International Journal of Medical and Health Research
ISSN: 2454-9142
Received: 15-08-2018; Accepted: 18-09-2018
www.medicalsciencejournal.com
Volume 4; Issue 10; October 2018; Page No. 90-94

The excessive daytime sleepiness and burnout status in preclinical medical students

Gülsüm Akdeniz[1*], Selda Keskin Guler[2], Cem Ozgen[3], Ebru Evran[4], Tahir Kurtulus Yoldas[5]
[1] Department of Biophysics, Electroneurophysiology Lab, Medicine Faculty, Ankara Yildirim Beyazit University, Ankara, Turkey
[2] Department of Neurology, Ankara Training and Research Hospital, Ankara, Turkey
[3, 4] Medicine Faculty, Ankara Yildirim Beyazit University, Ankara, Turkey
[2, 5] Department of Neurology, Medicine Faculty, Ankara Yildirim Beyazit University, Ankara, Turkey

Abstract
Objective: Sleep quality and daytime sleepiness affect the cognitive abilities and performance of medical students. Daytime sleepiness of pre-clinical medical students may be associated with burnout syndrome. The study aimed to investigate the relationship and between daytime sleepiness and burnout syndrome among medical students and factors which affect daytime sleepiness and burnout syndrome.
Material and Method: This is a cross-sectional descriptive study of 189 pre-clinical medical students. Epworth Sleepiness Scale (ESS), Maslach Burnout Inventory (MBI) and a sociodemographic information form were used as data collection tools.
Results: 131 (69.6%) of the 189 medical faculty students in the study were female and 58 (30.4%) were male. The average age of participants was 20.07 ± 2.33 years, and all were single. The average duration of night sleep for the students is 7.35 ± 1.26 hours. The daytime sleepiness was found as being severe (4.7%), intermediate (%7.8), moderate (%14), increased (44%) and normal (29.5%) of the students. MBI scores of students whose academic achievement grade is equal to 60 or higher than 60 were lower than students whose academic achievement grade is below 60. In this study, there was a positive correlation between daytime sleepiness and the subgroups of burnout syndrome which are emotional exhaustion and cynicism.
Conclusion: The elimination of daytime sleepiness of preclinicalal medical students and the training of coping with stress may benefit students by increasing academic success and training more successful doctors.

Keywords: excessive daytime sleepiness, burnout syndrome, medical students, Epworth Sleepiness Scale (ESS), Maslach Burnout Inventory (MBI)

Introduction

The concept of burnout was first introduced to the world of medicine by Herbert Freudenberger in the year of 1974 and was defined as prolonged emotional and physical exhaustion [1]. Burnout comprises of lack of personal accomplishments, emotional exhaustion and depersonalization [2]. Maslach Burnout Inventory (MBI) is the one that's most commonly used in this regard [3].

Whether the compelling nature of medical training before graduation and the fact that this continuum takes a long-time causes burnout or not for prospective doctors who are yet to begin their careers still remains as a conundrum. In a study carried out by Galan *et al*. involving medical faculty students, it was demonstrated that the burnout prevalence was doubled during the period spanning from the third year to sixth year of medical school and that there was no significant association with genders [4]. Burnout levels of medical students during the years when they receive basic training play a crucial role in the following years involving clinical period in which they are required to cope with intense work pressure and stress.

Medical students require sleep, adequate both in duration and quality, as one of their basic necessities in order to lead a healthy life. Insufficient or poor-quality sleep may cause excessive daytime sleepiness which may consequently result in low academic achievement, tendency to substance addiction, eating disorders, emotional and behavioral dysregulations and physical problems [5, 6]. Additionally, conditions such as incomprehension, absenteeism, fatigue, nervosity, anxiety and lack of concentration may be observed [7].

Medical students lead a life in which they may be exposed to stress due to their heavy academic schedule and grade anxiety. Stress management factors can determine the onset and level of burnout and sleep problems of medical students prior to clinical training [8-10]. Daytime sleepiness condition associated with sleep problems and burnout may affect one another reciprocatively in a negative way. Consequently, circumstances such as these may cause psychological problems in medical students, induce burnout and affect academic achievement negatively [11].

