Original Article

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Elderly caregivers at long-stay institutions: quality of life and temporomandibular dysfunction

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Abstract

Aim: To assess the profile, quality of life and the presence of Temporomandibular Disorders (TMD) in elderly caregivers. **Methods:** Thirty-nine caregivers who worked in six long-stay institutions for the elderly in three different municipalities participated in the study. The research instruments were the WHOQOL-BREF, the Fonseca questionnaire and the socio-demographic questionnaire. The Kruskal-Wallis test with the Dunn's correction was performed at a level of 5%. **Results:** Females accounted for 94.9% of the sample. The average monthly wage was R$ 832.00. The average working week was 39 hours. The WHOQOL dominions showed the following averages: 74.25 Physical; 70.33 Psychological; 65.79 Social Affairs; 58.38 Environment. Mild DTM was present in 43.6% of the caregivers, of which 7.7% were moderate, 5.2% severe, 23.0% of the professionals were asymptomatic and 20.5% did not answer. The association between TMD and the quality of life showed p=0.6752. **Conclusions:** It was concluded that there was no relationship between the quality of life and symptoms of temporomandibular dysfunction among the caregivers of elderly in this study.

Keywords: caregivers; aged; quality of life; temporomandibular joint dysfunction syndrome.

Introduction

Currently in Brazil, more than 12% of the population is considered elderly. Data from the 2010 census showed that the Brazilian population consists of about 20 million people aged over 60 years. The percentage of individuals aged over 65 years (7.4%) is higher than the percentage of the group of children 0-4 years of age (7.3%)[1].

With the increasing elderly population, chronic degenerative diseases that compromise the autonomy of the elderly become evident, requiring the presence of an individual caregiver who can be informal (family member or friend) or formal (professional)[2]. Regardless of the relationship of the caregiver to longevity, their primary function is the provision of care to supplement the temporary or permanent functional impairment[3].

The most common difficulties faced by these caregivers are work overload, loss of purchasing power, social isolation, physical and psychiatric social burden[4]. In addition, concerning the interpretation of activities related to the welfare of the elderly, the caregiver might have restrictions, affecting their quality of life[5].

Physical-psychological disorders are commonly found in people who are willing to treat the elderly. Some emotional disturbances such as anxiety, irritability, resentment and stress usually are frequent findings in the lives of these employees.

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A consequence of these changes has been studied since the 50s, showing that they may predispose or act as etiological factors for temporomandibular disorders (TMD). Such changes may retain or be a consequence of TMD[6].

TMD refers to a group of chronic orofacial disorders affecting the masticatory muscles, temporomandibular joints (TMJ) and the surrounding structures, and may change the performance of certain functions of the stomatognathic system, such as chewing and speaking[7-8]. The signs and characteristic symptoms of this disorder are mainly pain and tenderness in the TMJ and muscles of mastication, asymmetry and restriction of mandibular movements and joint noises[7-8]. TMD has a multifactorial etiology, including parafunctional habits like bruxism, teeth clenching, occlusal factors, traumatic or degenerative lesions of the TMJ, unbalanced action of the masticatory muscles. In addition, some psychological factors such as stress and anxiety may predispose to this dysfunction[8-9].

People exposed to various stressors, such as caregivers to the elderly commonly show an increase of muscle over-activity, which may predispose to TMD[10].

Among the changes caused by TMD, pain in particular can interfere with the daily activities of the affected individual, leading to a negative effect on social function and emotional health[11-13].

The present study aimed to investigate the presence of Temporomandibular Joint Dysfunction in caregivers of Long-stay Institutions for the Elderly (LSIE) and relate it to the quality of life of these professionals.

Material and methods

A cross-sectional survey study in all Long-stay Institutions for the Elderly (LSIE), of three municipalities (Araçatuba, Birigüi and Penápolis), totaling six entities was conducted.

After prior authorization from their leaders, all professionals who work as caregivers in these institutions were invited to participate in the survey in the following manner: no sampling was performed but a census of the target population.

The study included caregivers who agreed to participate, signed the consent form and completed the questionnaire correctly.

For the collection of data, the following self-applied instruments were used: sociodemographic questionnaire containing data such as age, sex, marital status, professional training, time on the job in the institution, salary and weekly workload.

