RESEARCH ARTICLE

Nur Simsek Yurt[1]
Mahcube Cubukcu[1]

[1]Department of Family Medicine, Health Sciences University Samsun Training and Research Hospital, Samsun, Turkey

Corresponding Author:
Nur Simsek Yurt
Department of Family Medicine, Health Sciences University Samsun Training and Research Hospital, Samsun, Turkey
Phone: +90 3623111500
Mail: nursimsekyurt@gmail.com

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konuralptipdergi@duzce.edu.tr
konuralptipdergisi@gmail.com
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Quality of Sleep and Related Factors on Elderly Residents of the Nursing Homes

ABSTRACT

Objective: Our study aims to determine the rate of sleep disorders in elderly people aged 65 and older, living in nursing homes in Samsun, and also to investigate the factors affecting sleep quality through a comprehensive geriatric assessment.

Methods: Our study was performed in the two largest nursing homes in Samsun province between March 1st and April 30th 2018. The sleep quality of the participating individuals was assessed by the Richard's Campbell Sleep Questionnaire (RCSQ) and the Epworth Sleepiness Scale (ESS). This individuals in our study were assessed using Geriatric Depression Scale (GDS), Mini-Mental State Examination (MMSE), Short Form 36 Health Survey (SF-36), Charlson Comorbidity Index (CCI). The obtained data were analyzed with SPSS 23.0 and $p<0.05$ was considered as significant.

Results: A total of 84 people were included in the study and the mean age was 77.06±7.97 years. It was determined that 23.8% of the individuals had poor sleep quality at night according to RCSQ and 42.9% of the individuals had increased daytime sleepiness according to ESS. A significant statistical difference was found between the GDS scores with the RCSQ and ESS scores ($p<0.001$, $p=0.001$, respectively). The presence of depressive symptoms was associated with sleep quality at night and daytime sleepiness. A statistically significant difference was found between the MMSE and RCSQ scores ($p=0.014$). The presence of dementia was associated with sleep quality at night.

Conclusions: The presence of depressive symptoms was found to cause poor sleep quality at night and increased daytime sleepiness. People with dementia had low sleep quality at night. The low life quality was found to associate poor sleep quality at night and increased daytime sleepiness.

Keywords: Aged, Sleep, Depression.

Huzurevinde Yaşayan Yaşlı Bireylerin Uyku Kalitesi ve Etkileyen Faktörler

ÖZET

Amaç: Çalışmamızın amacı, Samsun ilinde huzurevlerinde yaşayan 65 yaş ve üzeri yaşlı bireylerde uyku bozukluğu oranını belirlemek ve kapsamlı geriatrik değerlendirme ile uyku kalitesini etkileyen faktörleri incelemektir.

Gereç ve Yöntem: Çalışmamız 01 Mart-30 Nisan 2018 tarihleri arasında Samsun ilinin en büyük iki huzurevinde yapıldı. Katılımcı bireylerin uyku kalitesi Richard's Campbell Uyku Ölçeği (RCSQ) ve Epworth Uykululuk Ölçeği (ESS) ile değerlendirildi. Çalışmamızdaki bu bireyler Geriatrik Depresyon Ölçeği (GDS), Mini Mental Durum Testi (MMSE), Kısa Form 36 Yaşam Kalitesi Ölçeği (SF-36), Charlson Komorbidite İndeksi (CCI) kullanılarak değerlendirildi. Elde edilen veriler SPSS 23.0 ile analiz edildi ve $p<0.05$ anlamlı kabul edildi.

Bulgular: Çalışmaya toplam 84 kişi dahil edildi ve ortalama yaş 77,06 ± 7,97 yıldı. Çalışmaya katılan bireylerin %23,8'i RCSQ değerlendirmesine göre geceleri kötü uyku kalitesine ve %42,9'u ESS'ye göre artmış gündüz uykululuk durumuna sahipti. GDS skorları ile RCSQ ve ESS skorları arasında istatistiksel olarak anlamlı fark vardı (sırasıyla; $p<0,001$, $p=0,001$). Depresif semptomların varlığı gece uyku kalitesi ve gündüz uykululuk durumu ile ilişkiliydi. MMSE ve RCSQ skorları arasında istatistiksel olarak anlamlı bir fark bulundu ($p=0,014$). Demans varlığı, gece uyku kalitesiyle ilişkiliydi.

