

# Sleep disorders in primary care: A Descriptive Study

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## Abstract

**ABSTRACT Purpose** In our study, we aimed to evaluate the sleep disorders, sleep quality of the patients who applied to family health centers, to determine the situations that might be related with insomnia and to determine the insomnia rates of the general population in primary care. **Methods** This study is a descriptive research and conducted in Ankara Güdül, Antalya Değirmenözü, Bursa Sırameşeler, Gaziantep Family Health Center polyclinics. The study population consisted of all patients over 18 years of age who were admitted to the family health centers for any reason. A 10-question questionnaire, Berlin questionnaire, Pittsburgh sleep quality index and insomnia severity scales were collected by the researchers from October to December 2017 using face-to-face interview method. Results 299 people participated in study and 54.5% of them were women. According to the results of Pittsburgh Sleep Quality Scale, it was found that 27.1% of the participants' sleep quality was good and 72.9% of them were poor; according to the Berlin sleep questionnaire, 27.4% had high OSAS risk and 72.2% had a low OSAS risk. According to total Insomnia Severity Index, 27.1% had insomnia lower threshold, 15.4% had moderate insomnia, 3.7% severe insomnia was detected. **Conclusions** In this context, it will be very effective in terms of the quality of life of patients in order to determine the conditions that disrupt sleep hygiene and to perform the necessary interventions which can be intervened in the primary health care institutions and the other patients to be delivered to the related upper levels.

## WHAT'S KNOWN?

Sleep disorders are common disorders in the community, which effect both physical and mental health, closely related to work and social life, which can cause loss of work and work force, can lead to life-threatening serious complications and work accidents.

## WHAT'S NEW?

Despite the high prevalence of sleep disorders and their significant consequences, sleep complaints are generally not addressed by primary care physicians. According to the results of the study we conducted to determine the sleep quality, insomnia, OSAS risks and related factors of the patients who applied to family physicians, 72.9% of the patients who applied to family medicine had poor sleep quality, 27.4% had high OSAS risk and 46% had 2 were found to have insomnia.

## INTRODUCTION

Sleep disorders are common disorders in the community, which effect both physical and mental health, closely related to work and social life, which can cause loss of work and work force, can lead to life-threatening serious complications and work accidents. Sleep disorders are important because of effects on the lives of people as well as the impact of health spending. In a study to evaluate sleep disorders in primary care; a questionnaire was applied to 35327 adults in ten countries from four continents and it was determined that one out of four people in the world had sleep disturbances and 95% of the population had insomnia in some part of their lives and less than one third of these people applied for help to the health institution [1]. Although it is very common in the community, as stated in the study, most of the patients with sleep disorders do not apply to health institutions or physicians. This situation delay the diagnosis of these diseases. The diagnosis, treatment and follow-up of the common diseases in the community is made by family physicians who evaluate the patients on the basis of biopsychosocial approach, thus increasing the rate of diagnosis and treatment of these patients and decreasing the problems caused by sleep disorders throughout the society. In a study conducted on patients who applied to primary health care facilities due to sleep problems, it was stated that physicians and patients also wanted sleep disorders to be addressed in primary health care [2]. In our study, we aimed to evaluate the sleep disorders, sleep quality of the patients who applied to family health centers, to determine the situations that might be related with insomnia and to determine the insomnia rates of the general population in primary care.

## MATERIAL METHOD

### Type of Research

This research is a descriptive epidemiologic research.

### Place of Research

The research was conducted in Ankara Güdül, Antalya Değirmenözü, Bursa Sırameşeler, Gaziantep Family Health Center policlinics.

### Universe of Research

The study population consisted of all patients over 18 years of age who were admitted to the family health centers for any reason and agreed to participate in the study.

### Sample Selection

With the method of sample calculation, considering the family physicians applied to 10 patients per day by taking the questionnaires and scales into consideration, the universe size was calculated as 2400 with a 5% margin of error and 95% confidence interval and the sample size was 332 persons; 315 volunteers were included in the study. However, 16 patients with incomplete forms were excluded from the study and the study was completed with 299 patients. In case of voluntary participation of the patients in the study, an informed consent was signed for their consent.

