Journal of Nursing
Revista de Enfermagem
UFPE On Line
ISSN: 1981-8963

ORIGINAL ARTICLE

FACTORS ASSOCIATED WITH THE OCCURRENCE OF NAPS BETWEEN COMMUNITY ELDERLY

FATORES ASSOCIADOS À OCORRÊNCIA DE COCHILOS ENTRE IDOSOS COMUNITÁRIOS

FACTORES ASOCIADOS A LA OCURRENCIA DE SIESTAS ENTRE ANCIANOS COMUNITARIOS

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ABSTRACT

Objective: to analyze the association of sex, age, schooling, family income, levels of frailty and five criteria of frailty with occurrence of naps among the elderly. ***Method:*** quantitative, cross-sectional and descriptive study. 3,075 elderly people were evaluated using a sociodemographic questionnaire, Minnesota Leisure Activity Questionnaire question, Fried frailty phenotype and Mini Mental State Examination. The Chi-square test and the univariate and multivariate logistic regression (α = 5.0%) were applied. Ethical principles have been respected. ***Results:*** 61.7% of the elderly take a nap during the day. There was an association between taking a nap and age, sex and family income. ***Conclusion:*** the evaluation of patients should study sleep issues, especially considering age, sex and income, to detect problems previously and develop actions that maintain the elderly's autonomy and independence. ***Descriptors***: Elderly; Geriatric Nursing; Sleep; Health of the Elderly; Comprehensive Health Care; Nursing.

RESUMO

Objetivo: analisar associação gênero, idade, escolaridade, renda familiar, níveis de fragilidade e cinco critérios de fragilidade com ocorrência dos cochilos de idosos. ***Método***: estudo quantitativo, transversal, descritivo. Foram avaliados 3.075 idosos, utilizando questionário sociodemográfico, questão do Minnesota Leisure Activity Questionnaire, fenótipo de fragilidade de Fried e o Mini Exame do Estado Mental. Foram aplicados o teste Qui-quadrado e a regressão logística univariada e multivariada (α=5,0%). Os princípios éticos foram respeitados. ***Resultados***: dos idosos, 61,7% cochilavam durante o dia. Houve associação entre ocorrência de cochilo e idade, gênero e renda familiar. ***Conclusão***: a avaliação dos pacientes deve estudar questões do sono, especialmente considerando idade, sexo e renda, para detectar previamente problemas e desenvolver ações que mantenham a autonomia e a independência dos idosos. ***Descritores***: Idoso; Enfermagem Geriátrica; Sono; Saúde do Idoso; Atenção Integral à Saúde; Enfermagem.

RESUMEN

Objetivo: analizar la asociación de género, edad, escolaridad, renta familiar, niveles de fragilidad y cinco criterios de fragilidad con ocurrencias de las siestas de ancianos. ***Método***: estudio cuantitativo, transversal, descriptivo. Fueron evaluados 3.075 ancianos, utilizando cuestionario sociodemográfico, pregunta del Minnesota Leisure Activity Questionnaire, fenotipo de fragilidad de Fried y el Mini Examen del Estado Mental. Fueron aplicados el test Chi-cuadrado y la regresión logística univariada y multivariada (α=5,0%). Los principios éticos fueron respetados. ***Resultados***: de los ancianos, 61,7% tomaban uma siesta durante el dia. Hubo asociación entre ocurrencia de siesta y edad, género y renta familiar. ***Conclusión***: la evaluación de los pacientes debe estudiar cuestiones del sueño, especialmente considerando edad, sexo y renta, para detectar previamente problemas y desarrollar acciones que mantengan la autonomía y la independencia de los ancianos. ***Descriptores***: Anciano; Enfermería Geriátrica; Sueño; Salud del Anciano; Atención Integral de Salud; Enfermería.

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INTRODUCTION

The occurrence of naps among the elderly suggests an increase in mortality and the presence of comorbidities[1], and the factors associated with the causation of naps are diverse and vary according to location, population characteristics and definition of nap.

There seems to be no gender difference in relation to the nap, with higher rates among elderly men.[1-2] However, another study found no significant difference between the sexes.[3]

The prevalence of nap seems to increase with advancing age,[4] and older adults report more frequent naps when compared to younger ones.

