

QUALITY OF SLEEP IN PATIENTS WITH FIBROMYALGIA

Qualidade do sono em pacientes fibromiálgicos

Calidad del sueño en pacientes con fibromialgia

Original Article

ABSTRACT

Objective: To assess the quality of sleep in patients with fibromyalgia, identifying their main nocturnal habits and checking the possible factors that influence the quality of sleep. **Methods:** Observational cross-sectional research of quantitative approach, performed in a physical therapy outpatient center in the period from March to April 2012, with participation of 24 fibromyalgia patients, regardless of gender and age. A questionnaire based on the Pittsburgh Sleep Quality Index (PSQI) was applied to evaluate the quality and nocturnal habits. Data was analyzed through descriptive statistics. **Results:** As for the sleep latency, only 1 (4.2%) needed an interval shorter or equal to 15 min to fall asleep, while 19 (79.2%) pointed some difficulty in sleeping within 30 min for more than 3 times per week. The items “felling pain” and “waking up at night” had major influence on sleep disturbance in these patients. Regarding the sleep duration, 7 (29.17%) patients sleep less than 5 hours. On the sleep efficiency, 12 (50%) have values above 85%, 10 (41.7%) have efficiency of 75-84% and only 2 (8.4%) have efficiency of 65-74%. Concerning the sleeping medication, 12 (50%) had not used it to sleep during the month and 12 (50%) used it 3 or more times during the week. **Conclusion:** Patients with fibromyalgia assessed in this study presented a decrease in sleep quality and efficiency, which were influenced by sleep latency and duration, occurrence of pain and nocturnal awakening.

Descriptors: Sleep; Fibromyalgia; Physical Therapy Specialty.

RESUMO

Objetivo: Analisar a qualidade do sono em paciente fibromiálgicos, identificando seus principais hábitos noturnos e verificando os possíveis fatores que influenciam na qualidade do sono. **Métodos:** Pesquisa observacional, transversal, de caráter quantitativo, realizada em ambulatório de fisioterapia no período março a abril de 2012. Participaram 24 pacientes fibromiálgicos, independente do sexo e idade. Aplicou-se um questionário baseado no Pittsburgh Sleep Quality Index (PSQI) para avaliar a qualidade e hábitos noturnos. As informações foram analisadas através de estatística descritiva. **Resultados:** Em relação à latência do sono, apenas 1 (4,2%) leva para dormir um tempo menor ou igual a 15 min e 19 (79,2%) apontaram dificuldade de “não adormecer em até 30 min” por mais de 3 vezes por semana. O componente “sentir dor” e o “acordar no meio da noite” tiveram maiores influências no distúrbio do sono destes pacientes. Quanto à duração do sono, 7 (29,2%) dormem menos que 5 horas. Sobre a eficiência do sono, 12 (50,0%) possuíam uma eficiência do sono superior a 85%, 10 (41,7%) possuíam eficiência do sono entre 75-84% e apenas 2 (8,33%) eficiência de 65-74%. Quanto ao uso de medicação para dormir, 12 (50%) não usaram durante o mês e 12 (50%) usavam entre 3 ou mais vezes durante a semana. **Conclusão:** Os pacientes com fibromialgia no presente estudo apresentaram um declínio na qualidade e eficiência do sono, sendo influenciados pela latência e duração do sono, presença de dor e despertar noturno.

Descritores: Sono; Fibromialgia; Fisioterapia.

Florinda Freire Moro⁽¹⁾
Nathália Cordeiro Leite Feitosa
Alexandrino⁽¹⁾
Glauter José Silveira Araújo⁽¹⁾
José Nilson Rodrigues de
Menezes⁽¹⁾

1) Universidade de Fortaleza - UNIFOR
(University of Fortaleza) - Fortaleza (CE)
- Brazil