### Permissions

Ethical approval was obtained from Kahramanmaraş Sütçü İmam University Medical Faculty Clinical Research Ethics Committee with the decision number 2017 / 14-09 and the study was conducted in accordance with the Declaration of Helsinki Declaration.

### Data Collection Tools

A 10-question questionnaire including sociodemographic characteristics and Pittsburgh sleep quality scale, Berlin questionnaire and insomnia severity scale were used to collect data.

Pittsburgh sleep quality scale: Scale was developed from Buysse et al. [3] and adapted to Turkish by Ağargün et al. [4]. The scale is a self-report scale of 19 items that evaluates sleep quality and impairment in the past month. It consists of 24 questions, 19 questions self-report, 5 questions are questions to be answered by spouse or roommate. The 18 questions of the scale consist of 7 components. Each component is rated at 0-3 points. The total score of the 7 components gives the total score of the scale. The total score ranges from 0 to 21. If the total score is greater than 5, it indicates “poor sleep quality.”

**The Berlin Questionnaire:** The Berlin Questionnaire is a scale consisting of three categories that measure the risk of sleep apnea. It consists of a 10-question questionnaire including information on the patient’s body mass, snoring characteristics, sleep status and blood pressure. Each category is evaluated in its own way, and if 2 or more categories are positive, the risk of obstructive sleep apnea syndrome (OSAS) is considered high according to the Berlin Questionnaire [5,6].

**Insomnia Severity Scale:** It has been developed to evaluate the severity of insomnia and has a high reliability and reliability. Scale items consisting of seven questions are scored between 0-4. The scores that can be taken from the scale vary between 0-28 [7].

## Data Collection

A 10-question questionnaire, Berlin questionnaire, Pittsburgh sleep quality index and insomnia severity scales were collected by the researchers from October to December 2017 using face-to-face interview method.

## Analysis of Data

For the analysis of sociodemographic data, whether the data is normal or not is determined by Shapiro Wilk test, if the data provides parametric conditions (data obtained by interval, ratio scale, normal distribution, W) for two groups (independent, conjugate) t test, F test (ANOVA) for more than two groups. While ANOVA was used for comparisons with more than two groups, Tukey, Scheffe, Tamhane OVs T2 tests were used to determine which group was different from others. If no or all of the assumptions were provided, Mann Whitney for two independent groups, Wilcoxon test for two dependent groups, Kruskal Wallis for more than two independent groups, Friedman test for more than two dependent groups. Chi square test was used to evaluate the qualitative data. The error level was 0.05.

## RESULTS

A total of 299 people participated in our study and 54.5% (163) of them were women. The mean age of the participants was  $42,70 \pm 16,53$  (min: 17; max: 91). The majority of the respondents (66.9%) were married, 38.1% (114) were university graduates, 30.1% (80) were civil servants, and 66.6% (199) were more than military wages. 66.2% (198) have no chronic disease. The sociodemographic characteristics of the participants are given in Table 1.

### Table I. Sociodemographic characteristics of participants

The average Pittsburgh Sleep Quality Scale of the participants was  $7.55 \pm 4.41$  (min: 0; max: 20). According to the results of Pittsburgh Sleep Quality Scale, it was found that 27.1% (81) of the participants’ sleep quality was good and 72.9% (218) of them were poor.

The average Berlin sleep questionnaire was  $2.62 \pm 1.92$  (min: 0; max: 7). According to the Berlin sleep questionnaire, 27.4% (82) had high OSAS risk and 72.2% (216) had a low OSAS risk.

Total Insomnia Severity Index of participants was  $8.29 \pm 6.44$  (min: 0; max: 27). 46.2% of the participants (138) had insomnia. Of these, 27.1% (n = 81) had insomnia lower threshold, 15.4% (n = 46) had moderate clinical insomnia (insomnia), 3.7% (n = 11) severe clinical insomnia (insomnia) was detected.

When the demographic characteristics were compared according to the results of Pittsburgh Sleep Quality Scale, it was determined that the quality of sleep was significantly better in males (p: 0.001), in non-chronic patients (p: 0.043) and in smokers (p: 0.002). Table 2 shows the comparison of demographic characteristics according to the results of Pittsburgh Sleep Quality Scale.

