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Analysis of selected factors related to sleep disorders on a group of older people

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Summary

Introduction

Sleep disturbances are a frequent health problem occurring among the elderly, constantly worsening with age. They affect more than 50% of older people living in a home environment and about two-thirds of those living in institutions where sleep becomes even more disturbed than at home. Problems with falling asleep or supporting sleep are reported by up to 50% of people over 60 years of age.

Aim

Analysis of selected factors related to sleep disorders in a selected group of older people, such as age, sex, marital status, sleep time, waking up at night, time to fall asleep, the presence of naps during the day and cramps during sleep.

Materials and Methods

The research was conducted among 65 people aged over 60 in the Lublin Voivodeship from May to July 2018. The research method used was a diagnostic survey and the author's questionnaire was the research tool. The level of significance was assumed at the level of $p < 0.05$. A Chi-square conformity test was applied to the analysis of the sample.

Results

Sleep problems occur in 76.92% of elderly people and they related significantly more often to women, the oldest, unmarried people who wake up at least 4 times a night, need at least 60 minutes to fall asleep, nap during the day and experience leg cramps during sleep.

Conclusions

1. Sleep disorders are a common problem in the elderly and are of a multi-causal nature
2. Variables affecting sleep disorders in the examined group of older people are: age, sex, marital status, waking up at night, time to fall asleep, the presence of naps during the day and cramps during sleep.

Key words: sleep disorders, insomnia, elderly people

Introduction

Sleep disorders are a common health problem among older people. According to the Association of Sleep Disorders Centers (ASDC) classification sleep disorders can be divided into: disorders with difficulties in falling asleep and / or continuing sleep (insomnia), disorders with excessive sleepiness (hypersomnia), sleep rhythm and wakefulness disorders and disorders associated with specific sleep stages (parasomnias) [1].

Epidemiological studies show that sleep problems and daytime sleepiness are increasing with age [2]. They affect more than 50% of elderly people living in a home environment and about two-thirds of people living in institutions where sleep becomes even more disturbed than at home [3]. Problems with falling asleep or supporting sleep are reported by up to 50% of people over 60 years of age [4] and the prevalence of insomnia, which is the most common type of sleep disorder, ranges from 20 to 48% [5]. Studies show that insomnia is more common in women than in men [6] and may be the cause of depressive illness, anxiety disorders and even lead to mental illness, may be transient due to environmental changes, may also be the first symptom of stress due to personal problems [7]. It should be added that transient insomnia may develop into a chronic one if sleep hygiene is inadequate or inappropriate treatment is selected [8].

The causes of sleep disorders in the elderly are: emotional stress, physiological changes associated with aging (circadian rhythm disorders, psychosomatic disorders, adverse effects of pharmacological treatment and serious diseases), socio-demographic, behavioral factors [9]. Older people often have difficulty falling asleep or experiencing short night awakening, the number of which may reach up to 15 per hour, they wake up earlier and have increased daytime sleepiness. Sleep efficiency decreases compared to younger age groups [10]. In the body, neurohormonal changes occur that result in a reduction of growth hormone secretion, elevated cortisol in the evening hours and an increase in the level of interleukin - 6, which is associated with a greater number of awakenings during sleep [11].

The aim of the study was to analyse selected factors associated with sleep disorders in a selected group of older people, such as age, sex, marital status, sleep time, waking up at night, sleep time, naps during the day and cramps during sleep.

Materials and Method

The research was conducted among people over 60 in the Lublin Voivodship from May to July 2018. The research method used was a diagnostic survey and the author's questionnaire was the research tool. The results of the study were subjected to statistical analysis based on the STATISTICA computer program. The level of significance was assumed at the level of $p < 0.05$. A Chi-square compatibility test was used for the analysis of the sample.

Ethical requirements

The research was voluntary and anonymous. The respondent was informed about the study and how to fill in questionnaires, then agreed to participate in the study. The test procedure was carried out in line with the Declaration of Helsinki. Research carried out within the framework of own research.

Results

Characteristics of the group

65 people aged 60 to 88 participated in the study. The average age of the respondents was 72.93 ± 8.2 years. The respondents aged up to 70 years of age accounted for 35.38% ($n = 23$) of subjects, 71 to 80 years - 43.08% ($n = 28$) and above 80 years - 21.54% ($n = 14$). Most of them were women (66.15%, $n = 43$), single people (unmarried men / unmarried woman, widow / widower) (50.77%, $n = 33$).

As many as 76.92% ($n = 50$) of the respondents have sleep problems. The conducted research showed that 46.15% ($n = 30$) of the subjects examined spent 8 - 9 hours, 41.54% ($n = 27$) 6 - 7 hours, and 12.31% ($n = 11$) 4 - 5 hours sleeping. During sleep, 49.23% ($n = 32$) of the respondents woke up at least 4 times at night, 46.15% ($n = 30$) three times a night. The respondents most often needed to fall asleep from 30 to 60 minutes (43.08%, $n = 28$), 27.69% ($n = 18$) needed up to 30 minutes and 29.23% ($n = 19$) more than an hour. Over half of the respondents (55.38%, $n = 36$) felt the need for a nap during the day, and 64.62% ($n = 42$) had leg cramps during sleep.

Statistical analysis showed that respondents aged 71 and above had more sleep problems than younger people. Significantly, these problems concerned women and people with free marital status. The differences found were highly statistically significant.

