

ORIGINAL
INVESTIGATION

Sleep Quality and Factors Affecting It in Patients with Chronic Psychiatric Disorders

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ABSTRACT

Objective: The study aimed to determine sleep quality and factors affecting it in patients with chronic psychological disorders.

Materials and Methods: The research was conducted at Gevher Nesibe Medical Faculty Hospital of Erciyes University between March 10th, 2009 and April 10th, 2009. In total, 132 patients with psychiatric disorders were included, and all the patients were asked to fill the Pittsburgh Sleep Quality Index (PSQI) and Personal Information Forms.

Results: According to the data obtained, the mean scores of PSQI were as follows: sleep duration, 1.17±1.09 h; sleep efficacy, 1.23±0.97; daytime dysfunction, 1.40±1.01; sleep disorder, 1.16±0.83; sleep latency, 2.80±1.58; sleeping pills, 1.35±0.76; and global PSQI, 9.13±2.37. In total, 93.2% of the patients were found to have a bad sleeping quality. As the global PSQI scores increased, sleeping time, sleeping pill use, sleeping quality, sleeping activity, sleep latency, and daytime dysfunction scores also increased ($p<0.05$). In addition, there was a positive correlation among them. The correlation between the global PSQI scores and marital status and between the place of residence and occupational-professional status was found to be significant ($p<0.05$).

Conclusion: As patients with chronic psychiatric disorders have frequent sleep problems, planning interventions for the sleep problems of patients can be recommended.

Keywords: Chronic psychiatric disorders, sleeping quality, psychiatric clinic, patient

INTRODUCTION

Sleep is a state of temporary, partial, and periodic communication loss of an organism with its surroundings that can be reversed by stimuli of varying intensities. Physical and psychological health depends on meeting basic necessities such as sleep (1, 2). Sleep quality comprises concepts such as sleep latency, total sleep duration, and regular sleep routine. Sleep quality is important as it is an indicator of many diseases (3, 4). Decreased sleep quality may cause emotional, mental, and motivational disorders.

Sleep-associated problems cause morbidity, increase in mortality, and decreased life quality. Sleep problems are important for patients with psychiatric disorders as for all hospitalized individuals. Epidemiological studies conducted in the general population indicate a positive correlation between psychopathology and sleep disorders. It is stated that the incidence of a sleep disorder in patients with psychiatric diagnoses varies between 50% and 80%. Sleep disorders are quite common in patients with anxiety, depression, bipolar disorder, and hyperactivity (2-6).

Insufficiency of sleep quality in individuals with psychiatric disorders may cause an occurrence of signs such as tiredness, concentration loss, hallucination, delusion, and loss of interest. Additionally, inpatients receiving treatment in psychiatric clinics often complain about sleep disorders (5, 6). These patients usually mention subjective sleep complaints such as shortened duration of sleep duration, increased duration of falling asleep, frequent awakening, and failure of having deep sleep (7, 8). It is known that inpatients have a variety of sleep disorders because of both environmental and personal reasons. Common environmental factors leading to sleep disorders are noise, bright light, and recurrent staff interventions. Moreover, endogenous factors for these patients are delirium, depression, stress, and pain (9-11).

Sleep problems are frequently seen in patients having psychiatric disorders, and decrease in sleep duration, frequent awakening, and change in sleep stages are indicated in objective sleep assessment. These sleep disorders added to their chronic diseases further lowers the functional living and life qualities of the patients (12-14).

Handling sleep and sleep disorders, which are common problems among hospitalized individuals, constitute a part of care. The identification of individuals having sleep disorders and factors affecting sleep are important in the care process with regard to planning nursing intervention (8, 11, 15).

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The findings obtained from this study may be used for planning nursing intervention. This study was conducted to identify the factors affecting sleep quality in patients with chronic psychiatric disorders.

MATERIALS and METHODS

Population sample of the research

The research was descriptively conducted in a total of 132 patients, 62 of whom were followed in the outpatient clinic, and 60 of whom were inpatients in the psychiatric clinic at Gevher Nesibe Medical Faculty Hospital of Erciyes University (EU). Written consents of the EU Atatürk Health Faculty Academic Committee, Gevher Nesibe Hospital, and Department of Psychiatry and verbal consents of the patients were obtained. The data were gathered by the researchers in a face to face interview of the patients.

For the purpose of identifying a sample group based on the selection criteria of the research, sample calculation was conducted considering sample numbers of similar studies (5, 11). After gathering the data, in the power analysis made for the scales used in the research, $\alpha=0.05$ and its power were found to be 100%, and the sample number was found to be sufficient.