## **Table II. Comparison of demographic characteristics according to Pittsburgh Sleep Quality Scale results**

According to the results of the Berlin sleep questionnaire, the demographic characteristics were compared with age (p: 0,000), in singles (p: 0,013), in primary school graduates (p: 0,000), in the winners above the minimum wage (p: 0,003), in those with chronic disease (p: 0,000) and high OSAS risk was detected in alcohol users (p: 0.020). Table 3 shows the comparison of demographic characteristics according to the results of the Berlin sleep questionnaire.

## **Table III. Comparison of demographic characteristics according to the Berlin sleep questionnaire**

When the demographic characteristics were compared according to the Insomnia Severity Index (p: 0.002), in males (p: 0.0000), in those with higher education (p: 0.038), in patients with chronic disease (p: 0.000) and in alcohol users (p: 0.005) increased frequency of life. A comparison of the demographic characteristics according to the Insomnia Severity Index is given in Table 4.

## **Table IV. Comparison of demographic characteristics according to Insomnia Severity Index**

According to the Pittsburgh Sleep Quality Scale, those with good sleep quality experienced less insomnia compared to the Insomnia Severity Index (p: 0,000), while they had a lower OSAS risk compared to the Berlin sleep questionnaire (p: 0,001). A comparison of the Pittsburgh Sleep Quality Scale and the Insomnia Severity Index and the Berlin sleep questionnaire is given in Table 5.

## **Table V. Comparison of Pittsburgh Sleep Quality Scale with Insomnia Severity Index and Berlin sleep questionnaire**

In our study, the correlation between the Pittsburgh Sleep Quality Scale, Insomnia Severity Index and the scores of the Berlin sleep questionnaire were also examined. According to this, the scores of the Sleep-Sleep Index scores of those with high scores and the scores of the Berlin Sleep Questionnaire were found to be low.

## **DISCUSSION**

Despite the high prevalence of sleep disorders and their significant consequences, sleep complaints are generally not addressed by primary care physicians. According to the results of the study we conducted to determine the sleep quality, insomnia, OSAS risks and related factors of the patients who applied to family physicians, 72.9% of the patients who applied to family medicine had poor sleep quality, 27.4% had high OSAS risk and 46% had 2 were found to have insomnia. In a large-scale study of 9284 people in Germany, the rate of patients with poor sleep quality was found to be 36%, which is very low compared to our study [7]. In the general population, symptoms of insomnia are present in up to 33% of individuals, OSA has a prevalence of about 5% (though 26% to 32% have symptoms suggesting they are at risk for OSA). In the study conducted in 2011, high OSAS risk was found in 33% of the participants and our study was higher than the results [8]. Again according to this study, insomnia was assessed with the Sleeping Questionnaire (CSHQ) questionnaire and found to be 30%. In terms of insomnia, our results are higher than the results of this study. In another study conducted by Logue et al. in 2014 by primary care patients, 78% poor sleep quality and 59% higher OSAS risk were found, especially when OSAS risk was very high compared to our values, sleep quality was higher than our study, but it was observed to be similar [9]. In another study conducted in primary care, similar rates were achieved in our study (71%) [10].

In another study conducted in Ankara, insomnia assessment was evaluated in 79 (32.2%) of the participants under-threshold insomnia, 43 (17.6%) of the patients with clinical insomnia, 12 (4.9%) with severe clinical insomnia, 88 (35.9%) and insomnia was insignificant [11].

In our study, according to the results of the Pittsburgh Sleep Quality Scale, sleep quality was significantly better in men compared to the demographic characteristics of sleep quality, non-chronically ill and those who smoked. According to the Insomnia Violence Index, it was determined that the frequency of insomnia

was higher among the elderly, the males, the students with the higher education level and those with chronic diseases and those using alcohol.

