

ORIGINAL ARTICLE

Evaluation of the Effect of COVID-19 Pandemic on Sleep Quality and Depression Status of Dementia Patients

COVID-19 Pandemisinin Demans Hastalarının Uyku Kalitesi ve Depresyon Durumları Üzerine Etkisinin Değerlendirilmesi

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ABSTRACT

Objective: In this study, it was aimed to evaluate the sleep quality and depression status of dementia patients during the COVID-19 pandemic.

Materials and Methods: Patients aged 65 and over with dementia who applied to our polyclinics or those who can be reached from their relatives and those who agreed to participate in our research; a questionnaire consisting of sociodemographic information, "Cornell Scale for Depression in Dementia" and "Pittsburgh Sleep Quality Index" was applied.

Results: All of 64 (43.5%) of the participants were male and 83 (56.5%) were female. It was found that 68.7% of the participants had poor sleep quality and 31.3% had good sleep quality. 76.2% of the participants suggested depression, 2.8% did not. Pittsburgh Sleep Quality Index score and Cornell Scale for Depression in Dementia score did not differ according to educational status, occupation and gender.

Conclusion: In periods such as the pandemic period, which may cause behavioral changes and lifestyle changes, efforts should be made to minimize the changes in the depression status and sleep quality of groups with specific diseases such as dementia, and if necessary, the control examination time intervals should be shortened.

Keywords: COVID-19, dementia, depression, sleep quality, geriatrics

ÖZ

Amaç: Bu çalışmada COVID-19 pandemisi sırasında demans hastalarının uyku kalitesi ve depresyon durumlarının değerlendirilmesi amaçlandı.

Gereç ve Yöntem: Polikliniklerimize başvuran/başvurmuş olan demans tanılı 65 yaş ve üstündeki hastalara ya da hasta yakınlarından ulaşılabilenlere ve araştırmamıza katılmayı kabul edenlere; Sosyodemografik bilgiler, "Cornell Demansta Depresyon Ölçeği" ve "Pittsburgh Uyku Kalite İndeksi" nden oluşan anket uygulanmıştır.

Bulgular: Katılımcıların 64'ü (%43,5) erkek, 83'ü (%56,5) kadın idi. Katılımcıların %68,7'sinin uyku kalitesi kötü, %31,3'ünün uyku kalitesinin iyi olduğu bulundu. Katılımcıların %76,2'si depresyonu düşündürmekte, %2,8'i depresyonu düşündürmemekte idi. Pittsburgh Uyku Kalite İndeksi puanı ve Cornell Demansta Depresyon Ölçeği Puanı öğrenim durumu, meslek ve cinsiyete göre farklılık göstermemekte idi.

Sonuç: Pandemi dönemi gibi davranış değişiklikleri ve yaşam tarzı değişikliklerine neden olabilen dönemlerde demans gibi özellikli hastalıklı grupların depresyon durumu ve uyku kalitelerinin değişimlerinin en aza indirilmesi için çalışılması, gerekirse kontrol muayenesi zaman aralıkları azaltılması yoluna gidilmelidir.

Anahtar Kelimeler: COVID-19, demans, depresyon, uyku kalitesi, geriatri

Introduction

Dementia; It is a clinical picture characterized by progressive loss of cognitive functions, affecting daily activities and behaviors; Many factors, including sleep quality, can be effective in the progression of the disease during periods that may cause behavioral changes such as pandemic periods. It is known that more than 50 million of the world population is diagnosed with dementia and a new dementia patient emerges every 3 seconds, and these patients mostly consist of the geriatric population. The geriatric population accounts for approximately 30% of COVID-19 cases (1-4).

Sleep and sleep quality in the elderly are affected by many conditions; these include delirium, dementia, depression, and anxiety. In dementia, sleep/wake cycle disruption can occur with daytime sleepiness

and drowsiness. Common sleep disorders in elderly depressive patients are difficulty in falling asleep and waking up early in the morning. It is also characterized by sleep disturbance, difficulty in falling asleep and waking up frequently during the night in the elderly with anxiety disorder and/or depression (3-7). This study was planned to evaluate the sleep quality and depression levels of dementia patients during the COVID-19 pandemic period.

