

Determination of Sleeping Disorder Prevalence and Its Relation With Different Parameters in Patients Who Applied to Family Medicine Clinics

Aile Hekimliği Polikliniğine Başvuran Hastalarda Uyku Bozukluğu Sıklığı ve Farklı Parametrelerle İlişkinin Değerlendirilmesi

AUTHORS / YAZARLAR

Binnur Taçtekin Sezer

Aile Hekimliği
Polikliniği, Türkeli
Devlet Hastanesi, Sinop,
Türkiye

Önder Sezer

Aile Hekimliği
Polikliniği, Abana Devlet
Hastanesi, Kastamonu,
Türkiye

Dilek Toprak

Aile Hekimliği Kliniği,
Şişli Etfal Eğitim ve
Araştırma Hastanesi,
İstanbul, Türkiye

ABSTRACT

Aim: Our study aimed to determine the prevalence of sleep disorders and the factors related with these problems in patients who attended to our clinics with any complaint.

Methods: Patients who are over 18 years of age and who applied to Family Medicine Clinics in Şişli Etfal Training and Research Hospital with any complaint from June 2012 to July 2012 were included in the study. 28 questions including Epworth Sleepiness Scale were applied face to face.

Results: Totally 143 individuals participated the study, with 85 (%59.4) women and 58 (%40.6) men. While snoring was the most frequent complaint in the middle age group (%65.6, n=40); complaints of feeling tired and waking up hardly tended to decrease with increasing age. In addition, feeling of "inadequate sleep" was the most frequent complaint in young adults (%69.57, n=16). There was a significant relationship between working in shifts and occupational accidents due to carelessness (p<0.001). We found a significant relationship between traffic accident history due to carelessness and hardly-tired waking up (p=0.046) and sleep apnea (p=0.003). There were positive significant relationships between BMI, neck circumference, waist circumference; and day time sleepiness and more than 11 hours night sleep (p<0.05). Also a significant relationship was found between having chronic disease and excessive daytime sleepiness (p=0.01).

Conclusion: Questions asked for scanning sleep disorders in periodic health examinations would be helpful to diagnose and treat sleep disorders associated with chronic diseases and other parameters. In preventive health care, encouraging patients about changing their lifestyle and sleep hygiene techniques to improve sleep quality would help to control sleep disorders and its unwanted results.

Keywords: sleep disorders, sociodemographic factors, chronic disease, Epworth Sleepiness Survey

ÖZET

Amaç: Çalışmamızda polikliniklerimize farklı nedenlerle başvuran hastalarda uyku bozukluğu prevalansını ve bununla ilişkili faktörleri belirlemeyi amaçladık.

Yöntemler: Çalışmaya Şişli Etfal Eğitim ve Araştırma Hastanesi Aile Hekimliği polikliniklerine başvuran 18 yaş üzeri hastalar dahil edildi. Hastalardan 28 sorudan oluşan ve Epworth Uykululuk Skalası da içeren anketi yüz yüze yöntemle cevaplaması istendi.

Bulgular: Çalışmaya 85 (%59,4) kadın ve 58 (%40,6) erkek olmak üzere toplam 143 birey katıldı. Horlama yakınması en çok orta yaş grubunda saptanırken (%65,6, n=40), sabahları yorgun, zor uyanma şikayetinin yaş ilerledikçe azalma eğiliminde olduğu görüldü. Ek olarak yetersiz uyku oranının da en sık genç erişkinlerde olduğu saptandı (%69,57, n=16). Vardiyalı işte çalışma ve dikkatsizlik kaynaklı iş kazası geçirme öyküsü arasında anlamlı ilişki bulundu (p<0,001). Dikkat eksikliğinden kaynaklı trafik kazası öyküsü ile sabahları yorgun, zor uyanma (p=0,046) ve gece uykuda nefessiz kalarak uyanma (p=0,003) öyküsü arasında anlamlı ilişkiler olduğu saptandı. Beden kitle indeksi, bel çevresi ve boyun çevresi ile gündüz sık uyuklama, aşırı gündüz uykusu, 11 saati geçen gece uykusu şikayetleri arasında pozitif anlamlı ilişki olduğu saptandı (p<0,05). Kronik hastalık varlığı ile aşırı gündüz uykusu varlığı arasında anlamlı ilişki vardı (p=0,01).