The WHOQOL-BREF questionnaire (WHO, 1994, translated into Portuguese by Fleck, 1998) was employed to investigate Quality of Life. This instrument was drafted by the study group on the quality of life of the Division of Mental Health of the WHO (1994). Initially, the WHOQOL-100 was developed, containing 100 questions. However, with the need for tools for rapid implementation for large epidemiological studies, the WHOQOL-BREF was developed. It is an abbreviated form containing the 26 questions that provided the best psychometric results of the WHOQOL-100, meeting the criteria for scientific research. The questionnaire consists of two general questions about the participant's perception of their quality of life and their health and over 24 questions relating to four domains: physical, psychological, social relationships and environment[14]. The scores represent a profile of the quality of life of the participants. It has a positive relationship to the quality of life, in other words, the higher the score, the higher the quality of life. This score is converted to a scale ranging from 0 to 100[15].

A questionnaire developed by Fonseca et al.[16] was used for evaluating TMD. It allows characterizing the symptoms of TMD and thus classifies patients according to their severity. Its main advantage when compared to the research diagnostic criteria for temporomandibular disorders, called DRC or the Helkimo index, is the lower time of application and therefore a lower cost[17].

There are three possible answers for each question of the questionnaire, each one with a score. Adding the scores, an anamnesis index is obtained, which allows classifying the severity of the symptoms: without TMD (0 to 15 points), mild TMD (20 to 45 points), moderate TMD (50 to 65) and severe TMD (70-100 points).

The professionals signed a free consent form, and an explanation on the filling of the instruments was performed.

The studied variables were gender, age, marital status, weekly working hours, vocational training (education), expressed compensation, assessment of quality of life and TMD, the latter being the outcome of interest in this research. Socioeconomic and demographic variables were used to characterize only the sample, without the inclusion of confounding variables in the analyses.

Data analysis was performed by applying a Kruskal-Wallis statistical test with Dunn's correction at a significance level of 5% to determine the association between the variables using the BioStat, version 5.0 statistical software.

The study was approved by the Ethics Committee of the Araçatuba School of Dentistry (Process 01916-2011), Paulista State University, Brazil.

Results

Thirty-nine elderly caregivers consented to participate in the study. Of these, 94.9% were female and 5.1% male. The average age was 38.7 years, ranging between 24 and 60 years. 51.3% were married, 28.2% single, separated and divorced represented 10.3% each.

The average monthly wage was R$ 832.00, ranging between R$ 570.00 and R$ 1,190.00. The average weekly working hours were 39.0 hours ± 7.9 SD. Nursing technicians represented 28.2% (n=11) of the participants, followed by nursing at 20.5% (n=8). Table 1 demonstrates the training of the caregivers.

Regarding the quality of life domains, Figure 1 shows the mean scores. The environment domain presented the worst

Table 1 – Professional training reported by caregivers of elders of the six long-stay institutions for the aged research participants - Araçatuba, 2011.

Professional Training	n	%
Social Worker	1	2.6
Nursing Assistant	8	20.5
Nurse	3	7.7
Elementary School	5	12.8
High School	4	10.3
Physiotherapist	1	2.6
Psychology	1	2.6
Nursing Technician	11	28.2
No response	5	12.8
Total	39	100.0

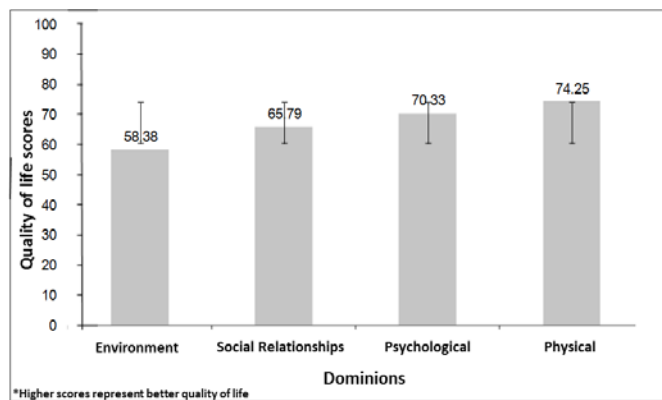

Fig. 1 – Mean scores and standard deviations of the domains of quality of life measured by the WHOQOL-BREF for caregivers of institutionalized elderly - Araçatuba, 2011.

results regarding the quality of life of the caregivers (Figure 1). At that moment were exposed the facets that comprise the environmental domain of the WHOQOL-BREF: physical safety and protection, home environment, financial resources, availability and quality of health care and social opportunity to acquire new information and skills, participation and opportunities for recreation/leisure and physical environment (pollution, noise, traffic, weather and transportation). All the facets that make up the four domains of the WHOQOL-BREF are shown in Figure 2, with their scores.

In general, the caregivers participating in this study had a reasonable quality of life (Figures 1 and 2), with lower scores for recreation and leisure activities and remuneration obtained with work (Figure 2).