Research sample selection criteria:

- Being between the ages of 15 and 65 years
- Being followed-up for any psychiatric diagnosis for the last one year (schizophrenia, psychotic disorder, and depression)
- Bipolar disorder, alcohol or drug use disorders, and panic disorder
- Being followed-up as an outpatient or treated as an inpatient in a psychiatric clinic

Measurement devices used in the research

Having the original name Pittsburgh Sleep Quality Index (PSQI), the PSQI Form and Descriptive Features Form were applied to the patients included in the research.

Descriptive Features Form: This form contains 12 questions. In this form, there are questions to evaluate the socio-demographic characteristics of the patients, disease diagnosis, and duration and drug use properties.

Pittsburgh Sleep Quality Index: The validity and reliability of the scale developed by Buysse et al. (4) in Turkish was conducted by Ağargün et al. (3) PSQI is a self-report scale with 19 titles assessing sleep quality and disorders over the last month. Each title of the test was equally scored between 0 and 3. The scale comprises seven subscales assessing subjective sleep quality, sleep latency, sleep duration, habitual sleep activity, sleep disorders, sleeping pill use, and daytime functionality loss. A total PSQI score between 0 and 21 was obtained by adding the subscales. The sleep quality of those having a total score of 5 and below is assessed as "good" and those having a total score of above 5 is assessed as "poor." A total PSQI score being above 5 indicates that the sleep quality is insufficient with 89.6% sensitivity and 86.5% specificity and a medium level of dysfunctioning in at least two or three of the above subscales. The Cronbach alpha value of this study was found to be 0.80.

Statistical analysis

The analysis of the data was evaluated by the package software of IBM SPSS Statistics 20.0 (IBM SPSS Inc, Chicago, IL, USA),

and $p<0.05$ was accepted to be statistically significant. In the assessment of data percentage distribution, arithmetic mean, correlation, one-way analysis of variance (ANOVA), Kruskal-Wallis, Mann-Whitney U tests, and Pearson correlation analysis were used.

RESULTS

It was found that of the individuals who participated in the research, 64.4% were female, 19.7% were between the age groups of 22-28 and 42-48, 57.6% were married, 39.4% graduated from primary school, and 45.4% were housewives. It was also found that 50.8% of the participants had a health insurance from SSK and that 62.2% lived in the provincial center of Kayseri (Table 1).

Statistical analyses were conducted between the PSQI general mean scores and socio-demographic characteristics of the patients. According to the findings obtained from the analyses, it was found that the PSQI general mean scores of the patients who were married, who were housewives, and who live in the provincial center were higher and that the correlation between them was statistically significant ($p<0.05$). The subscales of PSQI and some variables were examined, and the correlation between subjective sleep quality scores, marital status, education level, disease diagnosis, and profession was statistically significant ($p<0.05$).

It was found that of the individuals who participated in the research, 51.5% were inpatients, 42.4% were followed with depression diagnosis, 37.8% had a disease duration of 1 year, 40.9% had never been hospitalized in the psychiatric clinic, 70.5% continuously used drugs, and 44.7% did not use their drugs on a regular basis. The ratio of patients having a good sleep quality was 6.8%, and the ratio of those having a poor sleep quality was 93.2% (Table 2).

The difference of sleep quality general mean scores of the inpatients (9.22 ± 2.37) and outpatients (9.04 ± 2.39) was not statistically significant ($p>0.05$) (Table 3).

According to the data obtained from the study, Pittsburgh sleep quality mean scores were found to be 9.13 ± 2.37 for PSQI general score, 1.16 ± 0.83 for sleep disorder score, 2.80 ± 1.58 for sleep latency score, 1.23 ± 0.97 for sleep effectiveness score, 1.35 ± 0.76 for sleeping pill score, and 1.17 ± 1.09 for sleep duration score (Table 4).

The daytime dysfunctioning and sleep disorder scores of patients who were hospitalized three or more times in a psychiatric clinic for the treatment of their chronic mental disorders and who were still receiving treatment as inpatients and who mentioned that they continuously use drugs for their treatments were higher compared with those of the other patients, and the correlation between them was found to be statistically significant ($p<0.05$). Moreover, the sleep effectiveness scores of the patients having a disease duration of five years or more were found to be low, and sleeping pill scores of female patients were significantly high ($p<0.05$).