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RESUMEN

Objetivo: Analizar la calidad del sueño en pacientes con fibromialgia identificando sus hábitos nocturnos principales y verificando los posibles factores que influyen en la calidad del sueño. **Métodos:** Investigación observacional, trasversal de carácter cuantitativo realizada en ambulatorio de fisioterapia entre marzo y abril de 2012. Participaron 24 pacientes con fibromialgia independiente del sexo y edad. Se aplicó un cuestionario basado en el Pittsburgh Sleep Quality Index (PSQI) para evaluar la calidad y hábitos nocturnos. Las informaciones fueron analizadas a través de una estadística descriptiva. **Resultados:** Respecto la latencia del sueño, solamente 1 (42%) duerme menos o igual a 15 min y 19 (79,2%) relataron dificultad de “no dormir en hasta 30 minutos” más de 3 veces a la semana. El componente “sentir dolor” y el “despertar en medio de la noche” tuvieron mayores influencias en el disturbio del sueño de estos pacientes. Respecto la duración del sueño 7 (29,2%) duermen menos de 5 horas. Sobre la eficiencia del sueño, 12 (50,0%) tienen la eficiencia mayor, el 85%, 10 (41,7%) tienen la eficiencia entre el 75-84% y solamente 2 (8,33%) una eficiencia del 65-74%. Sobre el uso de medicación para dormir, 12 (50%) no la usaron durante un mes y 12 (50%) las usaban entre 3 o más veces a la semana. **Conclusión:** En el presente estudio, los pacientes con fibromialgia presentaron una disminución en la calidad y eficiencia del sueño, siendo influenciados por la latencia y duración del sueño, presencia de dolor y despertar nocturno.

Descriptores: Sueño, Fibromialgia, Fisioterapia.

INTRODUCTION

Fibromyalgia (FM) should be recognized as a complex and heterogeneous state of health in which there is a disturbance in pain processing associated with other secondary characteristics. It is one of the most common rheumatic diseases which, despite bringing mainly chronic diffuse musculoskeletal pain, often lead patients to complain of fatigue, sleep disturbances, morning stiffness, paresthesias of extremities, subjective feeling of edema and cognitive disorders⁽¹⁾.

A model of pathophysiology has been accepted, which incorporates many ideas published, and suggests that the primary disorder in FM would be an alteration in some central mechanism of pain control, which could result from a dysfunction of neurotransmitters⁽²⁾.

With this, the American College of Rheumatology established as diagnostic criteria for fibromyalgia the widespread pain index (WPI) and the Symptom Severity Scale and (SSS), or symptoms present at similar intensities for at least three months⁽³⁾.

The literature points out the sleep disturbance among the most frequent complaints in patients with FM. This symptom directly compromises these patients' quality

of life and may promote: insomnia, fatigue, and chronic headaches. Among the most common nocturnal complaints are: difficulty falling asleep, frequent awakening during the night, difficulty resuming sleep, restless and light sleep, early awakening; and, as a consequence, unrefreshing sleep and weariness can contribute to a poor quality of life⁽⁴⁾.

Sleep constitutes a fundamental aspect of human life. It has restorative function, energy conservation and protection. In short- or long-term, deprivation can cause significant impairment in the patient's daily activities, causing social, somatic, psychological or cognitive adversities^(5,6).

Sleep disturbances in patients with FM generate increased pain and stiffness, thus becoming important that new interventions arise, which can bring improvement in the quality of sleep, and get, as a result, improvement in health and quality of life⁽⁴⁾.

The aim of this study was to analyse the quality of sleep in patients with fibromyalgia, identifying its main nocturnal habits, and checking the possible factors that influence the quality of sleep.

METHODS

This is an observational, cross-sectional research, of quantitative approach, conducted at the Núcleo de Atenção Médica Integrada - NAMI (*Center for Integrated Medical Attention*) of the University of Fortaleza, in the period from March to April 2012.

The sample comprised 24 fibromyalgia patients, taking as inclusion criterion for the study those diagnosed by a rheumatologist, regardless of gender and age, and coming from a multidisciplinary research project conducted in the outpatient physiotherapy clinic at NAMI. Patients who were not regularly followed by the professionals involved in the multidisciplinary project were excluded from the study.

By means of an evaluation form, was collected sociodemographic data such as age, gender, educational level and occupation.

Information regarding sleep quality and factors that may influence it were based on a questionnaire validated in Portuguese, the Pittsburgh Sleep Quality Index (PSQI)⁽⁷⁾.