There is also no clarity about the influence of schooling, however, since a research has demonstrated association between high levels and naps,[5] there is also controversy.[6] With regard to income, the results are inconsistent and may be associated with low income [6] or not.[4]

Sleep disorders and frailty/frailty criteria are increasingly common in old age.[4,7-8] Disorders are characterized by biological processes similar to those of frailty.[9] Thus, associations were found between daytime sleepiness and frailty, but still in reduced numbers.[8-9]

Given the paucity of evidence on this association, in addition to the inconsistency of the available results, this study is justified, since the nap represents a sign of comorbidities,[4] collaborating to detect problems and early interventions.

OBJECTIVE

- To analyze the association of sex, age, schooling, family income, levels of frailty and the five criteria of frailty with the occurrence of naps among elderly residents in the community.

METHOD

This is a descriptive, cross-sectional, quantitative study and a cut from the multicenter study Frailty in Brazilian Elderly (FIBRA) study, which studied the health and well-being of the population aged 65 years and over, living in the community, conducted in Brazilian universities (UFMG, USP-RP, UNICAMP, UERJ).

In this paper, the data of the Unicamp poles were used, which included the cities of Belém (PA), Poços de Caldas (MG), Parnaíba (PI), Campinas (SP), Ivoti (RS), Ermelino Matarazzo (district of SP) and Campina Grande (PB) (n = 3,478). The sample comprised all the elderly of this database (n = 3,075), except those who did not present data about nap.

Recruitment occurred at home in randomly drawn census sectors. The interviewers were trained and followed the instrument built and previously tested.

The inclusion criteria were being aged 65 or over; understanding the instructions; agreeing to participate; and being a permanent resident in the household and in the census sector. Exclusion criteria were having severe cognitive deficit suggestive of dementia observed by recruiters; using a wheelchair or being temporarily or permanently bedridden; having severe sequelae of stroke, with localized loss of strength and/or aphasia; having severe or unstable Parkinson's disease; having severe hearing or vision deficits; and being on terminal stage.

The collection was done after participants read and signed the Informed Consent Form and in a single session, from September 2008 to June 2009. Sex, age, marital status, color/race, schooling, family income in minimum wages, family arrangement, current work and retirement were surveyed for sociodemographic characterization.

For evaluating the cognitive status, the Mini Mental State Exam was used and those that scored above the cut grade were included were included, according to the schooling level.

For evaluation frailty, the definition proposed by Fried[7] was adopted, whose five elements of the operational definition are unintentional weight loss equal to or greater than 4.5 kg or 5.0% of body weight in the previous year; fatigue evaluated by self-report, considered its manifestation the affirmation that in three days or more of the week the elderly felt he or she had to make much effort to perform the tasks or that he or she was not able to carry out the habitual tasks; low grip strength measured with handheld hydraulic dynamometer in the dominant hand, adjusted by sex and body mass index, from the arithmetic mean of three measurements; low level of energy expenditure measured in kilocalories and adjusted to sex, evaluated by self-report of physical exercises and household chores performed in the last seven days; and low gait speed indicated by the average time (arithmetic mean of three measures) spent to cover 4.6m adjusted according to sex and height. The presence of three or more of

these five characteristics means frailty; one or two, pre-frailty; and none, non-frail elderly.

A question of the Minnesota Leisure Time Activities Questionnaire[10] was applied to evaluate nap: whether the elderly sleeps or takes naps during the day (yes or no).

The ethical principles were respected with approval as an addendum to FIBRA (Opinion no. 208/2007) and the Declaration of Helsinki and Resolution CNS 466/2012 were respected.

In order to analyze the association, using SAS software version 9.2, between the variables of interest and the occurrence of nap (binary categorical), we used the logistic regression analysis univariate and multiple, adjusted according to sex, age, schooling and family income. Variables not adherent to the normal distribution were transformed into stations. Calculations of crude and adjusted odds ratios were presented. To study the associations between occurrence of nap and frailty criteria, Chi-square was used. The level of significance was 5.0%.

RESULTS

The participants (n = 3,075) were mostly women (2,072 - 67.4%), aged 65-69 years (1,085 - 35.3%), married or living with companion (1,509 - 48.1%), of white color (1,565 - 50.1%), with one to four years of schooling (1,540 - 27.4%), monthly family income of 1.1 to 3.0 minimum wages (1,500 - 48.8%), living only with children (842 - 53.7%), did not work (2,521 - 85.0%), were retired (2,343 - 76.2%), took naps during the day (1,897 - 61.7%) and were pre-frail (1,595 - 51.9%).