Sonuç: Depresif semptomların varlığının gece kötü uyku kalitesine ve gündüz uykululuğunun artmasına neden olduğu saptanmıştır. Demansı olan kişiler, geceleri kötü uyku kalitesine sahipti. Yaşam kalitesinin düşük olmasının gece kötü uyku kalitesi ve gündüz uykululuğunun artması ile ilişkili olduğu tespit edilmiştir.

Anahtar Kelimeler: Yaşlı, Uyku, Depresyon.

INTRODUCTION

Aging is the sum of the events occurring with a genetic program and leads to structural and functional changes on the organism with the effect of environmental factors. World Health Organization (WHO) defines old age as "decreased ability to adapt to environmental factors" (1). Aging is a process that affects both sleep quality and amount of sleep. Sleep disorders are a common complaint among patients of all ages, but research suggests that elderly adults are particularly vulnerable (2). Studies suggest that the frequency of sleep disorders in the elderly compared to the adult population increases and this rate reaches 50% (3). It is reported that sleep disorders are observed in 65% of the elderly who stay in long-term care facilities such as nursing homes (4).

The most frequent sleep problems in old age are reported as having trouble in falling asleep, waking up frequently, waking up very early, need to sleep constantly, and not feeling rested when awakened. Impairment of sleep quality causes sleepiness, fatigue, depression, irritability, pain, muscle tremors, decreased mental functions, and also general health and functional condition in the elderly (5). The studies have shown lower glucose tolerance, elevated blood pressure and increased incidence of stroke and psychiatric illness in older adults suffering from sleep disturbances compared to those who have good-quality sleep (6, 7). Also, sleep disorders in elderly people are associated with an increased risk of falls, substance abuse, negative self-health assessment, and low quality of life (8).

Several changes occur with age that lead to increased risk for sleep disorders, including increased prevalence of medical conditions and medication use, age-related changes in various circadian rhythms, and environmental and lifestyle changes, and all of these have a significant impact on sleep quality (9). Disruptions in daily routines due to retirement along with low levels of physical activity and reduced sunlight exposure may contribute to changes in circadian sleep rhythm (9, 10).

In older adults, sleep disorders are influenced by several factors, including primary sleep disturbances (such as sleep apnea, periodic sleep movements, and restless legs syndrome) or secondary to physical illness, psychiatric conditions, pharmacological interactions or psychosocial factors (11, 12). There is a shift in sleep rhythm in older persons. They usually tend to fall asleep and wake up earlier than younger adults (13). The time to fall asleep is prolonged. Sleep latency does not increase in parallel with age. It starts after the age of 30 and then it plateaus, the second phase of sleep latency increase occurs after the age of 50. Even if the reduction in the amount of sleep is not detected, it is determined that the sleep pattern changes and the quality of sleep decreases (14). Aging-related sleep pattern changes lead to an overall decrease in sleep efficiency with less total sleep time, the reduced time spent in deeper non-rapid eye movement (NREM) sleep stages, and also in rapid eye movement (REM) sleep. Furthermore, higher number of night awakenings result in increased sleep interruption (12, 15)

Given that sleep disorders may increase the risk for various medical illnesses and psychiatric conditions, it is important to identify behavioral and environmental factors. Strategies based on modifying such factors can be adopted to improve sleep quality in the elderly. Our study aims to provide statistics about the rate of sleep disorder among elderly individuals living in a nursing home and investigate the factors that cause impaired sleep quality.

MATERIAL AND METHODS

This cross-sectional, descriptive study research was carried out in Samsun Metropolitan Municipality Nursing Home and Samsun Nursing Home Care and Rehabilitation Center with 84 people between March 1st 2018 and April 30st 2018. Ethics committee approval was obtained with the Ethics Committee Decision dated January 23st 2018 and No. 2 of the Health Sciences University Samsun Training and Research Hospital Ethics Committee.

Each person was first informed about the content of the study and their consent was obtained that they voluntarily participated in the study. The criteria to participate in the study are age of 65 and over, being conscious and not having communication problems, being literate.

The socio-demographic characteristics, diseases, and medications used and the duration of stay in the nursing home were evaluated. In our study, Richard-Campbell Sleep Questionnaire (RCSQ) was used. In addition, Epworth Sleepiness Scale (ESS) was used to assess daytime sleepiness. For comprehensive geriatric evaluation, Short Form 36 Health Survey (SF-36), Mini-Mental State Examination (MMSE), Geriatric Depression Scale (GDS), Charlson Comorbidity Index (CCI) were used.