Studies have shown that respondents who spent 4-5 hours on sleep more often had sleep problems (90.91%) than those who devoted at least 6 hours to sleep. The differences observed were on the verge of statistical significance ($p = 0.05$). The exact data is presented in Table 1.

Table 1.

Sleep disorders	Sex		Age			Marital status		Hours of sleep		
	Female	Male	60-70	71-80	≥ 81	Single	In relationship	4-5h	6-7h	8-9h
Yes [%]	88,56	55,88	58,79	85,95	87,5	93,59	56,37	90,91	85,69	63,67
No [%]	11,44	44,12	41,21	14,05	12,5	6,41	43,63	9,09	14,31	36,33
Chi ²	13,28		9,89			17,61		5,94		
p	0,0003		0,007			0,00003		0,05		

The respondents who woke up at least 4 times in the night more often had sleep problems than the respondents who woke up less frequently. Older people who needed to fall asleep over an hour more often had sleep problems than people who needed only from 30 to 60 minutes or <30 minutes to fall asleep. Sleep problems also affected people who felt the need for naps during the day and those who experienced leg cramps during sleep. The relationships found were highly statistically significant. The exact data is presented in Table 2.

Table 2.

Sleep disorders	Waking up at night		Time to fall asleep			Naps during the day		Leg cramps during sleep	
	0-3 times	≥ 4	<30 min	30-60 min	>60 min	Yes	No	Yes	No
Yes [%]	58,76	98,44	28,63	93,22	98,5	87,63	65,84	92,3	51
No [%]	41,24	1,56	71,37	6,78	1,5	12,37	34,16	7,7	49
Chi ²	22,02		52,63			7,54		23,58	
p	0,00001		0,00001			0,006		0,00001	

Discussion

Sleep problems among the elderly are a marginalized problem underestimated due to the lack of uniformity of research and a small number of epidemiological data [12]. Problems such as: frequent waking up at night, difficulties in falling asleep or early waking in the morning, older people attribute to the period of old age and treat them mainly as somatic ailments [13].

Sleep disorders are common in the elderly population, which is confirmed by the results of the research. As many as 76.92% of older people admitted that they had trouble sleeping.

The most common type of sleep disorder is insomnia, which is consistent with the results of studies by Dudzińska and co-workers, in which 71.07% of respondents declared sleep disorders of the type of insomnia as a significant problem [14]. Also in the study Jaussent et al. It was found that the symptoms of insomnia are very prevalent, over 70% of elderly people reported at least one symptom of insomnia [5].

Own research shows that sleep disturbances increase with age, because in 87.5% of the respondents aged over 81 and over and in 85.95% in the 71-80 years range, sleep problems were more frequent than in people aged up to 70 years of age (58.79%).

The tendency for frequent occurrence of insomnia in age groups over 65 years is also confirmed by other authors [2,3,14,15].

Sleep problems also affect women more often (88.56%) than men (55.88%). The occurrence of insomnia depending on the sex has been discussed in many studies and the results of the study clearly confirm a greater predisposition to the occurrence of sleep disorders in the female sex [2,5,10,16]. However, the study was not confirmed by Gambhir et al. [3].

Report by Nowicki and others regarding the prevalence of subjective insomnia in the Polish population with the participation of, among others 590 people aged 60-79 indicate more frequent occurrences of subjective insomnia in women and in older age groups. Examined persons most frequently declared difficulties in falling asleep, subsequently they reported problems with maintaining sleep continuity and early morning waking up [17].

Night sleep of older people is significantly affected by the way they function during the day. Daily naps significantly interfere with night's sleep and extend the period of falling asleep. However, naps can perform a very useful role by reducing functional disorders caused by poor quality of night sleep. It is necessary to realize that especially among elderly people it is not uncommon that naps become a permanent element of behavior, which enables good functioning [18]. Recommendations regarding sleep hygiene among the elderly allow one nap, however, lasting no longer than 30 minutes in the early afternoon [19]. In own research, 55.38% of respondents had a nap during the day. According to Ziółkowska - Kochan et al., naps significantly contribute to the reduction of sleep time at night [1].

The time required to fall asleep among the elderly also plays an important role in the sleep process. People who cannot fall asleep for a long time and need more than an hour (98.5%) notice much more sleep problems than those who fall asleep during 30-60 minutes (93.22%) or up to 30 minutes (28 , 63%). Similar results in their research were presented by Reclaw et al., In which up to 98% of the respondents declared sleep disorders with primary insomnia [20].

The above studies only indicate selected factors related to the occurrence of sleep disorders among the elderly, which is a limitation of our research. Other factors such as the presence of chronic psychosomatic diseases, socioeconomic status, psychosocial factors, and pharmacological treatment should be the subject of further research. It is also worth paying attention to insomnia as a symptom of depression of the elderly.

In dealing with people with sleep disorders beyond the aforementioned factors, it is important to obey the principles of sleep hygiene, increase physical activity or the use of behavioral-cognitive therapy. The use of hypnotics should be short-lived, conducted only in the initial period of treatment of disorders [19].

Conclusions

1. Sleep disorders are a common problem in the elderly and are of a multi-causal nature
2. Variables affecting sleep disorders in the examined group of older people are: age, sex, marital status, waking up at night, time to fall asleep, the presence of naps during the day and cramps during sleep.

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