Table 1 shows the results of simple logistic regression. The most important predictors for the occurrence of naps in community-dwelling elderly were the male gender (54% more likely), being aged 75 or more and income from 3.1 to 5.0 minimum wages (36% more likely). Those between 75 and 79 years of age are 25% more likely to take naps and, at those aged 80 and over are 31% more likely to it.

Table 1. Simple logistic regression analysis for the occurrence of naps. Campinas (SP), Brazil, 2008-2009.

Variable (n)*	Nap		OR**	95% CI***
	No n (%)	Yes n (%)		Lowest - highest limit
Frailty (2,979)				
Non-frail (1,165)	457 (39.2)	708 (60.8)	1.0	
Pre-frail (1,546)	594 (38.4)	952 (61.6)	1.04	0.89 - 1.21
Frailc(268)	90 (33.6)	178 (66.4)	1.28	0.97 - 1.69
Sex (3,023)				
Male (994)	314 (31.6)	680 (68.4)	1.54	1.31 - 1.81
Female (2,029)	843 (41.5)	1186 (58.5)	1.0	
Age range - years (3,023)				
65 to 69 (1,072)	438 (40.9)	634 (59.1)	1.0	
70 to 74 (908)	353 (38.9)	555 (61.1)	1.09	0.91 - 1.30
75 to 79 (605)	215 (35.5)	390 (64.5)	1.25	1.02 - 1.54
≥80 (438)	151 (34.5)	287 (65.5)	1.31	1.04 - 1.66
Schooling- years (3,019)				
zero (575)	222 (38.6)	353 (61.4)	1.02	0.79 - 1.33
1 to 4 (1507)	575 (38.2)	932 (61.8)	1.04	0.83 - 1.31
5 to 8 (536)	201 (37.5)	335 (62.5)	1.07	0.82 - 1.40
≥ 9	157 (39.1)	244 (60.9)	1.0	
Family income – MW**** (2,544)				
0 to 1.0 (295)	122 (41.4)	173 (58.6)	1.0	
1.1 to 3.0 (1,245)	495 (39.8)	750 (60.2)	1.07	0.83 - 1.38
3.1 to 5.0 (536)	183 (34.1)	353 (65.9)	1.36	1.02 - 1.82
5.1 to 10.0 (310)	125 (40.3)	185 (59.7)	1.04	0.76 - 1.44
>10.0 (158)	53 (33.5)	105 (66.5)	1.40	0.93 - 2.09

Number of respondents (n) / ** Odds ratio (OR) / *** Confidence interval 95% (CI 95%) / * Minimum wage (MW) (R$ 415.00 in 2008 and R$ 465.00 in 2009)**

In the multiple logistic regression (Table 2), it was verified that sex and family income were significantly associated with naps. The elderly with the highest risk of taking naps were men (48% more likely) and with a family income of 3.1 to 5.0 minimum wages (38% more likely).

Table 2. Multiple logistic regression analysis for occurrence of naps. Campinas (SP), Brazil, 2008-2009.

Variable (n)*	Nap		OR**	95% CI***
	No	Yes		Lowest - highest limit
	n (%)	n (%)		
Frailty (2,979)				
Non-frail (1,165)	457 (39.2)	708 (60.8)	1.0	
Pre-frail (1,546)	594 (38.4)	952 (61.6)	1.0	0.85 - 1.19
Frailc(268)	90 (33.6)	178 (66.4)	1.27	0.92 - 1.77
Sex (3,023)				
Male (994)	314 (31.6)	680 (68.4)	1.48	1.24 - 1.77
Female (2,029)	843(41.5)	1186 (58.5)	1.0	
Age range - years (3,023)				
65 to 69 (1,072)	438 (40.9)	634 (59.1)	1.0	
70 to 74 (908)	353 (38.9)	555 (61.1)	1.07	0.88 - 1.30
75 to 79 (605)	215 (35.5)	390 (64.5)	1.18	0.94 - 1.49
≥80 (438)	151 (34.5)	287 (65.5)	1.31	1.0 - 1.71
Schooling- years (3,019)				
zero (575)	222 (38.6)	353 (61.4)	1.08	0.78 - 1.50
1 to 4 (1507)	575 (38.2)	932 (61.8)	1.06	0.81 - 1.40
5 to 8 (536)	201 (37.5)	335 (62.5)	1.13	0.83 -1.54
≥ 9	157 (39.1)	244 (60.9)	1.0	
Family income – MW**** (2,544)				
0 to 1.0 (295)	122 (41.4)	173(58.6)	1.0	
1.1 to 3.0 (1,245)	495 (39.8)	750(60.2)	1.10	0.85 - 1.44
3.1 to 5.0 (536)	183 (34.1)	353(65.9)	1.38	1.02 - 1.87
5.1 to 10.0 (310)	125 (40.3)	185(59.7)	1.06	0.75 - 1.49
>10.0 (158)	53 (33.5)	105(66.5)	1.36	0.87 - 2.13