RCSQ, which is used for the evaluation of night sleep quality, was developed by Richards in 1987 and is a 6-item scale that evaluates the depth of night sleep, falling asleep, frequency of awakening, the awake time when awakened, the quality of sleep and the noise level in the environment. A score between 0 and 25 obtained from the scale indicates very poor sleep, while a score between 76 and 100 indicates very good sleep (16). Adaptation of the RCSQ to Turkish, its validity and reliability studies were carried out by Ozlu in 2010 (17).

ESS is a test used to show daytime sleepiness. In this survey, the possibility of falling asleep in certain situations is questioned on a

normal day when the patient is not overly tired. If the total score is 10 or above, it indicates the presence of excessive daytime sleepiness. Turkish validation study of ESS was performed and the Turkish version was reported to be effective in showing daytime sleepiness (18).

Statistical Analysis: The data were analyzed with SPSS 23.00. Compatibility with normal distribution was examined with Shapiro Wilk. Independent samples Student t-test was used to compare normally distributed data. Mann Whitney-U test and Kruskal Wallis-H test were used in the use of non-normally distributed data. Categorical data were examined by Chi-square test and the relationship between variables was examined by Spearman rank correlation. The results of the analysis are presented as mean ± standard deviation for quantitative and normally distributed data, and as median (min-max) for non-normally distributed data. Categorical data are expressed as frequency (percent). Statistical significance was accepted at $p < 0.05$.

RESULTS

The total number of persons participating in the study was 84 and 26.2% (n=22) were women. In terms of age groups, 50% (n=42) were in the advanced elderly (75-84) category.

The average age of the participants was 77.06 years. The duration of the individuals staying at the nursing home, their average weight and height, their BMI and their comorbidity status are shown in Table 1.

According to the RCSQ scores of the participants, very poor sleep quality was found in 23.8% (n = 20). In the daytime sleepiness analysis, it was observed that 42.9% (n = 36) show increased daytime sleepiness. It was determined that 20.2% (n=17) of the individuals participating in the study had moderate depression and 9.5% (n=8) had severe depression (Table 1).

GDS scores show significant differences between male and female participants (p=0.015). While 51.6% (n = 32) of men had no depression, 40.9% (n = 9) of women had moderate depression. The median value of the GDS varies based on the gender (p=0.036). The median values were 4 and 7 for men and women, respectively (Table 2).

A positive and weak level correlation was found between ESS and age range and BMI (rho=0.223, p=0.034, rho=0.220, p=0.044, respectively).

A statistically significant correlation was detected between ESS and physical function, physical role difficulty, general health status, energy vitality, and mental health scores, which were among the SF 36 scale sub-dimensions (rho=-0.343, p= 0.001, rho=-0.308, p=0.004, rho=-0.258, p=0.018, rho=0.226, p=0.038, rho=-0.233, p=0.033) (Table 3).

The median value of ESS does not differ statistically between the groups of comorbid diseases. The median value of ESS differs between the categories of depression (p=0.001) (Table 4).

The GDS and MMSE median values show a statistically significant difference between RCSQ scores (p<0.001, p=0.014, respectively) (Table 5). The presence of depressive symptoms and dementia was found to be associated with poor sleep quality at night.

A statistically significant difference was found between the RCSQ scores and all subgroups of the SF-36 quality of life scale (Table 5). The low quality of life was found to cause poor sleep quality at night.

DISCUSSION

It is known that with the aging process, some changes occur in the normal sleep pattern, more specifically, the quality of sleep decreases and the complaints of sleeplessness increase (19). It has been determined that sleep disorders affect elderly individuals biologically, socially and psychologically. These changes can affect daily life and even cause life-threatening accidents.

In our study, it was determined that 23.8% of elderly individuals had poor sleep quality and 42.9% of them had increased daytime sleepiness. Siddiqui et al. reports that 51.6% of the participants in their study had poor sleep quality at night and 26.5% of them increased daytime sleepiness (2). In the study of Silva et al. in Portugal, individuals staying in nursing homes had poor sleep quality compared to individuals outside of the institution. It was found that individuals staying in the nursing home had more daytime sleepiness as evaluated using ESS (12). As a result of the study carried out on more than 9,000 people aged 65 and over by the National Aging Institute, it was found that 28% of the elderly individuals had problems in falling asleep and 48% had difficulty in falling asleep and maintaining sleep (5). In a study conducted in nursing homes in Turkey by Eser et al., 60.9% of the elderly reported having low sleep quality (20). Compared to the results of these studies, the rate of elderly individuals with poor sleep quality in our study was found to be lower. The Pittsburgh Sleep Quality Index was used in the evaluation of sleep quality at night in most of these studies. However, sleep quality questionnaires except for the RCSQ have some disadvantages: They have a large number of items (15–27) therefore, it is not easy for older adults to answer them (21). On the other hand, a simple five-item questionnaire (RCSQ) has been used in our study. Since mental, psychological, comorbidity status and quality of life assessments are also taken into account, it was easier to answer the questions for older people staying in the nursing home.