Sonuç: Periyodik sağlık muayenesinde uyku bozukluklarıyla ilişkili tarayıcı sorular, kronik hastalıklar ve diğer parametrelerle birlikte gösteren uyku bozukluklarının erken tanı ve tedavisinde yardımcı olacaktır. Koruyucu hekimlik aşamasında hastaları uyku kalitesini artırıcı yaşam tarzı değişiklikleri ve uyku hijyeni teknikleri konusunda bilgilendirmek uyku bozuklukları ve bunun istenmeyen sonuçlarını kontrol altına alınmasında destek olabilir.

Anahtar kelimeler: uyku bozuklukları, sosyodemografik etkenler, kronik hastalık, Epworth Uykululuk Skalası

Corresponding Author / İletişim için

Dr. Binnur Taçtekin Sezer, MD
Edirne Devlet Hastanesi, Aile Hekimliği Polikliniği, Edirne, Türkiye
E-mail: btagtekin@yahoo.com
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Introduction

Sleep is identified as losing communication with the environment (1). It can be partial, periodic and reversible by different types of stimulus. Each variation of sleep has its own characteristic features, functional importance and regulatory mechanisms. For this reason, high grade cerebral activities can be observed during sleep (2).

During the last 20 years, new findings and experiments have been published about sleep disorders. Sleep is not a uniform loss of consciousness. It is a strictly controlled, complicated neural regulation process (3,4).

Our daily activities are determined by the regulatory systems of sleep (5). When this regulation breaks down, complaints about daytime activities occur. Various diseases can cause sleep disorders, also sleep disorders can cause various high grade mortal and morbid diseases such as hypertension, diabetes and cardiovascular diseases (6,7).

In our study we aimed to determine the prevalence of the sleep disorders and the factors related with these problems in patients who attended to Family Medicine Clinics in Şişli Etfal Training and Research Hospital with any complaint.

Methods

Patients who are over 18 years of age and who attended to Family Medicine Clinics in Şişli Etfal Training and Research Hospital were included in the study. Verbal approval was taken before the questionnaire. 28 main questions were asked face to face by the researcher. Patients who were under 18 years old, who did not provide the laboratory test results needed for the research in the last six months and who refused to answer the questionnaire were excluded from the study.

Socio-demographic data, occupation, working in shifts, high caution tool use, driving, traffic or occupational accident history due to lack of attention, having a chronic disease, daily medications, tea, coffee and coke intake, menopause, snoring, excessive day time sleepiness and sleep apnea were evaluated in the questionnaire. Height, weight, neck and waist circumference measured for every patient.

Levels of thyroid-stimulating hormone (TSH),

free T3, free T4, hemoglobin, hematocrit, serum vitamin B12 levels measured in the last 6 months were added to the questionnaire. The questionnaire was completed by the assessment of Epworth Sleepiness Scale (ESS).

Patients were grouped according to age and occupation. Neck circumference measurements were evaluated according to gender and the risk of obstructive sleep apnea syndrome (OSAS). Over 38 cm in women and 43 cm in men were accepted as "risk" (8).

Waist circumference measurements were evaluated according to gender and risk of metabolic syndrome. Over 88 cm in women and 102 cm in men were accepted as "risk" (9). Thyroid function tests and hemoglobin-hematocrit levels were classified as "low", "normal" and "high" according to the laboratory values. Serum B12 levels were evaluated and treated according to 200 pg/mL cut-off value (10).

Patients were divided into three groups as "getting enough sleep", "average score" and "insufficient sleep" due to Epworth Sleepiness Scale.

Statistical Package for Social Sciences (SPSS) version 19.0 and Pearson Chi-Square test were used to compare groups and $p < 0.05$ was accepted as statistically significant.