Material And Method

The research was a survey study and carried out with observational methods. Those who have applied to our Hacettepe University Family Medicine Polyclinics before, and patients aged 65 and over with a diagnosis of Dementia or their relatives/caregivers (by phone

or face-to-face meeting) and obtaining informed consent from those who agreed to participate in our research; In the first part, a questionnaire consisting of 4 questions evaluating sociodemographic information was applied, and in the second part, a questionnaire consisting of "Cornell Scale for Depression in Dementia" and "Pittsburgh Sleep Quality Index" was applied. Necessary permissions were obtained for the use of the questionnaires. Before starting the study, T.C. Ethical approval was obtained from the Ministry of Health General Directorate of Health Services Scientific Research Platform with the form number 2021-04-02T11_04_04 and from the Hacettepe University Non-Interventional Clinical Research Ethics Committee with the decision number 2021/11-14 and project number GO 21/554 (20.04.2021).

Only those in the "mild dementia" group and those who could not be diagnosed with any additional psychiatric disease and whose data were complete were included in the study. The reason for including patients with mild dementia in the study is to ensure that the applied scales give more reliable results. For the diagnosis of mild dementia, the diagnostic tests previously applied to the patients were taken as the basis. Patients with unconfirmed diagnosis of mild dementia underwent relevant testing from the outset.

Cornell Scale for Depression in Dementia (CSDD): The scale was developed by Alexopoulos et al. and filled in by the clinician as a result of separate interviews with individuals with dementia and their caregivers. It consists of 19 items collected in 5 subgroups. Each item is scored as 0, 1, and 2. "0" indicates no symptoms, "1" indicates mild or moderate symptoms, and "2" indicates severe symptoms. A total score of 8 and above suggests depression. The Turkish validity and reliability of the scale, which evaluates mood-related findings, behavioral changes, physical findings, cyclical functions and intellectual changes, was performed by Armuk et al. The Turkish version of the CSDD showed a high internal consistency with an alpha value of 0.864. (8).

Pittsburgh Sleep Quality Index (PSQI): PSQI, developed by Buysse et al. (9), is a 19-item self-report scale that evaluates sleep quality and disturbance in the past month. It consists of 24 questions, 19 questions are self-report questions, 5 questions are questions to be answered by the spouse or roommate. The 18 scored questions of the scale consist of 7 components. Each component is evaluated over 0-3 points. The total score of the 7 components gives the scale total score. The total score ranges from 0 to 21. The scale indicating "poor sleep quality" with a total score greater than 5 was adapted into Turkish by Ağargün et al., and showed a high internal consistency with an alpha value of 0.80 (10,11).

Statistical Method

Data were analyzed with IBM SPSS V23. Conformity to normal distribution was evaluated with the Kolmogorov-Smirnov test. The Mann-Whitney U test was used to compare the data that were determined not to be normally distributed, and the Kruskal Wallis test was used to compare the quantitative data that were not normally distributed according to groups of three or more. Spearman's rho correlation coefficient was used to examine the relationships between data that were not normally distributed. Analysis results mean \pm s for quantitative data. Categorical data as deviation and median (minimum – maximum) were presented as frequency (percentage). Significance level was taken as $p < 0.05$.

Results

A total of 147 participants, 64 (43.5%) male and 83 (56.5%) female, were included in the study. The mean age of the participants was found to be 73.8 ± 5.8 . PSQI score mean was 10 ± 6.5 and the CSDD mean score was 18.2 ± 11.7 . Sociodemographic and general scale score information of the participants are shown in Table 1.

Table 1. Sociodemographic data of the participants

	Frequency (n)	Percent (%)
Gender		
Male	64	43.5
Female	83	56.5
Education status		
Uneducated	4	2.7
Primary school graduate	7	4.8
Secondary school graduate	8	5.4
High school graduate	41	27.9
Associate degree graduate	22	15.0
Graduated from University	40	27.2
Post Graduate	10	6.8
PhD graduate	15	10.2
Profession		
Health employee	12	8.2
Engineer-Architect	8	5.4
Academician	11	7.5
Teacher	17	11.6
Police	22	15.0
Other	77	52.4

It was found that 68.7% of the participants had poor sleep quality and 31.3% had good sleep quality. As a result of the CSDD score of the participants, 76.2% suggested depression, while 2.8% did not (Table 2).

Table 2. PSQI and CSDD group frequencies

	Frequency (n)	Percent (%)
PSQI		
Poor sleep quality	101	68.7
Good sleep quality	46	31.3
CSDD		
Suggestive depression of	112	76.2
Not suggestive of depression	35	23.8

PSQI and CSDD scores do not differ according to educational status, occupation and gender ($p > 0.05$) (Table 3).