*** Number of respondents (n) / ** Odds ratio (OR) / *** Confidence interval 95% (CI 95%) / **** Minimum wage (MW) (R$ 415.00 in 2008 and R$ 465.00 in 2009)**

No associations were found between frailty criteria and naps (Table 3).

Table 3. Association between frailty criteria and occurrence of naps. Campinas (SP), Brazil, 2008-2009.

Variable (n)	Nap		p-value*
	No n (%)	Yes n (%)	
Weight loss (2,839)			0.2856
Non-frail (2,298)	869 (37.8)	1,429 (62.2)	
Frail (541)	218 (40.3)	323 (59.7)	
Fatigue (2,915)			0.0564
Non-frail (2,275)	887 (39.0)	1,388 (61.0)	
Frail (640)	223 (34.8)	417 (65.2)	
Grip strength (2,959)			0.6396
Non-frail (2,350)	908 (38.6)	1,442 (61.4)	
Frail (609)	229 (37.6)	380 (62.4)	
Physical activity (2,993)			0.5658
Non-frail (2,401)	923 (38.4)	1,478 (61.6)	
Frail (592)	220 (37.2)	372 (62.8)	
Gait speed (2,964)			0.0539
Non-frail (2,369)	1,439 (60.7)	930 (39.3)	
Frail (595)	387 (65.0)	208 (35.0)	

*Chi-square

DISCUSSION

This study has strengths, such as pioneerism, significant sample size and national coverage, elderly not selected according to sleep disorders or frailty, frailty-validated measures and identical to those used in the definition of Fried.[7] The elderly with cognitive alteration were excluded to avoid possible influence or alteration of the findings.

The most important predictors for the occurrence of naps in the community-dwelling elderly were the male gender, being aged 75 or older and having income from 3.1 to 5.0 minimum wages. Men are 54% more likely to doze when compared to women. Older people in the age group 75-79 are 25% more likely to doze and those aged 80 and older are 31% more likely to doze when compared to younger elderly. Participants with incomes of

3.1 to 5.0 minimum wages are 36% more likely to doze when compared to other family income ranges. The variables sex and family income were significantly associated with the occurrence of naps among the elderly, as observed in the results of multiple logistic regression.

Studies have corroborated these findings and found that naps are more prevalent in men.[1-2] Currently, the labor situation has undergone changes and an increasing number of women are inserted in the labor market. This means that women, in addition to the eight-hour day's paid work, come home and face domestic chores. This excessive work (inside and outside the home) is called a double working day[11] and there is no time to nap, unlike men.

Another issue to be highlighted is retirement. When a man ends his participation in the labor market and returns home, he is faced with the dilemma of a new identity and this universe known to women. This task of remaking their gender identity is difficult for aging men, since they have lost several attributes that defined hegemonic masculinity (ability to work, sexual potency, physical strength).[11] When they retire, they have more time to nap in comparison to women, who even retired, are still faced with household chores, not having time to nap.[12]

Previous studies have shown an association between sleep disorders and comorbidities.[1,13] It is known that the greater demand for health services is demonstrated to a greater extent by women, since they have more cultural permission to express complaints of discomforts.[11] Thus, men may have unknown disease that may influence naps.

The prevalence of some conditions increases with age and occurs more in men, such as obstructive sleep apnea syndrome, which is associated with increased neck circumference as a result of obesity, and snoring. This syndrome generates unsatisfactory sleep, with several awakenings at night, and affects the quality of nocturnal sleep[14], which can cause excessive daytime sleepiness[15] and intentional or non-intentional daytime nap.