In the literature search, it has been observed that studies related to sleep quality and sleeplessness in our country are generally performed in individuals with chronic diseases, occupation in occupation and students. In most of these studies, sleep quality decreases with age increase; it was stated that this situation is due to reasons such as difficulty in falling asleep and sustaining with age. In our study, it was found that sleep quality did not change with age but insomnia status increased with age. A study in Spain found that sleep quality worsened with age [11], in accordance with our study no correlation was found between age and sleep quality in two studies [7,13]. Ohayon et al. ,Aslan et al and Farazdaq et al was concluded that insomnia increases with age and that was support our study [14-16]. In studies conducted on healthy adults, sleep quality is generally not changed according to gender, but in some studies it is stated that women sleep quality is worse. In our study, we found that men 's sleep quality was better, but they were more likely to have insomnia. In the study of Hinz et al. and Madrid-Valero, it was concluded that the sleep quality of women was worse in parallel with our study [7,12]. In a study conducted in primary care and insomnia severity index, no difference was found between sexes in terms of insomnia [17]. In international studies, it was concluded that insomnia affects female gender more [14,15]. In the study made by Aslan et al., it was concluded that insomnia is seen more in female gender [16]. In a prospective cohort study no difference was found between the genders [13]. It is known that sleepers suffer from sleep problems and sleep quality is worse. In our study, it was found that sleep quality of the patients who had smoked but who had previously smoked before, had better sleep quality and generally had less insomnia compared to those who did not use non-smokers. Aslan et al. also found smoking as a risk factor for insomnia [16]. In a study conducted in the family medicine clinic of a university in Malaysia, it was found that insomnia was associated with smoking [14].

The effect of alcohol on sleep quality is the suppression of the central nervous system and easing the transition to sleep, but it is known that sleep quality disrupts the activity of REM sleep. In our study, the effect of alcohol use on sleep quality was not found to be statistically significant. The relationship between sleep and chronic disease is mutual; impaired sleep quality increases the risk of cardiovascular, metabolic (diabetes, obesity, thyroid diseases), rheumatic diseases, or the frequency of current symptoms. Similarly, having chronic illness affects both the quality of the sleep and the duration of sleep due to both the disease and the drugs used. In our study, it was determined that people with chronic diseases had higher incidence of insomnia in accordance in a study Aslan et al [16]. In addition, according to the Pittsburgh Sleep Quality Scale, we found that people with good sleep quality had less insomnia than the Insomnia Severity Index.

When the demographic characteristics were compared according to the results of the Berlin sleep questionnaire, the risk of OSAS was found to be high in the elderly, in singles, in primary school graduates, in winners above the minimum wage, in those with chronic diseases and in alcohol users.

In addition, according to the Pittsburgh Sleep Quality Scale, it was determined that those with good sleep quality and those with less insomnia to the Insomnia Severity Index had a lower OSAS risk than the Berlin sleep questionnaire. In studies, age, gender, obesity, neck circumference, upper airway resistance, smoking and alcohol are the main factors affecting obstructive sleep symptoms. In our study, findings consistent with literature data were found.

When the contribution of our study to the literature was evaluated as patient profile, the study of the patients of the family physicians who have the richest patient group and the fact that the patients coming to the family health center constitute the most appropriate group in terms of generalizability, increase the interpretability of the results over the general population when evaluating the results of the study. In our study, it was thought that 2/3 of the patients had poor sleep quality and that half of them had insomnia.

In this context, it will be very effective in terms of the quality of life of patients in order to determine the conditions that disrupt sleep hygiene and to perform the necessary interventions in the interventions which can be intervened in the primary health care institutions and the other patients to be delivered to the related

upper levels. The fact that sleep disorders are not taken seriously and the hospital is not applied to this reason causes the frequency of these diseases to continue to increase. In this context, family physicians play a vital role in recognizing OSAS and sleep disorders and increasing the awareness of patients on this issue.

## **Compliance with Ethical Standard**

### **Disclosure of potential conflicts of interest**

Raziye Şule GÜMÜŞTAKIM declares that she has no conflict of interest concerning the research, authorship, or publication of this article. Duygu AYHAN BASER declares that she has no conflict of interest concerning the research, authorship, or publication of this article. Murat CEVIK declares that she has no conflict of interest concerning the research, authorship, or publication of this article. Pınar Bilgili declares that she has no conflict of interest concerning the research, authorship, or publication of this article. Mehmet Ali Çelik declares that she has no conflict of interest concerning the research, authorship, or publication of this article. Tayyar Güngör declares that she has no conflict of interest concerning the research, authorship, or publication of this article. Selda Handan Karahan Saper declares that she has no conflict of interest concerning the research, authorship, or publication of this article.

### **Research involving Human Participants and/or Animals**

Research involve only human participants.

**Ethical approval:** All procedures performed in studies involving human participants were in accordance with

the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

### **Informed consent**

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

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