Table 3. Comparison of PSQI and CSDD scores according to groups

	PSQI score	CSDD score
	Mean (min-max.)	Mean (min-max.)
Education status		
Uneducated	10 (4 - 12)	8.5 (2 - 19)
Primary school graduate	10 (2 - 17)	10 (0 - 37)
Secondary school graduate	14.5 (7 - 16)	23.5 (1 - 35)
High school graduate	11 (0 - 21)	21 (0 - 38)
Associate degree graduate	6.5 (0 - 20)	14.5 (0 - 37)
Graduated from University	14.5 (0 - 21)	20.5 (5 - 36)
Post Graduate	11 (0 - 18)	16.5 (1 - 38)
PhD graduate	6 (0 - 21)	18 (0 - 35)
Test Statistics	12.04	5.449
p	0.099	0.605
Profession		
Health employee	11 (0 - 21)	24.5 (1 - 36)
Engineer-Architect	4 (1 - 21)	19.5 (7 - 37)

Academician	3 (0 - 21)	18 (0 - 35)
Teacher	16 (0 - 21)	19 (5 - 36)
Police	7 (0 - 21)	24.5 (0 - 38)
Test Statistics	6.174	3.857
p	0.290	0.570
Gender		
Male	9 (0 - 21)	16.5 (0 - 38)
Female	11 (0 - 21)	19 (0 - 38)
Test Statistics	U= 2905.0	U=2911.0
p	0.330	0.319

U: Mann-Whitney U test statistic, :Kruskal Wallis test statistic

There is no statistically significant correlation between age and PSQI and CSDD scores ($p > 0.05$) (Table 4).

Table 4. The relationship between age and PSQI and CSDD scores

	PSQI	CSDD
Age	r	-0.044
	P	0.599

r: Spearman's rho correlation coefficient

There is no statistical relationship between PSQI and CSDD scores ($p > 0.05$) (Table 5).

Table 5. The relationship between PSQI and CSDD scores

	PSQI	CSDD
PSQI	r	-0,055
	p	0,506

r: Spearman's rho correlation coefficient

Discussion

Although pandemics have been experienced throughout the historical ages, each pandemic is unique with features such as contagiousness, infection rate and death rate. The COVID-19 pandemic is also different because it is the pandemic of the current century. Therefore, studies on this pandemic are still being carried out. Therefore, we hope that our study will add new information about the COVID-19 pandemic to the literature.

However, since our study was conducted during the COVID-19 pandemic period, difficulties were encountered in reaching dementia patients; although the scales applied can be applied to patient relatives or caregivers, unfortunately, the

number of our participants has been limited due to the pandemic period. Another limitation of our study is that the additional chronic disease comorbidities of the participants were not included in the study. At the same time, since the pre-pandemic scale scores of the participants are not known, our study is not a comparative evaluation, it is a cross-sectional study and it would not be correct to generalize.

In a study conducted in the geriatric population, the average of PSQI was found to be 6.2 ± 3.3 , there are studies close to this average in other studies, and in our study, the average of PSQI was found to be 10.0 ± 6.5 higher for the same age group during the pandemic period (12,13). The pandemic period can cause psychiatric diseases such as anxiety and depression, which makes us think that this is due to worsening sleep quality.

According to the study conducted in Turkish elderly people with a mean CSDD score of 9.44 ± 6.3 , the average we found for the same scale in our study was 18.2 ± 11.7 (8). In similar studies, the mean score of the scale was found to be around 8-10 points (14). This suggests that we included those with a previous diagnosis of depression in our study and that it was the pandemic period, which was the period in which we conducted the study.

In the study of Bilgili et al., education level, income status, having children, presence of chronic diseases, visitor visits, and length of stay in a nursing home were found to be associated with sleep quality (12). Contrary to this study, sleep quality did not differ according to age, education level, occupation and gender in our study during the pandemic period.

In the review of Keskin and OK, no specific finding was found in sleep studies performed in mental disorders (15). Although it was conducted during the pandemic period and for the geriatric age group, similarly, no relationship was found between depression and sleep levels in our study.

However, with aging, changes in sleep patterns occur, such as early sleep and a decrease in the time spent in sleep, and frequent awakenings at night. These changes may lead to a decrease in the sleep quality of the individual, resulting in an increase in complaints about fatigue (16). Complaints such as fatigue can also lead to situations such as not being able to enjoy life in the future.

Conclusion

It is necessary to approach all age groups with particular chronic diseases more carefully during pandemic periods, which are periods that can cause lifestyle and behavioral changes. It is necessary to try to control chronic diseases as much as possible during these periods. During these periods, care should be taken, especially for the geriatric population. Special attention should be paid to the sleep quality and

depression status of geriatric dementia patients. Thus, efforts should be made to prevent the deterioration of their quality of life and to minimize the effects of the pandemic. However, this will prevent the occurrence of irreversible health problems in the future.

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