DISCUSSION

Problems related to sleep in hospitalized patients cause an increase in morbidity and mortality and a decrease in life quality (16-18). In all hospitalized individuals, sleep disorders are also responsible for having psychiatric impairment. Epidemiological studies con-

Table 1. Distribution of general mean scores based on the descriptive characteristics of the patients (n=132)

Descriptive Characteristics	Number (%)	PSQI general mean score \bar{x} ss	Test
Gender			
Female	85 (64.4)	9.01±2.31	f=0.897
Male	47 (35.6)	9.36±2.49	p=0.253
Age			
15-21	15 (11.4)	9.53±1.88	f=0.995
22-28	22 (19.7)	9.19±2.24	p=0.373
29-35	24 (18.2)	9.00±2.30	
36-41	17 (12.9)	9.41±2.31	
42-48	26 (19.7)	8.57±2.70	
49-55	13 (9.8)	9.30±2.69	
56 and over	11 (8.3)	9.45±2.37	
Marital status			
Single	41 (31.1)	9.31±1.99	f=1.221
Married	76 (57.6)	8.89±2.43	p=0.029
Divorced widow	15 (11.4)	9.86±2.97	
Education status			
Literate	14 (10.6)	9.51±2.27	f=1.666
Primary school graduate	52 (39.4)	9.11±2.08	p=0.162
Secondary school graduate	17 (12.9)	9.53±2.62	
High school	26 (19.7)	8.43±1.82	
University	23 (17.4)	8.14±3.08	
Job-profession			
Public servant	18 (13.6)	7.50±1.38	f=2.498
Retired	13 (9.8)	9.64±2.16	p=0.034
Worker	19 (14.4)	9.23±3.44	
Housewife	60 (45.4)	9.31±2.38	
Unemployed	14 (10.6)	9.89±2.07	
Student	8 (6.1)	8.62±1.92	
Socio-economic status			
No social insurance	6 (4.5)	8.00±3.10	f=2.131
Emekli sandığı	35 (26.5)	8.45±2.29	p=0.081
Bağ kur	17 (12.9)	9.00±2.62	
SSK	67 (50.8)	9.52±2.22	
Green card	7 (5.3)	10.50±2.07	
Living place			
Kayseri provincial center	82 (62.2)	9.36±2.19	f=2.057
Kayseri town center	25 (18.9)	9.24±2.81	p=0.013
Out of Kayseri	25 (18.9)	8.28±2.40	

Table 2. PSQI general mean score distribution according to the patients' characteristics associated with their disease (n=132)

Characteristics Associated with the Disease	Number (%)	PSQI general average score \bar{x} ss	Test
Part of Hospital			
Clinic	68 (51.5)	9.22±2.37	f=0.337
Outpatient clinics	64 (48.5)	9.04±2.39	p=0.830
Diagnosis			
Schizophrenia/psychotic	13 (9.8)	8.81±2.68	f=0.232
Depression	56 (42.4)	9.28±2.33	p=0.920
Bipolar disorder	29 (22.0)	9.27±2.15	
Alcohol or drug use disorder	12 (9.1)	9.00±3.18	
Panic disorder	22 (16.7)	8.83±1.74	
Disease Duration			
1 year	46 (37.8)	9.28±2.34	f=0.751
2 years	20 (15.2)	9.45±2.30	p=0.559
3 years	14 (10.6)	8.96±2.49	
4 years	32 (24.2)	9.40±2.58	
5 years and over	20 (15.2)	8.21±2.08	
Numbers of Hospitalization in Psychiatric Clinic			
First	41 (31.1)	9.13±2.37	f=1.147
Second	15 (11.4)	8.20±2.42	p=0.338
Third	10 (7.6)	9.40±1.77	
Fourth	12 (9.1)	8.50±2.39	
Never hospitalized	54 (40.9)	9.50±2.39	
State of Continuous Drug Taking			
Takes	93 (70.5)	9.15±2.33	f=0.033
Does not take	26 (19.7)	9.03±2.79	p=0.967
Takes sometimes	13 (9.8)	9.23±1.96	
State of Regular Drug Taking			
Takes	45 (34.1)	8.75±2.33	f=1.383
Does not take	59 (44.7)	8.96±2.53	p=0.255
Takes sometimes	28 (21.2)	9.60±2.157	

Table 3. Distribution of PSQI score averages based on good/poor sleep quality (n=132)

Good/Poor Sleep Quality	Number (%)	\bar{x} ss	Min-max
Below 5 (good sleep quality)	9 (6.8)	0.62±0.16	0-2
Over 5 (poor sleep quality)	123 (93.2)	8.50±2.20	1-17

Table 4. Distribution of sleep quality index mean scores of the patients (n=132)