This questionnaire consists of 19 items, which are grouped into seven components: 1) subjective sleep quality; 2) sleep latency; 3) sleep duration; 4) habitual sleep efficiency; 5) sleep disturbances; 6) use of sleeping medication; 7) daytime dysfunction⁽⁷⁾.

Sleep efficiency is evaluated by the time that a person sleeps, relative to the total time in bed during nocturnal sleep, and must be greater than 85%⁽⁸⁾.

The questionnaire was individually applied, being filled out with the help of researchers, who explained about

the purpose of each question, seeking to facilitate their understanding but not interfering with the answers.

Data was analysed using descriptive statistics with percentages, means, and standard deviations in SPSS 18.0 software and displayed as graphs and tables.

For this study, the bioethical principles contained in Resolution 196/96 of the National Health Council were followed, with regard to the standards for human research. The project received approval from the University of Fortaleza (UNIFOR) Ethics Committee - COÉTICA with opinion no. 358/2011.

RESULTS

The study assessed 23 (95.8%) patients of the female gender and one (4.2%) male, with a mean age of 54.5 (\pm 9.3) years; level of education: 13 (54.2%) had incomplete secondary education and 11 (45.8%) had education above high school. When asked about the type of occupation developed, 7 (29.2%) were maids, 4 (16.7%) seamstresses, 3 (12.5%) retired, 2 (8.3%) bill collectors, and 8 (33, 6%) performed other activities.

Regarding the sleep quality, 3 (12%) reported having a good quality of sleep; 7 (29%) reported poor sleep quality, and 10 (42%) had sleep disturbances.

Table I refers to component 2, sleep latency, assessing the amount of minutes that the individual takes to sleep and how many times a week they can not sleep within 30 minutes. It can be observed that the great majority, 21 (87%) took between 15 and 60 minutes to get to sleep and, on the number of times per week that they could not fall asleep within 30 minutes, it was found that 19 (79.2%) reported a frequency of 3 or more nights per week.

Table I - Component 2, sleep latency, of the Pittsburgh Sleep Quality Index (PSQI) questionnaire of patients with fibromyalgia. Fortaleza-CE, 2012.

Component	n	%
Sleep latency		
≥ 15 minutes	1	4.2
16-30 minutes	11	45.8
31-60 minutes	10	41.7
More than 60 minutes	2	8.3
Sleep latency for more than 30 min (frequency)		
Not once	2	8.3
Less than 1 time / week	1	4.2
1 to 2 times / week	2	8.3
3 times or + / week	19	79.2

Component 3 of the questionnaire, regarding the sleep duration, indicates the number of hours of sleep per night, with only one (4.2%) patient sleeping more than 7 hours, and 12 of them (50%) sleeping five hours or less, as shown in table II.

Table II - Components 3 and 4, duration and habitual efficiency of sleep, of the *Pittsburgh Sleep Quality Index* (PSQI) questionnaire, for patients with fibromyalgia. Fortaleza-CE, 2012.

Component	n	%
Sleep duration		
More than 7 hours	1	4.1
Entre 6-7 hours	11	45.8
5 hours	5	20.8
Less than 5 hours	7	29.1
Habitual sleep efficiency		
More than 85%	12	50.0
Entre 75 – 84%	10	41.7
Entre 65 – 74%	2	8.3
Less than 65%	0	0

Table III - Components 6 and 7, use of sleeping medicine and daytime dysfunction, of the *Pittsburgh Sleep Quality Index* (PSQI) questionnaire of patients with fibromyalgia. Fortaleza-CE, 2012.

Component	n	%
Use of sleeping medicine		
Not once	12	50.0
Less than 1 time / week	0	0
1 to 2 times / week	0	0
3 times or + / week	12	50.0
Daytime dysfunction		
Difficulty keeping awake		
Not once	14	58.3
Less than 1 time / week	2	8.3
1 to 2 times / week	3	12.5
3 times or + / week	5	20.8
Difficulty keeping enthusiasm		
None	3	12.5
Mild	5	20.8
Moderate	5	20.8
Severe	11	45.8

As for component 4, concerning the sleep efficiency, composed of the number of hours actually slept and the amount of time between lying and raising, 22 (91.67%)

patients were identified with a sleep efficiency above 74%, and no one presented efficiency under 65% (Table II).