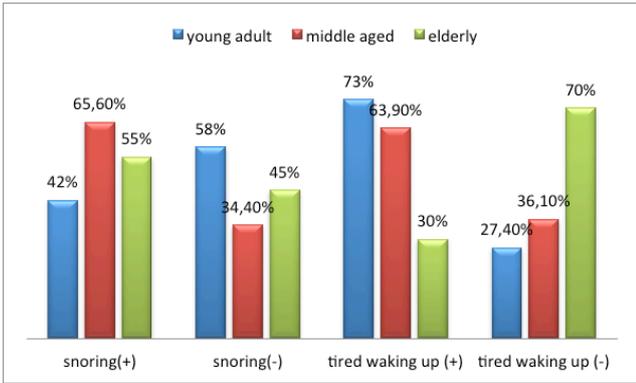
Results

One hundred and forty three patients were included in our study. Of them, 85 (59.4%) were women and 58 were men (40.6%). Mean age was 44.52 (SD: 15.213). Sleepiness did not differ between genders ($p > 0.05$).

Relationship between age, snoring, waking up hardly-tired and Epworth Sleepiness Scale were found to be statistically significant ($p < 0.05$) (Figure 1-2). Young adults complained more about getting insufficient sleep (69.57%, $n=16$).

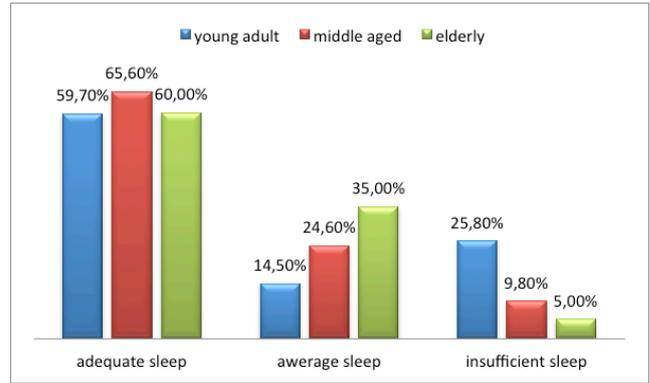
Data about occupation groups, working in shifts, high caution tool useage, occupational and traffic accident history due to carelessness can be seen in Figure 3, Figure 4 and Table 1.

Relationship between being a shift-worker and occupational accident due to carelessness was found to be statistically significant ($p < 0.001$). 7 patients (53.8%) out of 13 who had occupational accident



*Snoring (p= 0,031), *Waking up tired (p= 0,003)

Figure 1. Relationship between age and snoring and waking up hardly-tired.



*p= 0,037

Figure 2. Relationship between sleep and age.

history were shift-workers. 113 (95%) non shift-workers out of 119 didn't have any occupational accident history.

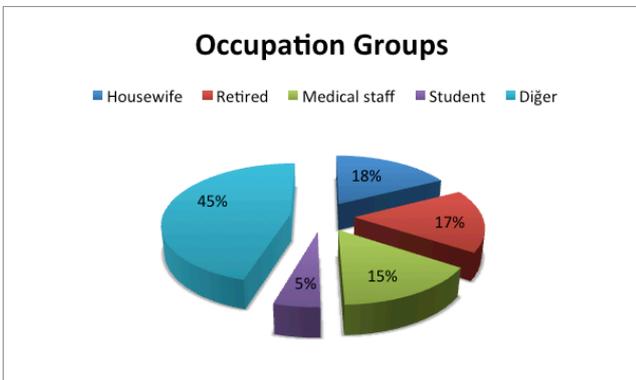


Figure 3. Occupational data

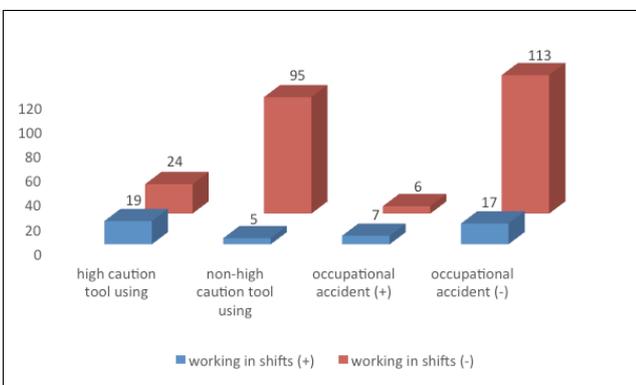


Figure 4. High caution tool usage and occupational accident history of shift-workers

Mean body mass index (BMI) was 26.35 kg/m² (SD:5.37); mean neck circumference was 36.74 cm (SD:4.26); mean waist circumference was 91.53 cm (SD:18.2).

