Association between sleep quality, pain and functioning in a Portuguese community activities program for persons aged 60 or more years: A cross-sectional study

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Introduction

Changes in sleep patterns are frequent complaints in the elderly, with potential repercussions on functioning. One of the most frequent sleep disorders is insomnia, especially in the female gender, which tends to contribute to poor sleep quality [1]. In addition to the presence of medical conditions, it is also due to sleep deprivation, namely a short sleep pattern [2]. This is manifested in the sensation of non-restorative sleep, in daytime sleepiness (naps), in the reduction of physical capacity with repercussions on daily functioning and on cognitive decline [3,4,5]. It is known that age is also a relevant factor for the decline of functional capacity, presenting the elderly high prevalence rates of chronic degenerative diseases [6], which may be associated with pain. Regardless of whether pain is perceived differently by each person, it can affect their autonomy, independence and safety, undermining their ability to perform daily activities, as well as limiting their capacity for social interaction [7]. Elderly people with pain report that this compromises their involvement in social activities such as going to church, dancing, walking, exercising, and participating in groups, as well as locomotion, dressing and hygiene care. The present study examined the association between sleep quality, pain and functioning in a Portuguese community activities program for persons aged 60 or more years.

Methodology

This was a cross-sectional study. The sample was nonprobabilistic for convenience. Participants were users of one community program of the municipality of Ílhavo (Portugal) and participated voluntarily. Participants were informed about the objectives and the conditions for participating in the study, as well as ensured of the anonymity and confidentiality of data. Following this procedure, provided either orally or through an information sheet, participants signed a free and informed consent form. The Ethics and Deontology Commission of the University of Aveiro approved this study.

The sample consists of 90 (68 female) community adults from Ílhavo (Portugal), with mean age of 72y 4m (sd=5y 6m). The ability to walk without assistance was used as inclusion criteria. Exclusion criteria included (i) having undergone any surgery in the last 6 months or (ii) having an acute pulmonary or cardiac disease. Beside demographic characterization, data collection included the Basic Scale of Symptoms of Insomnia and Quality of Sleep (BaSIQS); Pain characterization (pain intensity, pain frequency, pain duration); World Health Organization

Disability Assessment Schedule (WHODAS 2.0) – short version, and Five-Times-Sit-To-Stand-Test (FTSST).

Results

Approximately 61% (n=55; 43 female) of the sample had a poor quality of sleep (cut-off point >15 in BaSIQS). 71.1% (n=64) of participants reported experiencing pain in the last week. The median for pain intensity was 5.0 (IQ1-IQ3=[0-6]), and for 27 pain is experienced for more than 5 years long. The perceived functioning was evaluated by Whodas 2.0 with mean value of 15.5 (IQ1-IQ3 = [14-20] and the assessment by FTSST return a mean value of 12,4 (IQ1-IQ3=[10,6-15,2]). Quality of sleep was associated with short version of WHODAS 2.0 (r_s=0.37, p<0.001), with FTSST (r_s=0.26, p<0.05), pain frequency (r_s=-0.25, p<0.05), pain intensity (r_s=0.24, p<0.05) and pain duration (r_s=0.32, p<0.05). All these associations are considered weak correlations [8]. In stepwise multiple linear regression multicollinearity was assessed by VIF values and only pain duration return a statistical significant model, explaining 7.7% of variation in quality of sleep (β=1.0, p<0.05).

Discussion

The results of this work show a high prevalence of poor sleep quality, confirming the expected changes in initiating and maintaining sleep with ageing [9]. Poor sleep quality was associated with pain, perceived functioning and poor functional performance, but the persistence of pain over time is the principal factor explaining the results. Therefore, interventions that promote healthy lifestyles like community programs for active ageing should include guidance to ensure that participants are aware of the impact of long-term pain, not only in functional performance but also in essential functions for wellbeing like sleep.

Conclusions

Despite the transversal nature of the study, results highlight the relevance of evaluating in detail the relationship between sleep quality, pain and functioning. It is critical that any multidimensional assessment of elderly should also include it in order to define healthy and proper community programs' interventions for this growing population.

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