Out of the caregivers, 43.6% had mild TMD, 7.7% had moderate, 5.2% had severe, 23.0% of the professionals were asymptomatic and 20.5% did not answer, as shown in Figure 3.

Regarding the TMD, the mean score of the assessed quality of life using the WHOQOL-BREF among caregivers who reported no symptoms was 68.8 ($\pm$10.3), light TMD 69.5 ($\pm$7.9), moderate TMD 70.2 ($\pm$15.5) and severe TMD 60.6 ($\pm$14.9).

The main finding of this study was that there was no significant association between the quality of life and temporomandibular dysfunction. When comparing the TMD outcome variable, regardless of its severity with the quality of life, the p-value was 0.6752.

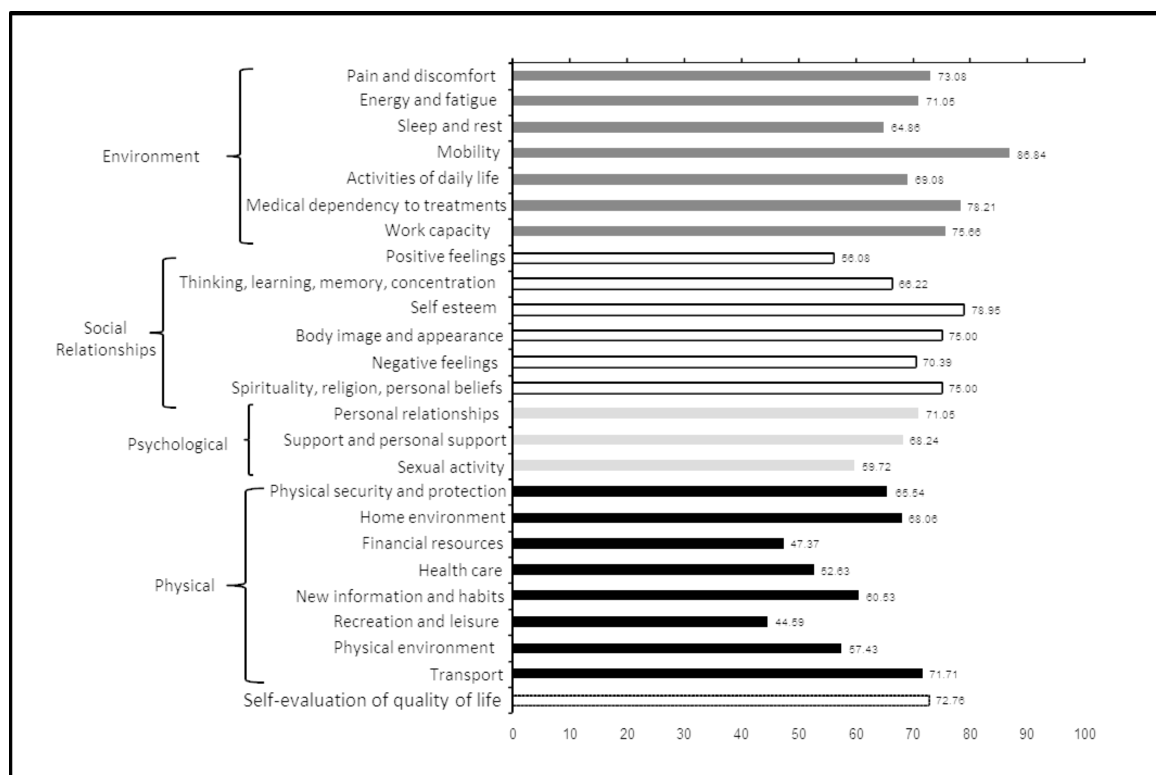

Fig. 2 –Mean scores of the facets of the four domains of the quality of life measured by the WHOQOL-BREF for caregivers of institutionalized elderly - Araçatuba, 2011.

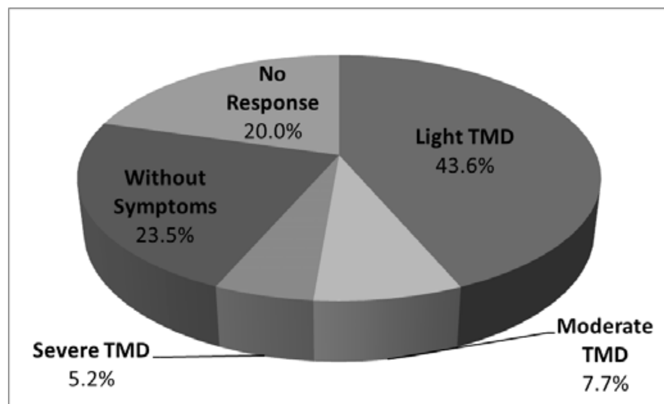

Fig. 3: Percentage distribution of the classification of professionals according to the severity of the symptoms of TMD by the Fonseca Questionnaire - Araçatuba, 2011.