Nap is seen as a common occurrence with the advancement of age, whose prevalence seems to increase, as older elderly typically report more frequent naps compared to younger ones.[3,5]

Normal aging causes functional impairment in the circadian timing system, causing increased sleep fragmentation as a result of the internal temporal disorganization between biological rhythms, which results in more irregular and fragmented sleep/wake time schedules. It also causes advancement of phase of biological rhythms, in which sleep, body temperature, hormone secretion and activity/rest times happen earlier in the elderly; the reduction in amplitude, in which the circadian component of the wake/sleep cycle becomes less robust; the change in social synchronizers, in which there is the challenge of synchronizing with an environment in which social time signals often become less regular. All of these changes may favor an increase in the frequency of naps.[5]

The national epidemiological transition leads to the modification of the most prevalent diseases, which are currently chronic and non-transmissible. The presence of comorbidities is highly associated with the probability of the elderly reporting regular naps, with differences regarding the relationship of causality. As the years pass, the greater the chances of the individual presenting chronic diseases and, thus, dozing, or the tendency to sleep fragmentation with consequent daytime sleepiness, which may occur and result in naps, and may contribute to the emergence of diseases.

Some studies have shown an association between depression and the occurrence of sleep disorders[3,13] like naps [3] or insomnia[13]. Also, factors such as social isolation, mourning and loneliness also increase the frequency of naps.

In the income category, few studies were found on the association between naps and income, which showed inconsistent results. In China, a survey of 15,638 elderly people to examine factors associated with sleep duration and quality reported that low income and schooling are associated with increased risk for insomnia and the occurrence of short-term daytime sleep.[6] However, there is also a study that found no association between income and naps.[4] One possible explanation is that older people with incomes of 3.1 to 5.0 minimum wages have a stable life and have their needs met, so they feel comfortable to doze during the day.

In relation to schooling, no association was found with nap; however, another research[5] evidenced an association between high levels of schooling and naps. Perhaps, this association has not been found due to the low level of education of the majority of the sample.

Although not synonymous, daytime sleepiness can lead to nap. A North American cross-sectional study included 374 community-dwelling elderly, aged 78 years and older (mean age 84.3 years), to assess the association between sleep and frailty. It found

that 23.8% of the elderly presented sleepiness and 41.2% were frail. The highest prevalence of frailty was observed in participants with daytime sleepiness and there was a significant association between sleepiness and frailty, with adjusted odds ratios of 3.67 (95% CI: 2.03-6.61).[9]

One possible explanation for the lack of association between nap and frailty in the present study is the exclusion of elderly people with cognitive deficits. Cognitive damage is considered a fundamental component of the frailty syndrome[7], and elderly individuals with cognitive alterations may present unsatisfactory, fragmented and non-restorative nocturnal sleep[13], with increased probability of daytime nap. Also, there were no significant associations between the five criteria of frailty and occurrence of naps in the community-dwelling elderly. Although similar research is scarce and different from this, a North American study found no significant difference between nap and physical activity; however, subjects who dozed were less physically active when compared to those who did not. In relation to fatigue, subjects who dozed had more fatigue than those who did not.[3]

This may occur due to disruptions of nighttime sleep as a result of age. Individuals who doze may be more prone to the difficulty of maintaining nocturnal restorative sleep. When unsatisfactory, it can leave the elderly person fatigued and lead to daytime sleepiness and consequently to nap, although it is difficult to determine the causal relationship between nap and sleep.

Researchers found that the highest prevalence of slow gait speed was observed in subjects with daytime sleepiness. In the multivariate analysis, daytime sleepiness was associated with slow gait speed.[9] The analysis of association between occurrence of daytime naps and walking presented a statistically significant difference, so that the elderly who dozed less performed physical activity.[15]

CONCLUSION

There was association only between occurrence of nap and age, sex and family income. It is suggested that further studies should be conducted, since napping may be a sign of comorbidity and frailty, as the literature has shown a shortage of studies.

Such knowledge is important for the development of strategies able to meet the increasing demand of this age group, collaborating to detect problems early in order to avoid late interventions. Nursing can deepen the evaluation performed with patients who enter the health services, detect previous problems and develop actions that maintain autonomy and independence, impacting their quality of life.

FINANCING

Coordination of Improvement of Higher Level Personnel (CAPES).

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Submission: 2017/08/16
Accepted: 2017/12/08
Publishing: 2018/02/01

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