Scale Subscores	\bar{x} ss	Min-max
PSQI General Score (GS)	9.13±2.37	1.00±17.00
Daily Dysfunctioning Score (DDS)	1.40±1.01	0.00±3.00
Sleep Disorder Score (SDS)	1.16±0.83	0.00±2.00
Sleep Latency Score (SLS)	2.80±1.58	0.00±6.00
Sleep Effectiveness Score (SES)	1.23±0.97	0.00±3.00
Sleeping Pill Score (SPS)	1.35±0.76	0.00±3.00
Sleep Duration Score (SDS)	1.17±1.09	0.00±3.00

ducted in the general population show a positive relationship between psychopathology and sleep disorders. It is mentioned that the incidence of any sleep disorder ranges from 50% to 80% in patients diagnosed with a psychiatric disorder. Sleep disorders are quite common in anxiety, depression, bipolar disorder, attention deficit, and hyperactivity (19, 20). Sleep quality is an indicator of many psychiatric diseases and also a cause of these diseases (3, 4). Insufficiency in sleep quality can lead to affective disorder, thought disorder, and lack of motivation (1, 2). In our study, the mean score of sleep quality was found to be 9.13±2.37, and 93.2% of the patients experienced sleep problems. Doğan et al. (11) conducted a study where they used the same scale as Southwell and Wistow and found that the mean score of sleep quality is higher for patients hospitalized in a psychiatric clinic than for patients in other clinics (11, 21). Our results were consistent with those of that study.

It was reported that sleep problems are more severe in patients staying in psychiatric clinics and nursing homes for a long time (2-7, 21, 22). It was revealed that patients hospitalized for treatment sleep more than the average (approximately 7.5 h/night), which affects their discharge from the hospital in a positive way. On the other hand, the reason for patients sleeping less than the average is inadequate sleep time or low sleep quality (19, 23). In studies conducted, the incidence of sleep disorders in psychiatric patients varies between 15% and 35% (1, 22-24). According to the results of this study, no significant difference was found between the mean scores of sleep quality in the inpatients and outpatients ($t=1.564$, $p=0.119$) (Table 2).

In our study, the sleep quality was found to be lower in patients who were in the age group of 15-21 years, who had low educational level, who were retired, who had the green health card, who were diagnosed with depression, who had the disease for 2 years, who used medication sometimes regularly and sometimes irregularly, and who were male. Some of our results were similar to those in other results, whereas others were different. Our findings were consistent with the evidence that long duration of illness, low level of education, being retired, diagnosis of depression, and irregular use of a psychiatric drug are the factors affecting sleep disorders (21-24). In our study, the result showing a poor sleep quality in the age group of 15-21 years and in male patients was inconsistent with those of other studies. Other studies revealed that female patients and patients aged 50 years and over had a poor sleep quality

(18-23). According to the results obtained from the analysis of our study, the mean of PSQI scores of patients who were married, who were housewives, and who lived in the city center were higher, and the relationship among them was statistically significant ($p<0.05$) (Table 3). Different results were obtained in the studies conducted on this issue. While the relationship between the mean of PSQI scores and gender, education, marital status, and the features of living place was found to be significant in some studies (25-28), the factors of age, education, and gender were not significant (7, 11, 26-30). The presence of different results in literature can be explained by the fact that sleep quality can differ individually. Because sleep quality is influenced by many individual and environmental factors, different results on the same issue can be obtained.

Based on data from this study, the mean scores of PSQI scores were found to be 9.13±2.37 for PSQI general score, 1.16±0.83 for sleep disorder score, 2.80±1.58 for sleep latency score, 1.23±0.97 for sleep effectiveness score, 1.35±0.76 for sleeping pill score, and 1.17±1.09 for sleep duration score (Table 4). According to the results obtained in other studies, the mean subscores of PSQI in these studies and our mean scores were similar (3, 4, 11-15, 31, 32). This result was interpreted in the way that sleep duration, sleeping pill use, subjective sleep quality, sleep effectiveness, sleep latency, and daily dysfunctioning, which are the subscale scores of the general scores of sleep quality, affected each other.

The results of this study are limited to the location where the study was conducted. Therefore, the results cannot be generalized. The limitations include the involvement of outpatients in the sampling group because of the low number of inpatients.

CONCLUSION

Sleep quality in chronic psychiatric disorders and the factors affecting them were examined in this study in detail. Unfolding the implicit information that cannot be obtained from the limited number of studies performed on this subject in Turkey and the presence of which cannot be proved was provided, and we tried to fill the gap in literature by proving this information.

Based on the findings obtained, sleep disorders are frequently seen in patients with chronic mental disorders, and it was found that personal characteristics and habits of the patients as well as factors associated with the disease were correlated with various sleep-related parameters. In addition to standard drug therapies in clinic or out of clinic, programs including daily activity habits and social skills that can improve the sleep quality of patients should be developed, and therapeutic intervention should be planned according to these programs.

Ethics Committee Approval: Ethics committee approval was received for this study.

Informed Consent: Written informed consent was obtained from patients who participated in this study.

Peer-review: Externally peer-reviewed.

Authors' Contributions: Conceived and designed the experiments or case: BÖ, SAÇ. Performed the experiments or case: BS,

KM, BÖ, SAÇ. Analyzed the data: BÖ. Wrote the paper: BÖ, SAÇ. All authors have read and approved the final manuscript.

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