There are a limited number of studies available, investigating the correlation between daytime sleepiness and burnout syndrome [12, 13]. The aim in this study was to examine the correlation between academic achievement and sleep and burnout syndrome in medical students receiving pre-clinical training in medical faculty and factors that may affect this correlation.

Materials and methods

The study was carried out in a state university, in the year of

2017, as in 1st, 2nd and 3rd periods in a total of 189 medical faculty students and in two months. Students who accepted volunteer participation were included in the study and participants filled the scales themselves under supervision. Epworth Sleepiness Scale (ESS) and Maslach Burnout Inventory (MBI) were used in the study. In addition to scales, students were asked to fill out an interview form including definitive data such as age, gender, marital status, what time they go to sleep and what time they wake up, smoking and use of alcohol, psychiatric medication use or use of sleeping pills, presence of chronic illnesses, place of residence, academic achievements according to the letter grade system and physical activities. Academic achievement was queried through the letter grade system; wherein CC and above letter grades were considered as successful, whereas DC and below grades were considered as unsuccessful.

MBI was developed by Maslach and Jackson [3]. Maslach's model of burnout consists of 22 items. 9 items out of these describe emotional exhaustion (EE), 5 items describe depersonalization (DP) and 8 items describe lack of personal accomplishment (PA). In the scale, questions regarding the dimensions of emotional exhaustion and depersonalization are composed of negative statements, while questions regarding the dimension of personal accomplishment are composed of positive statements. Responses were assessed in five-point Likert scale as never, rarely, occasionally, frequently and always. Since no breakpoints were determined for researches carried out in Turkey, a limit reference point for subcategory points of MBI in burnout syndrome was not used. Questions [6, 16, 17, 18, 19]. were excluded from the scale on the grounds that these questions decrease the reliability of the scale in MBI.

ESS was developed by M. W. Johns [14] in the year of 1991 and its validity and reliability were performed in the year of 1999 for the Turkish society by Ağargin *et al*. who reported the Cronbach alpha reliability coefficient as 0,80 [15]. ESS measures the overall level of daytime sleepiness as well as excessive daytime sleepiness. The scale consists of 8 questions. Responses were assessed in four-point Likert scale as, would never doze, would rarely doze, would occasionally doze, would probably doze. 11 points and above are accepted as excessive daytime sleepiness.

Statistical analysis

Distribution of continuous variables included in the study such as age, nighttime sleep duration, etc. were examined with Shapiro-Wilk Test. All continuous variables were indicated with median (minimum-maximum: min-max) and mean ± standard deviation (mean±sd), while categorical variables were indicated with numbers (%). In the comparison of ESS and MBI scores Mann-Whitney U Test and Kruskal-Wallis Test were carried out in accordance with definitive characteristics. Correlations between ESS score and age, sleep duration, academic achievement level and MBI subdimension scores were examined through Spearman and Polyserial correlation coefficients depending on the type of variables. Statistical significance level was accepted as $p<0.05$. IBM SPSS Statistics 21.0 (IBM Corp. Released 2012. IBM SPSS Statistics for Windows, Version 21.0. Armonk, NY: IBM Corp.) software was utilized for statistical analyses and calculations.

Results

Average age of voluntarily involved students in our study was determined to be 20 years (min-max: 18-30) (Table 1). 69.6% (n=131) of participants were female and all participants were unmarried. 48.1% (n=75) of students were first-year students, 6.1% of students (n=12) were second-year students and 36.5% (n=72) of students were third-year students. For the rest of the students, data indicating the year in the medical faculty was not available. It was determined that 42.6% (n=81) of students stayed at dorms, 42.1% (n=80) of students lived with their families, 11.6% (n=22) of students lived with housemates and 3.7% (n=7) of students lived alone. It was observed that 13.8% (n=26) of participants were smokers, 5.8% (n=11) of participants quit smoking; 80.4% (n=152) of participants were non-smokers and 6.9% (n=13) of participants had a chronic illness. It was determined that five students (2.6%) used psychiatric medications, whereas 12 students (6.3%) were on medications for their chronic illnesses (Table 1). It was also determined that 46.8% (n=89) of participants did not exercise on a regular basis; 22.1% (n=42) of participants exercised once a week, 15.8% of participants twice a week and 15.3% of participants exercised more than two times a week. Median of nighttime sleep duration of students were determined to be 7 hours (min-max: 4-12). Academic achievement levels of 86.2% (n=163) of pre-clinical period students were determined to be at CC level at the minimum (Figure 1).