There was a statistically significant relationship

between symptoms as daytime sleepiness, snoring; and BMI, waist circumference measurements (p<0.05). With the increasing neck circumference the risk for developing sleep apnea increased (p=0.048).

Table 1. Relationship between traffic accident history and daytime sleepiness, waking up tired, snoring, sleep apnea and the quality of sleep.

	Traffic accident story		p
	Yes n (%)	No n (%)	
Daytime sleepiness			
Yes	8 (36,4)	40 (33,1)	0,763
No	14, (63,6)	81 (66,9)	
Tired waking up			
Yes	19 (82,6)	71 (59,2)	0,033
No	4 (17,4)	49 (40,8)	
Snoring			
Yes	15 (68,2)	62 (51,2)	0,143
No	7 (31,8)	59 (48,8)	
Sleep apnea			
Yes	9 (40,9)	17 (14)	0,003
No	13 (59,1)	104 (86)	
Quality of sleep			
Insufficient	5 (22,7)	18 (14,9)	0,074
Average	8 (36,4)	23 (19)	
Sufficient	9 (40,9)	80 (66,1)	

31 women were in menopause (36.47%, n=85). We found a significant relationship between menopause and snoring, (p=0.007) (Figure 5).

We found a significant relationship between hypertension and snoring, diabetes and daytime sleepiness; comorbid diseases and waking up hardly-tired (p<0.05) (Table 2).

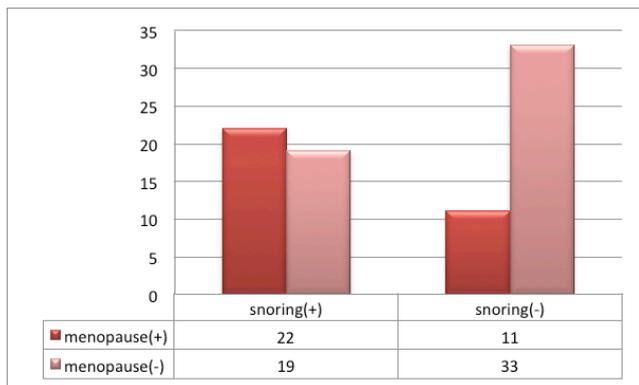


Figure 5. Menopause and snoring

Discussion

Daily sleep period changes from 4 to 11 hours and varies individually because of genetic and environmental factors. Quality of sleep is also important. Sleep hygiene technics, daytime activities, working conditions, nutrition and medication intake and having comorbid diseases determine the quality.

There wasn't any statistically significant relationship between sleepiness and gender ($p>0.05$). It is similar to the findings of Ozdemir et al ($p>0.05$) (11). With these findings it can be suggested that

sleepiness effects both men and women equally.

Snoring is frequent in the middle age (51.9%, $n=40$). Waking up hardly and tired tend to decrease by the increasing age. In the study of Aslan et al. which contained 1034 patients, being over 40 years old and having a comorbid disease were found to be risk factors for hypersomnia. In the same study, age, gender, marital status, comorbid diseases, smoking habit were found to be related with hypersomnia ($p>0.05$) (12). Snoring and waking up tired were found to be frequent between 35-44 years of age.

In the study of Ozdemir et al (11), being over 60 years old was found a risk factor for the same complaints.

In our study, inadequate sleep was more frequent in young adults (69.57%, $n=16$). It can be explained by active working, fatigue, stress of citylife and workload of this age group.

There was a significant relationship between working in shifts and occupational accidents due to carelessness ($p=0.000$). Sleepiness was not found to be related. In the study of Sonmez et al (13), 51 nurses (12.4%) had occupational accidents and this

Table 2. Range of comorbid diseases, sleepness complaint and Epworth Sleepiness Scale results