Discussion

In the present study, it was found that the social and demographic characteristics of the study population were similar to those found in other studies of institutionalized caregivers' profile.

The prevalence of women in the practice of elderly care is common in the literature[18-19]. The increasing integration of women into the labor market, mainly from the second half of the twentieth century can be explained by the deterioration of wages, leading the women to help in the family budget, and their increasing participation in public spaces, especially in nursing which is historically considered a female profession[18]. The cultural issue that sees the care of women with children, husband and home is also seen as facilitating its adaptation to exercise care for the elderly[19].

Regarding the professional qualifications of workers, there is dissonance in relation to the dominant formation. In the present study, most caregivers have technical training in nursing, which agrees with the study of Sampaio et al.[20], who found that 57.7% of caregivers also had this training. Reis and Ceolim[18] found this function in 40% of nursing assistants[18]. Carneiro et al.[21] observed an unfavorable situation in the institutions studied in the Tocantins state, because when it comes to schooling, 9% of the caregivers were illiterate, 27.2% of the caregivers did not complete the first and second grades, and 18.2% did not complete the third grade. Thus, in their study, none of the caregivers directed their training for occupations that ordinarily attend to this public[21].

However, the current Brazilian scenario shows a large deficit in the training of professionals to care adequately for the elderly, whether at home, hospital or institutional[18].

There is no specific regulation for the caregiver profession for the elderly, which hinders the establishment of remuneration for these professionals. There is a gap in the literature that makes it difficult to compare the results obtained in this study, where the average wage was less than two minimum Brazilian wages. A low wage may lead to looking for other forms of salary compensation, contributing to the stress of these professionals.

Regarding the workload, the Board Resolution - RDC / ANVISA No. 283 of 2005 establishes a minimum to professionals working in the LSIEs, with the aim to constitute a standard of operations. Thus, the qualified technician must have a minimum workload of 20 hours per week, while the number of working hours of caregivers varies with the degree of dependency of the elderly, from 8 hours a day or a working shift[22].

Overall, the caregivers reported a good quality of life (Figure 2), which may also be found in the study conducted in Portugal (2009), in which, despite being reported as a stressful profession, caregivers did not report poor quality of life[23].

The separate evaluation of the WHOQOL facets showed that the environment was the area with the worst average, i.e., demonstrating a worse evaluation than quality of life, and participation in recreation and leisure had the worst average score appointed by the participants in this dominion (Figure 2). It is worth mentioning the importance of these activities in people's health while fighting stress, since it offers opportunities for interaction and social development, contributing to the well being of individuals while enhancing their potential and cannot be dismissed[24]. Dissatisfaction with pay was expressed as the second worst score (Figure 2), and may have consequences for job performance, leading to the demotivation of the workers with their work.

The dominion of personal relationships was the one that had the second worst ranking. Personal relationships, sexual activity and support or social support were assessed in this domain. The way individuals relate to themselves and to the people around them is an important tool to preserve their well being and therefore their quality of life. Thus the quality of life can be affected by perception, feelings and behaviors related to daily activities, and is not limited to health status only[25].

The psychological and physical domains had the best averages, the facets being positive feelings, sleep and rest with the lowest scores within these domains.

Evidences show that TMD causes an impact on the quality of life, especially when related to pain[26]. In the present study there was no relationship between the quality of life and TMD, as demonstrated by the results. The mean score obtained by the WHOQOL among caregivers that presented symptoms or not were similar.

This fact could be explained by the small number of professionals with moderate or severe TMD, i.e., the majority of professionals did not present pain symptoms. This can be seen in the positive score of the pain facet in the physical domain (Figure 2), which suggests that caregivers had no negative interference of pain related to the general state of quality of life.

However, one can observe that those professionals who presented severe TMD had the worst scores in relation to the average quality of life, thus suggesting that the pain could be related to that fact.

In relation to the issue of self-rating of the quality of life, the average score was 72.76, i.e., it may be considered a good self-perception, not influencing the development of temporomandibular disorders. The fact is that studies of patients diagnosed with this disorder indicate a worse quality

of life, especially concerning the issue of physical pain as well as sleep quality, when compared with patients without this disorder[27-28].

In view of the above, it may be concluded that there was no relationship between the quality of life and symptoms of temporomandibular dysfunction among the elderly caregivers participating in this study.

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