Table 1: Distribution of Definitive Characteristics of Students

Characteristics	Mean± SD	Median (min-max) %
Age* *[year]*		
Gender		
Female	131	69.6
Male	58	30.4
Smoking		
Yes	26	13.8
Quit	11	5.8
No	152	80.4
Alcohol Use		
Yes	18	9.5
No	172	90.5
On Psychiatric Medications		
Yes	5	2.6
No	185	97.4
Has Chronic Illness		
Yes	13	6.9
No	176	93.1
On Medication		
Yes	12	6.3
No	177	93.7
Nighttime Sleep Duration **[hour]	7.35±1.26	7 (4-12)
*n=173; **n=189		

Students' ESS score median was determined to be 8 (min-max: 0-24, mean±sd:8.01±4.29), MBI emotional exhaustion subdimension score median was 14 (min-max:2-30, mean±sd:14.51±5.05), depersonalization subdimension score

median was 10 (min-max:0-24, mean±sd:10.15±4.34) and personal accomplishment subdimension score median was 11 (min-max:3-20, mean± sd: 10.79±3.19). In terms of excessive daytime sleepiness, it was observed that 4.7% (n=10) of students experienced severe sleepiness, 7.8% (n=14) of students experienced mild sleepiness and 14% (n=27) of students experienced sleepiness at moderate level; 29.5% (n=53) of students' sleepiness levels were normal, whereas 44% (n=85) of students' sleepiness levels were normal but increased (Figure 2).

Table 2: Distribution of ESS Scores of Students According to Their Definitive Characteristics

	ESS Score		Test Statistics	
	Mean± SD	**Median (min-max)**	**(Z;χ^2)**	**p**
Gender			2.380	0.017
Female	8.42±4.13	8 (0-19)		
Male	6.96±4.76	7 (0-24)		
Smoking			χ^2=5.575	0.062
Yes	6.73±5.75	5 (0-24)		
No	8.23±4.00	8 (0-19)		
Quit	8.91±3.24	11 (3-12)		
Alcohol Use			0.598	0.550
Yes	14.40±6.15	11 (9-24)		
No	7.89±4.07	8 (0-19)		
On Psychiatric Medications			2.540	0.011
Yes	14.40±6.15	11 (9-24)		
No	7.89±4.07	8 (0-19)		
On Medication			0.017	0.986
Yes	8.82±6.84	6 (1-24)		
No	7.94±4.10	8 (0-19)		
ESS: Epworth Sleepiness Scale				

Table 3: Distribution of ESS and MBI Scores of Students According to Their Academic Standings

Academic Grade-Point Average				
	GPA<60	**GPA≥60**		
	Median (Min-Max)	**Median (Min-Max)**	**Z**	**p**
ESS Score	10 (5-19)	8 (0-24)	2.874	0.004
MBI Scores				
Emotional Exhaustion	16.5 (11-30)	14 (2-27)	2.943	0.003
Depersonalization	11 (1-22)	10 (0-24)	1.296	0.195
Personal Accomplishment	13 (3-18)	11 (4-20)	1.993	0.046
GPA: Grade-Point Average; ESS: Epworth Sleepiness Scale; MBI: Maslach Burnout Inventory				

Table 4: Correlations Between ESS Score, Definitive Characteristics and MBI Scores

	ESS Score	
	rho	**p**
Age	-0.077	0.315
Nighttime Sleep Duration	0.065	0.375
Physical Activity	0.062	0.443
Academic Achievement	0.104	0.164
MBI-DD Score	0.280	<0.001
MBI-D Score	0.204	0.006
MBI-KB Score	0.198	0.008

