. Comparative analysis of the average severity levels of symptoms according to SF-36 domains of patients. CEREST-SE (2013)

Body area severity level	SF-36 Domain (Rank average)	p
Severity level/Wrists	Low vitality level = 22 High vitality level = 12.25	0.010*
Severity level/Shoulders	Low Functional Capability level = 22.19 High Functional Capability level = 12.50	0.010*
Severity level/Shoulders	Low Physical Aspects level = 21.5 High Physical Aspects level = 9.90	0.020*

* Mann-Whitney test ($p > 0.05$).

age of $39 \pm (6.1)$ years, emphasizing only a single professional category, which favors the divergence between results, as this study analyzed workers from different categories, although similar in age.

Also, the individuals were on sick leave from work, which was possibly responsible for lower rates¹¹ when compared to this study, in which, as noted in the collection of occupational data, 87.9% of workers were not in labor activity. It is worth considering what is called the "healthy worker effect"¹², which can be found in the previous survey, taking into account that the workers who do not leave their labor activities are probably healthier when compared to the ones under medical leave.

In the analysis of the relation between the severity of symptoms and the sociodemographic and occupational characteristics of the participants, the results were significant only regarding the gender variable and the severity level in all segments of the upper limbs, except for shoulders. It is known that the higher prevalence of MSDs is related to the upper body area, especially the upper limbs. The symptoms in these regions would be directly related to work ergonomics¹³. The pain in the upper limbs is very common, with a prevalence in the general population worldwide up to 47%¹⁴.

We also believe that women are more susceptible to MSDs, because they have fewer muscle fibers, which reduces their muscle strength by 33% when compared to men; this reduces their energy storage capability, which consequently causes faster muscle fatigue¹⁵.

It should also be relevant to highlight the fact that the "non-occupational risk" factor was found in 92.3% of the sample, which demonstrates that most of the participants perform activities especially related to the upper limbs that can aggravate the symptoms of the disorder. However, we believe that this factor does not decharacterize the relation between work and illness, since other issues such as a high workload and lack work breaks were also found in this study. Moreover, this result is also related to the chronic nature of the disease, which contributes in hindering the execution of the work activity that caused the disease, as well as of any other daily life activities^{16,17}.

Most of the study participants (87.2%) reported that their diagnosis was directly related to their work. From this, it appears that the employee/patient believes in a relation between work and disease, which reduces the possibility of neglecting its symptoms. The refuse in perceiving a relation between illness and work brings serious consequences to individuals' health, as this exposes them to incorrect diagnoses and ineffective treatments¹⁴.

In this study, 89.7% of the assessed workers reported they were on sick leave from work due to symptoms of MSDs. This can be considered as a factor that denotes the chronicity of the disease. The difficulty of returning to work is related to functional limitations characteristic of the disorder and the lack of effective occupational rehabilitation programs, and the lack of interconnection between different administrative and political levels¹⁸.

The fact that some workers did not report any reduction on workload due to pain may represent a productivity demand imposed by companies. These workers become afraid of unemployment and, therefore, try to "adapt" themselves to health problems, living with them without harming their labor activities¹⁹.

It was associated the lack between symptom severity in body areas and other sociodemographic and occupational. However, the bigger the workload, the higher are the rates of repetitive movement, with also less time for muscle resting, and so, higher are the odds for acquiring musculoskeletal lesions²⁰⁻²².

The QoL assessment embraces different aspects, and its definition is not uniform. QoL is separated from one's health status by perspectives like mental health, physical and social functions which are interlaced and, in an abstract way, can establish comfort and tolerance personal standards²³.

In this study the results revealed low averages in all the domains. The lowest level found was in *Emotional Aspects* (23.07), while *Social Aspects* (53.52) had the highest score. As for QoL total score, which can vary from 0 to 800, we could also observe a low average (298.10), which indicates that the MSD patients assessed presented low QoL levels in general. It is worthy to mention that 14 workers electable for the study refused to participate. We can infer that the study participants might be the individuals with the lowest QoL levels.

The presence or absence of morbidities is included in QoL, but this factor is not the only one to be observed. The analysis of the low scores in all domains of the SF-36 implies that QoL is related to health, but also to how the individuals perceive their general health, and how physical, psychological and socially, their daily activities are being affected. QoL directly affects individuals' relationship with family and friends, as well as their social life^{9,24}.

In the analysis of the domains of the SF-36 and the sociodemographic and occupational aspects, we could find a statistically significant difference in the relation between gender and the areas related to social aspects, vitality and the total score. The QoL average in patients with MSDs were higher in men than in women, which could prove that the men's social life is less affected than women's; and that men still feel more willing to perform their daily activities, even when affected by MSDs. This result can be compared to the one study²⁵ that applied SF-36 to assess QoL and its relation to occupational aspects in Brazilian judges, and found that women have, in general, lower scores compared to men.

We believe that the relation between QoL *total score*, the *Social Aspects* domain and *Vitality*, for the female gender, may be linked to characteristics common to the female universe, that biological differences in relation to men, as well as their new roles in society, promote an accumulation of responsibilities and functions, which could exclude the female workers from social living and cause a reduction of their vitality²⁶. In addition to pain, the uncertainty about the future regarding their physical abilities and the result of the treatments make women workers to experience strong anguish feelings⁵.