	Hypertension n(%)		Diabetes n(%)		Coronary disease n(%)		Hyperlipidemia n(%)		Others n(%)	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Snoring										
Yes	20 (71,4)	27 (46,6)	17 (68)	30 (49,2)	11 (64,7)	36 (52,2)	17 (65,4)	30 (50)	24 (47,1)	23 (65,7)
No	8 (28,6)	31 (53,4)	8 (32)	31 (50,8)	6 (35,3)	33 (47,8)	9 (34,6)	30 (50)	27 (52,9)	12 (34,3)
Daytime sleepiness										
Yes	13 (46,4)	23 (39,7)	15 (60)	21(34,4)	7 (41,2)	29 (42)	12 (46,2)	24 (40)	21 (41,2)	15 (42,9)
No	15 (53,6)	35 (60,3)	10 (40)	40 (65,6)	10 (58,8)	40 (58)	14 (53,8)	36 (60)	30 (58,8)	20 (57,1)
Hardly and tired waking up										
Yes	15 (53,6)	36 (62,1)	12 (48)	39 (63,9)	8 (47,1)	43 (62,3)	12 (46,2)	39 (65)	35 (68,6)	16 (45,7)
No	13 (46,4)	22 (37,9)	13 (52)	22 (36,1)	9 (52,9)	26 (37,7)	14 (53,8)	21 (35)	16 (31,4)	19 (54,3)
Waking up because of apnea										
Yes	6 (21,4)	10 (17,2)	6 (24)	10 (16,4)	5 (29,4)	11 (15,9)	4 (15,4)	12 (20)	8 (15,7)	8 (22,9)
No	22 (78,6)	48 (82,8)	19 (76)	51 (83,6)	12 (70,6)	58 (84,1)	22 (84,6)	48 (80)	43 (84,3)	27 (77,1)
Epworth G										
Enough	16 (57,1)	33 (56,9)	13 (52)	36 (59)	8 (47,1)	41 (59,4)	17 (65,4)	32 (53,3)	28 (54,9)	21 (60)
Average	7 (25)	15 (25,9)	7 (28)	15 (24,6)	6 (35,3)	16 (23,2)	7 (26,9)	15 (25)	13(25,5)	9 (25,7)
Insufficient	5 (17,9)	10 (17,2)	5 (20)	10 (16,4)	3 (17,6)	12 (17,4)	2 (7,7)	13 (21,7)	10 (19,6)	5 (14,3)

Hypertension and snoring $p=0,03$; Diabetes and daytime sleepness $p=0,029$; Comorbid diseases and hardly-tired waking up complaint $p=0,034$

finding is in accordance with our findings.

Occupational accident history increases 4.1 times with the ESS score being higher than 10 (13). In the study of Coban et al, it was found that working in shifts like intensive care units ends up irregular sleep cycle and reduces sleep quality.

Waking up hardly and tired increases the chance of having traffic accidents by 50% ($p=0.033$). 48 (33.57%) patients had daytime sleepiness ($p=0.015$).

In an Australian study by Sharwood et al (14), sleep apnea was found to be a common problem for long-distance commercial vehicle drivers.

When we analyse the study of Gulbay et al (15), there was a statistically significant relationship between daytime sleepiness, sleep apnea, having cardinal symptoms of OSAS and traffic accident history; but there was no significant relationship was detected between traffic accident history and snoring. Both in our study and the study of Gulbay et al, it can be suggested that doctors have to ask questions for sleep disorders when examining individuals for their eligibility of having a driver's licence.

Snoring and daytime sleepiness complaints of women were more bothering than men in risky neck and waist circumference groups. For both genders being in the risky groups according to neck circumference measurements was found to be related with an increasing probability of developing sleep apnea ($p=0.048$).

In the study of Sahin et al (16), central obesity and having a thick neck level were found to be

increasing the risk for OSAS. In the study of Aslan et al (12), a BMI over 24 was found to be related with hypersomnia symptoms.

Medications, daily tea, coffee and coke intake were not related with sleep disorders in our study ($p<0.05$). This finding is similar to the results of Aurora et al's (17).

There was a statistically significant relationship between menopause and snoring ($p=0.007$). 66% ($n=22$) of the menopause group had snoring complaint; while this rate was only 25% ($n=33$) in the non-menopause group. We believe that the main reason for this is the relaxation of soft tissues in menopausal women.

In a Chinese study of 2297 patients, ESS was found to be a reliable indicator of hypertension, coroner artery disease and cerebrovascular disease risk in OSAS patients (18). In their study Kanbay et al (19) found the metabolic syndrome incidence higher in OSAS patients.

Conclusion

Physicians often neglect asking questions about sleep disorders which are in fact related with chronic diseases such as the metabolic syndrome. Family physicians can detect sleep disorders only by asking a few questions. In preventive care modality, we have to teach people sleep hygiene technics and environmental conditions for increasing their sleep quality.

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