Table 1. Descriptive characteristics of elderly people (n=84)

Variables	Frequency (n)	Percent (%)
Age		
Young old	30	35.7
Advanced elderly	42	50.0
Very old elderly	12	14.3
Gender		
Male	62	73.8
Female	22	26.2
Marital status		
The Married	4	4.8
Single	6	7.1
Divorced	7	8,3
Widow	67	79.8
Educational status		
Literate	26	31.0
Primary high school	46	54.8
High school	8	9.5
University	4	4.8
Use of auxiliary tools		
Not	29	34.5
Walking stick	11	13.1
Crutches	3	3.6
Well chair	10	11.9
Glasses	31	36.9
Drug use status		
No Drugs	7	8.3
Use medication from time to time	9	10.7
Use regular medication <4	34	40.5
Do not use regular medication >4	34	40.5
Comorbidity		
<3	71	84.5
>3	13	15.5
Hypertension		
Yes	43	51.2
No	41	48.8
Coronary artery disease		
Yes	8	9.5
No	76	90.5
Heart failure		
Yes	22	26.2
No	62	73.8
Diabetes Mellitus		
Yes	32	38.1
No	52	61.9
Cerebrovascular disease		
Yes	3	3.6
No	81	96.4
Parkinson disease		
Yes	1	1.2
No	83	98.8
Chronic obstructive pulmonary disease (COPD)		
Yes	8	9.5
No	76	90.5
Cancer		
Yes	2	2.4
No	82	97.6
Musculoskeletal diseases		
Yes	5	6.0
No	79	94.0
Richard Campbell Sleep Questionnaire		
Very bad sleep	20	23.8
Normal sleep	26	31.0
Very good sleep	38	45.2
Epworth Sleepiness Scale		
Normal	31	36.0
Normal but increased daytime sleepiness	17	20.2
Increased but moderate daytime sleepiness	10	11.9
Increased moderate daytime sleepiness	14	16.7
Increased severe daytime sleepiness	12	14.3
Geriatric Depression Scale		
No depression	37	44.0
Mild depression	22	26.2
Moderate depression	17	20.2
Severe depression	8	9.5
Mini-Mental State Examination		
Serious cognitive impairment	30	35.7
Moderate cognitive impairment	25	29.8
No cognitive impairment	29	34.5

Table 2. Comparison of scales stated based on gender

	Male	Female	Test statistics*	p
Richard Campbell Sleep Questionnaire	71(10-96)	60(10-94)	U=575.0	0.276
Epworth Sleepiness Scale	9(0-21)	7.5(0-19)	U=631.5	0.606
Geriatric Depression Scale	4(0-14)	7(0-13)	U=887.5	**0.036**
Mini-Mental State Examination	22(5-29)	17(8-27)	U=493.5	0.055

*Mann–Whitney U test

Table 3. Correlation analysis of Epworth Sleepiness Scale with the specified variables and SF-36 subscales

		Epworth Sleepiness Scale
Age	r	**0.231**
	p	**0.034**
Gender	r	-0.057
	p	0.609
Duration of stay in the nursing home	r	0.062
	p	0,577
Body Mass Index	r	**0.220**
	p	**0.044**
Mini-Mental State Examination	r	-0.210
	p	0.055
Physical function	r	**-0.343**
	p	**0.001**
Physical role difficulty	r	**-0.308**
	p	**0.004**
Emotional role difficulty	r	-0.121
	p	0.271
Energy vitality	r	**-0.226**
	p	**0.038**
Mental health	r	**-0.233**
	p	**0.033**
Social functionality	r	-0.195
	p	0,075
Pain	r	-0.175
	p	0.112
General health perception	r	**-0.258**
	p	**0.018**

r: Spearman rank correlation coefficient

Table 4. Correlation analysis of Epworth Sleepiness Scale with specified scale scores