The education levels presented significant differences in QoL of studied individuals, regarding the *Functional Capability* and *Limitation due to Emotional Aspects* areas. From this result, we can infer that workers with higher education levels were less affected by the disease, from functional point of view, compared to individuals with lower educational level. This result may be related to the type of occupation of each participant, since those with higher level usually have jobs that are less exposed to factors such as lack of ergonomics, repeatability and excessive loads. However, we observed that workers with primary education level presented better averages in the *Functional Capability* area than the participants with secondary education, and no conclusive explanation for this result could be pointed.

We observed in this study, however, a significant association between the level of education and the *Limitation due to Emotional Aspects* domain. This means that people with lower level of education (elementary school) are less emotionally affected by the disease, or in other words, have greater emotional control in coping with the many limitations imposed by MSDs than those who had secondary and higher education. In this

sense, the results differ in part from a study in which the authors²⁶ stated that the educational level would be directly related to the individuals' QoL. Apparently, people who had only primary education are more conformed compared to those with higher education levels. Perhaps there are greater expectations about performance at work for these groups in relation to the lower educational level group, and this could affect them emotionally.

In this study, the mean age of 43.33 years (± 11.03) is a factor discussed by Houvet and Obert², who assert that, in cases of MSDs, age is related to cumulative exposure to harmful agents in workplaces, and, of course, is also directly related to physiological reduction of functional capabilities.

Furthermore, we could notice that individuals of 45 years of age or older were less emotionally affected than younger participants. This result does not support a study²⁷ that stated there was no consensus in the literature on the relation between QoL and age, and believed that the closest factor for this relation would be each individual's physical condition. However, other study with older individuals, as well as women, also demonstrate greater resilience, a fact that could explain the better scores in the group of individuals older than 45 years of age²⁸.

Another domain worthy to be mentioned is *Pain*. Although no significant relation between this and sociodemographic and occupational aspects was found, we can infer a close relation between *Pain* and loss of QoL. Pain is an invisible symptom which could raise suspicion from colleagues and managers since the idea that the worker might be faking illness to take time off work would persist²⁹.

This inability state that starts into the work environment, impact workers' personal life and cause a reduction in individuals' QoL has been highlighted by literature²⁹. MSDs victims feel powerless and become depressed and anxious³⁰. There is a research³¹ of QoL with Brazilian population which claims that people who confirmed to be suffering from a chronic disease had lower QoL average levels than the other participants. This reaffirms the idea that people with MSDs are, in general, people with low QoL.

The fact that no significant difference between QoL averages and other demographic and occupational characteristics of respondents was found may suggest that a low QoL score is uniformly present in these aspects of the sample. When comparing QoL, there was no significant difference average levels and gender, however the study found very similar QoL scores in different age groups, which could mean that aspects other than age could affect the QoL of individuals⁷.

The fact that only one subject reported a "much better" health status than a year ago, is associated to the chronic nature of the disease and its emotional implications. The MSDs have a strong character of chronicity, which implies in a limitation to practice any labor activity that causes the disease, as well as any other daily living activities^{16,17}.

We also observed the association between severity level in upper limbs (shoulders and wrists), and 3 QoL domains, 2 of them related to physical components (*Functional Capability* and *Physical Aspects*), and 1 related to mental areas (*Vitality*). These body segments which are compromised by chronic pain are what probably lead to patients' absence from work and the reduction in physical and mental areas of QoL.

The mental component was greatly affected by the symptoms found in upper body segments such as shoulders and arms. Patients with chronic pain, found a significant relation between low quality of life averages and reduced physical function of individuals^{32,33}.

Although we were not able to find associations between all the QoL domains and severity assessment, we believe that SF-36 low scores are also connected to the main characteristic of MSDs: the pain, which was present in at least one of the body segments previously described and which, therefore, is also the cause of the work absenteeism reported by the participants in this study. Pain is one of the main symptoms of MSDs, is the cause of human suffering, and leads to physical and psychosocial disorders which, as a result, reduce victims' QoL³⁴. These factors affect from individuals' performance at work, to their social and family relationships. However, correlating the level of severity of a particular body segment and stating how much it interferes in a specific aspect of QoL may be premature, since disability and disease coping mode are individual characteristics.

A personality can interfere with the ways of coping with MSDs. A situation of occupational disorder that may be considered easy to overcome to one person, to another can be seen as stressful and uncomfortable³⁵. Thus, individuals' resilience in face of an adversity can affect the severity of the symptoms and therefore in their QoL. It is also worthy to mention that the workers who experience long periods of absence from work have less prospect for their future careers, which also affects their relationships in personal lives¹⁹.

With this research, we could observe that only 56 MSD cases were reported in Sergipe in 2013. This result points to an underreporting of data. The responsibility of Government regarding workers' health is historically fragmented³⁶. There are several bodies related to labor and employment, social security and health that have different functions, but they are often not connected efficiently. This results in poor outcomes for this population, since it hinders possible progress in the area. The direct involvement of Primary Care bodies is essential, because the growth of informal work causes the workers to depart from their formal bonds with the Social Security system, or the Ministry of Labour, to be assimilated therefore into the Primary Health Care network³⁷.

FINAL CONSIDERATIONS

This research had methodological limitations related to the small number of individuals in the sample. However, it was still possible to achieve the objectives of the study through the analysis of occupational profile, musculoskeletal symptoms and QoL of most of workers reported as MSDs patients in the state of Sergipe. The MSDs patients' QoL is clearly reduced, although its relation with disease symptoms requires further investigation.

We suggest further research, covering a larger number of individuals, divided into homogeneous groups of age, gender and occupation, as an attempt to provide a better assessment of the relation between the symptoms of MSDs and the quality of life of workers.

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