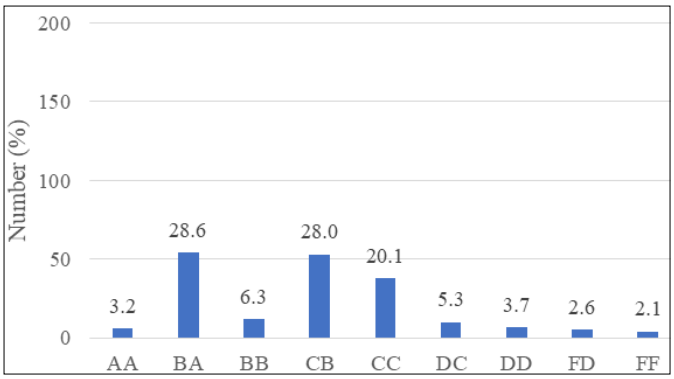

Fig 1: Distribution of Academic Achievement Levels of Students

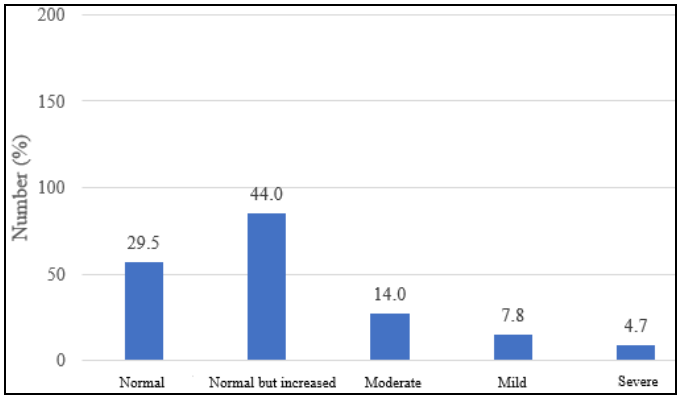

Fig 2: Distribution of Daytime Sleepiness Conditions of Students

When ESS scores of students according to their definitive characteristics were examined, scale score median was determined to be 8 (min-max:0-19) in females and 7 (min-max:0-24) in males (Table 2). ESS score of females were higher when compared to males (p=0.017). Analogously, ESS scores in students using psychiatric medications were higher (p=0.011) in comparison to those who did not. In terms of smoking, alcohol consumption or use of other medications, ESS scores showed no significant differences (p>0.05).

In students whose academic grade point average was below 60, ESS and MBI scores were determined to be higher compared to students whose academic grade point average was 60 or to those who had higher grade point average than 60 (Table 3). Apart from the MBI-Depersonalization score, difference for other scores was determined to be statistically significant (p<0.05).

Results of correlation analysis conducted between certain definitive characteristics (age, nighttime sleep duration, etc.) and ESS score are provided in Table 4. Accordingly, it was determined that a positive, weak, linear relation existed between ESS score and MBI scores.

Discussion

In this study, correlation between daytime sleepiness and burnout conditions of medical faculty students who began their medical professional training. Academic achievement and daytime sleepiness were observed to be correlated during the first three years of basic training of prospective doctors who play a crucial part in implementing of healthcare

services. It was determined that emotional exhaustion and depersonalization had a weak and positive interaction with daytime sleepiness.

Individuals with the average age of 20-23, require 9-10 hours of sleep [16]. In our study, average daily sleep duration was determined to be 7.3 hours. In previous studies, Nihayah *et al*. [17] reported that 62.5% of their students get 7-8 hours of sleep, while Aysan *et al*. [18] reported that 64.7% of their students get 6-7 hours of sleep. Despite the fact that obtained results comply with the results in the literature, it was determined that medical students get insufficient sleep even in the first years of their training.

Twenty-six percent of students suffer from severe daytime sleepiness. Values obtained in this study observed to be higher than the values reported by Roth *et al.* [19] in healthy individuals. The status of daytime sleepiness affects academic achievement negatively [12, 20] and assumes an influential role in cognitive processes [21, 23]. It leads to inability to concentrate, memory problems as well as problems in learning. Consequently, this results in low academic achievement in students undergoing the process of medical training [24]. Obtained results within the scope of this study were determined to comply with the results reported in the literature regarding the low academic achievement in students experiencing daytime sleepiness who are going through the process of medical training [13].

No correlation was found between the status of daytime sleepiness and students' place of residence. The underlying reason was determined to be that the place of residence alone did not constitute any influences. For instance, for students who stay at dorms, factors such as living in a crowded room, comfort of the bed, lighting and student's subsistence with his/her room mates are required to be examined altogether.