	Median (min-max)	Test Statistics	P
Geriatric Depression Scale			
No depression	4(0 -21)	χ^2=16.740	**0.001**
Mild depression	14.5(3 -17)		
Moderate depression	9(0 -19)		
Severe depression	12(0 -18)		
Mini-Mental State Examination			
Serious cognitive impairment	12(0 -21)	χ^2=4.769	0.092
Moderate cognitive impairment	6(0 -15)		
No cognitive impairment	9(0 -17)		
Drug use status			
No Drugs	6(0 -11)	χ^2=3.205	0.361
Use medication from time to time	6(0 -16)		
Use regular medication <4	8(0 -19)		
Do not use regular medication >4	10(0 -21)		
Comorbidity			
<3	13(0 -17)	U*=375.0	0.283
>3	8(0 -21)		

χ^2 : Kruskal- Wallis test; *Mann–Whitney U test

Table 5. Correlation analysis of Richard Campbell Sleep Scale with specified scale and SF-36 subscales

	Very bad sleep	Normal sleep	Very good sleep	Test Statistics	p
Duration of stay in the nursing home	48(1 -144)	48(2 -108)	48(6 -132)	χ^2=0.424	0.809
Geriatric Depression Scale	10.5(7 -14)	4(0 -11)	3(0 -12)	χ^2=35.188	**<0.001**
Mini-Mental State Examination	18.5(7 - 24)	23.5(5 - 27)	21.5(7-29)	χ^2=8.473	**0.014**
Physical function	15(0 - 65)	50(0 - 100)	60 (0 - 100)	χ^2=12.594	**0.002**
Physical role difficulty	0(0 - 100)	50(0 - 100)	50 (0 - 100)	χ^2=12.011	**0.002**
Emotional role difficulty	0(0 - 100)	66(0 - 100)	83 (0 - 100)	χ^2=14.438	**0.001**
Energy vitality	12.5(0 - 45)	47.5(4 - 95)	45 (0 - 85)	χ^2=24.756	**<0.001**
Mental health	34(4 - 44)	62(12 - 92)	56 (24 - 84)	χ^2=27.994	**<0.001**
Social functionality	50(0 - 100)	81(12 - 100)	75(25 -100)	χ^2= 16.917	**<0.001**
Pain	32(10 - 100)	90(22 - 100)	85(10 -100)	χ^2= 16.036	**<0.001**
General health perception	27.5(10 - 85)	60(20 - 95)	70(15 - 90)	χ^2=17.013	**<0.001**

χ^2: Kruskal- Wallis test

In our study, a significant statistical correlation was not found between gender, marital status, educational status, length of stay in the nursing home and sleep quality of the elderly. Only a positive weak significant correlation was found between daytime sleepiness and the age range (p=0.034). The lack of correlations can be attributed to the limited data space and therefore more detailed analysis can be made with more participants. In the study conducted by Rocha et al., the prevalence of sleeplessness was higher for women than men of all age groups (22). A possible explanation for female preponderance in this age group is physiological and psychological changes which are coupled with menopause. A study conducted to explore this association found that perimenopausal and post-menopausal women have frequent sleep disorders (23). A study in Finland found that symptoms of insomnia increase with age. However, it has been suggested that this situation is not due to the aging process, but rather due to the comorbidity that increases with age (24). One of our hypotheses in our study is that comorbidity and sleep quality may be related. Analysis was made between comorbidity scoring and RCSQ and ESS mean median and it was not found statistically significant. A wide-scale study with larger number of participants than ours is needed. Comorbid diseases (Hypertension, Coronary Artery Disease, Congestive Heart Failure, Diabetes Mellitus, Cerebrovascular disease, Parkinson's disease, COPD, Cancer) were compared with individual sleep scale scores in our study. No statistical relation was found using both scale scores. Neubauer et al. reported that comorbid diseases such as cardiovascular diseases, diabetes, obesity, dementia, depression, Parkinson's disease, arthritis and lung diseases cause poor sleep quality (25). In a study conducted in Pakistan, the prevalence of sleep disorders was found to be higher in people with coronary artery diseases (2). A study of frequent sleep disorders among the elderly with heart disease and coroner artery disease further augmented the result of a trial that found sleep disorders to be a risk factor for coronary artery calcification, especially when coupled with obstructive sleep apnea (26). In a study conducted by Cuellar et al., it has been stated that the medications started for the treatment of comorbid conditions may cause daytime sleepiness as well as further deterioration of night sleep (27). In our study, significant effect was not observed by polypharmacy. Although there was no significant effect of BMIs on night sleep quality, a positive weak significant correlation was observed between BMIs and daytime sleepiness rates. In the study conducted by Goktaş et al., it was reported that as the BMI increases, sleep quality deteriorates, and obese individuals have a bad sleep quality with a rate of 61.2% (28). Obesity is associated with an increase in neck circumference, and fat accumulation narrows the upper airway, which is responsible for the higher incidence of airway collapsibility in obese patients compared to normal-weight individuals. The studies have proven that weight loss is effective in reducing the severity of sleep apnea; 10-15% reduction in body weight reduces sleep apnea by up to 50% (29).