In component 5, sleep disturbances, the study found “pain” and “waking up in the middle of the night” as those cited by the patients.

In Table III, the data related to component 6, use of medications for sleep, indicates that 12 (50%) of them made use 3 or more times during the week.

Component 7, referring to daytime dysfunction, which assesses daily sleepiness and enthusiasm concerning the latter month, showed 14 (58.3%) patients without problems to remain awake during the day. However, 5 (20.8%) had problems to remain awake 3 or more days per week (Table III). Regarding the enthusiasm, only 3 (12.5%) had no problem keeping up excited and 11 (45.8%) had “serious” problem in maintaining enthusiasm (Table III).

DISCUSSION

In the present study we sought to know the quality of sleep and factors that may influence it, besides the main nocturnal habits of a group of fibromyalgia patients.

The sociodemographic findings presented in this study corroborate the literature, indicating a higher prevalence of fibromyalgia in women, and including an age range between 35 and 44 years⁽²⁾.

Researches have demonstrated that one of the main symptoms composing fibromyalgia are the sleep disturbances^(4,9). Compared to the sample of this survey, where 42% of those evaluated by the PSQI showed sleep disturbances, 29% reported poor sleep quality, and even the percentage of 17%, who reported having a very good quality of sleep, and those 12% who reported having a good quality, complaints in relation to sleep were present, confirming the high prevalence of this complaint among fibromyalgia patients.

Insomnia is the most common sleep disorder in the population, representing a major public health problem⁽¹⁰⁾. Among adults, the daily need for sleeping ranges from 5 to 8 hours on average. Most do not feel completely renewed of their sleep needs with less than 7 hours per day, although the sociocultural demands usually prevent them from sleeping less than its endogenous necessity⁽¹¹⁾. Many of the individuals analysed in this study had sleep duration between 6 and 7 hours and even less than five hours per night.

The main complaints related to sleep disturbances are difficulty initiating sleep, multiple awakenings with difficulty returning to sleep, early awakening, and sleepiness/persistent fatigue during the day⁽⁵⁾. Among

the manifestations of fibromyalgia, sleep disturbances represent an important aspect to be analysed. The events of sleep fragmentation, such as increase in the number of brief awakenings, are particularly frequent⁽¹²⁾. In this work the frequency of awakening during the night became evident, being mainly due to the pain, and even going to the bathroom and nightmares were cited as factors that influence the duration and sleep efficiency.

Patients with fibromyalgia had lower total time of sleep efficiency, a high frequency of night awakenings caused by pain, and long time to fall asleep, characterizing the restless sleep⁽¹¹⁾. These results are similar to those found in the present study, in which pain and waking up at night had enough influence on sleep disturbances among the evaluated patients.

The literature shows the changes in sleep patterns of individuals with fibromyalgia, and decreased sleep efficiency evidenced since the 70s that have already been reported as a decrease in sleep efficiency and total sleep time in these patients⁽¹²⁾. In the present study it was shown that half (12) of the subjects had a sleep efficiency greater than 85%, the other half (12) remaining below 85%.

Altogether, the evaluated components point to a deficit in sleep efficiency and possible impacts on quality of life, in addition to physiological repercussions on the individuals' health. In the event of fibromyalgia, this generates a vicious cycle where the non-restorative sleep tends to increase muscle fatigue and pain, which in turn will affect back the quality of sleep.

CONCLUSION

The present study identified, in this group of patients with fibromyalgia, a decline in the quality and efficiency of sleep, being influenced by the latency and duration of sleep, pain, and night awakening.

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Mailing address:

Jose Nilson Rodrigues de Menezes
Universidade de Fortaleza
Curso de Fisioterapia
Av. Washington Soares, 1321
Bairro: Edson Queiroz
CEP: 60.811-905 - Fortaleza - CE - Brasil
E-mail: nilsonmenezes@unifor.br