In this study, positive correlation was found between status of sleepiness and depersonalization and emotional exhaustion which are located under the subgroup of burnout. Prevalence of emotional exhaustion is approximately at 24% in the general population [25] and it was observed to be similar to findings obtained in this study. When pre-clinical medical faculty students are taken into consideration, influence of emotional exhaustion on the dimension of burnout was interpreted as inadequate stress management for heavy academic schedules and gaining accomplishments associated with these schedules. Consequently, this showed us that students lack the necessary strategies in order to cope with issues including living alone away from their families and trying to overcome the problems associated with this, economic problems, emotional problems brought by the age and difficulty of the classes at the same time.

Research results demonstrated that burnout has no association with gender. The reason why no difference was observed in burnout levels dependent on genders was considered as consequence of the fact that the study was carried out among students who were in the same age group and who receive medical training at the same level. Although there are studies in the literature substantiating these results, there are also other studies demonstrating different burnout levels for males and females [26-29]. This study demonstrated that gender has no effect on excessive daytime sleepiness. As there are studies substantiating this result, studies demonstrating that females have better sleep quality than males and that males suffer from less sleep problems than females, are also available [30-34].

In our study, 26 medical students were smokers and 18 students were alcohol consumers. No significant correlation was found between smoke and alcohol use of students and excessive daytime sleepiness. This might have originated from the fact that the number of smoking and alcohol consuming students was fewer compared to those who did not. Concurrently, this may be affecting the difficulty in falling asleep and sleep quality even more, rather than excessive daytime sleepiness. Because Altıntaş *et al.* [35] reported that college students who had cigarette consumption experienced more difficulties in falling asleep compared to students who did not have cigarette consumption. In medical students, increased alcohol consumption with the intention of coping with stress was reported and, in another study, it was reported that alcohol caused reduced sleep quality [36-37]. Analogously to these results, Karatay *et al*. [38] reported that there was no significant correlation between the alcohol consumption of students and sleep quality, however, they also reported that there was a negative correlation between cigarette consumption and sleep quality and determined that non-smokers had better sleep quality compared to smokers.

This study is important in the determination of excessive daytime sleepiness and burnout levels of students in the first years of medical training. There are numerous reasons behind the incidence of the burnout process in individuals and it is known for a fact that it occurs in reaction to certain cumulations. It is being foreseen that burnout levels and the status of excessive daytime sleepiness occurring in doctors who are considered as one of the most crucial factors in providing healthcare services, during the first year of basic training of this profession may result in even more exhaustion during the period of clinical training and may affect their performance negatively while practicing their profession. Therefore, this was interpreted as reviewing of the basic medical training processes by professionals is necessary.

Acknowledgement

We would like to extend our thanks to research assistant Pervin Demir from the Department of Biostatistics for her assistance in analyses.

References

1. Bauer J, Hafner S, Kachele H, Wirsching M, Dahlbender RW. The burn-out syndrome and restaring mental health at the working place. Psychother Psychosom Med Psychol. 2003; 5:213-22.
2. Serinken M, Ergör A, Çımrın AH, Ersoy G. İzmir ilindeki acil servis hekimlerinin tükenme düzeyleri. Toplum ve Hekim. 2003; 18:293-299.
3. Maslach C, Jackson SE. The measurement of experienced burnout. J Organ Behav. 1981; 2:99-113.
4. Galan F, Sanmartin A, Polo J, Giner L. Burnout risk in medical students in Spain using the Maslach Burnout Inventory-Student Survey. Int Arch Occup Environ. 2011; 84:453-9.
5. Tonetti L, Fabbri M, Filardi M, Martoni M, Natale V.