Individuals with and without risk of depression were classified with the GDS. Analysis was made by using RCSQ and ESS median. A significant statistical difference was found in the median of both scales in the presence of depression risks. Psychiatric disorders such as major depression, panic disorder, and generalized anxiety disorder are strongly linked to sleep disorders (2). A positive correlation was found between ESS and GDS scores in the study of Silva et al. (12). Studies show that daytime sleepiness and depressive symptoms are strongly associated (30, 31). Individuals diagnosed with depression are more likely to experience fatigue and daily sleepiness (30). In a comprehensive study conducted by Gindin et al. in 8 countries, sleep disorders in elderly individuals were found to be highly

correlated with depression (p<0.001) (32). In our study, poor sleep quality was found to be associated with depressive symptoms in accordance with the studies in the literature. Depression and sleep quality have a two-way relationship. While one area of symptoms in depressive disorders is related to sleep changes (insomnia / hypersomnia) with increased risk of developing sleep disorders, poor sleep quality strongly contributes to the onset of depression in the elderly (33).

Another hypothesis of our study is that dementia may be associated with sleep disorders. In our study, MMSE was applied to the participants, and the median value showed a statistically significant difference according to the RCSQ scores (p=0.014). In the study conducted by Criocco et al, it was observed that the rate of dementia increased in elderly individuals with sleeplessness (34). In the study of Siddiqui et al., higher ESS scores were found in patients with dementia (2). The relationship between dementia and aging-related sleep disorders is thought-provoking. The cause of sleep disturbance in elderly people suffering from dementia is a change in circadian rhythm. Melatonin treatments have proven beneficial in treating both dementia and sleep disorders (35).

In our study, the relationship between elderly people's quality of life and sleep disorder was also evaluated. The data obtained using both sleep scales in our study shows that the low quality of life of elderly persons living in the nursing home negatively affects sleep quality and daytime sleepiness. In a study conducted by Schubert et al. with 2800 participants, a statistically significant linear relationship was found between the poor sleep quality and all sub-dimensions of the quality-of-life scale (36). In a study conducted by Hayashino et al. with the participation of 3403 people in Japan, it was found that poor sleep quality and quality of life scale of the individuals were associated with the mental health subgroup (p<0,001) (37). Poor sleep quality in the elderly contributes to increased daytime drowsiness and decreased daytime functioning, resulting in reduced participation of the elderly in daytime occupational activities and diminished levels of physical activity (38).

As seen in our study and other studies, sleep quality and daytime sleepiness were found to be directly related to the quality of life. In order to correct the sleep disorders of the elderly, it is necessary to find solutions that will improve their quality of life. Furthermore, in order to increase the social interaction between elderly people in nursing homes, social activities such as introductory meetings should be organized, and healthy communication between residents should be supported. It is recommended that older individuals are psychologically supported and regularly interviewed by institutional psychologists. If necessary, referring to psychiatry and getting necessary treatment can help improving sleep quality. It is important to prevent the elderly from feeling isolated and lonely through organizing various social activities. Persons with pain should be supported by medical or psychological treatment. Elderly people in the nursing home should be provided proper nutrition and informative trainings (39).

CONCLUSION

In summary, in our study, sleep disorders of elderly people living in nursing homes were evaluated, poor sleep quality at night and daytime sleepiness were found to be an important problem. The presence of depressive symptoms was found to cause poor sleep quality at night and increased daytime sleepiness. People with dementia have low sleep quality at night. The low quality of life was found to cause poor sleep quality at night and increased daytime sleepiness. Elderly people should be supported without delay about their mental, psychological, and medical diseases. It is envisaged that increasing the quality of life, ensuring a positive mood, early diagnosis, and treatment of medical diseases can improve the sleep quality of elderly people.

Conflict of interest: The authors declare they have no conflict of interest related to the research.

Funding: This study received no funding.

Informed consent: Informed consent was obtained from all individual participants included in the study.

Limitations: The limitation of the study is that the number of participants of the study was small. The fact that this study is not planned in larger groups as a multi-center study shows our limitations.

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