Effects of sleep timing, sleep quality and sleep duration on school achievement in adolescents. Sleep Med. 2015; 16:936-40.
6. Millman RP. Excessive sleepiness in adolescents and young adults: causes, consequences, and treatment strategies. Pediatrics. 2005; 115:1774-86.
7. Short MA, Louca M. Sleep deprivation leads to mood deficits in healthy adolescents. Sleep Med. 2015; 19:987-93.
8. Cardoso HC, Bueno FCC, Mata JC, Alves APR, Jochims I, Filho IHRV, *et al*. Assessing quality of sleep in medical students. Rev Bras Educ Med. 2009; 33:349–55.
9. Mazurkiewicz R, Korenstein D, Fallar R, Ripp J. The prevalence and correlations of medical student burnout in the pre-clinical years: a cross-sectional study. Psychol Health Med. 2012; 17:188-95.
10. Santen SA, Holt DB, Kemp JD, Hemphill RR. Burnout in medical students: examining the prevalence and associated factors. South Med J. 2010; 103:758-63.
11. Rodrigues RND, Viegas CA, Abreu E Silva AA, Tavares P. Daytime sleepiness and academic performance in medical students. Arq Neuro-psiquiatr. 2002; 60:6-11.
12. Güdük M, Erol Ş, Yağcıbulut Ö, Uğur Z, Özvarış ŞB, Aslan D. Ankara'da bir tıp fakültesinde okuyan son sınıf öğrencilerde tükenmişlik sendromu. Sürekli Tıp Eğitimi Dergisi. 2005; 14:169-173.
13. Pagnin D, de Queiroz V, Carvalho YT, Dutra AS, Amaral MB, Queiroz TT. The relation between burnout and sleep disorders in medical students. Acad Psychiatry. 2014; 38:438-444.
14. Johns MW. A new method for measuring daytime sleepiness: the Epworth sleepiness scale. Sleep. 1991; 14:540-545.
15. Agargin MY, Çilli AS, Kara H, Bilici M. Epworth Uykululuk Ölçeği'nin Geçerliği ve Güvenirliliği. Türk Psikiyatri Dergisi. 1999; 4:261-267.
16. Chen TY, Chou NS, Tzeng NS, Chang HA, Kuo SC, Pan PY, *et al*. Effects of a selective educational system on fatigue, sleep problems, daytime sleepiness and depression among senior high school adolescents in Taiwan. Neuropsychiatr Dis Treat. 2015; 11:741-50.
17. Nihayah M, Ismarulyusda I, Syarif HL, Nur Zakiah MS, Baharudin O, Fadzil MH. Sleeping hours and academic achievements: a study among biomedical science students. Procedia Soc Behav Sci. 2011; 18:617-21.
18. Aysan E, Karaköse S, Zaybak A, Günay İsmailoğlu E. Üniversite öğrencilerinde uyku kalitesi ve etkileyen faktörler. Deuhyo Ed. 2014; 7:193-8.
19. Roth T, Roehrs TA, Rosenthal L. Normative and pathological aspects of daytime sleepiness. Review of Psychiatry/XIII. Washington, DC: American Psychiatric Press, 1994, 707-728.
20. Abdulghani HM, Alrowais NA, Bin-Saad NS, Al-Subaie NM, Haji AMA, Alhaqwi AI. Sleep disorder among medical students: relationship to their academic performance. Med Teach. 2012; 34:37-41.
21. Walker MP. The role of sleep in cognition and emotion. Ann N Y Acad Sci. 2009; 1156:168-97.
22. Walker MP. Cognitive consequences of sleep and sleep loss. Sleep Med. 2008; 9:29-34.
23. Halbach MM, Spann CO, Egan G. Effect of sleep deprivation on medical resident and student cognitive function: a prospective study. Am J Obstet Gynecol. 2003; 188:1198-201.
24. Dyrbye LN, Massie FS Jr, Eacker A, Harper W, Power D, Durning SJ, *et al*. Relationship between burnout and professional conduct and attitudes among US medical students. JAMA. 2010; 304:1173-80.
25. Shanafelt TD, Boone S, Tan L, Dyrbye LN, Sotile W, Satele D, *et al*. Burnout and satisfaction with work-life balance among US physicians relative to the general US population. Arch Intern Med. 2012; 172:1377-85.
26. Gündüz B. Öğretmenlerde Tükenmişliğin Akılcı Olmayan İnançlar ve Bazı Mesleki Değişkenlere Göre Yordanması. Doktora Tezi, Adana: Çukurova Üniversitesi Sosyal Bilimler Enstitüsü, 2004.
27. Polatcı S. Tükenmişlik Sendromu Ve Tükenmişlik Sendromuna Etki Eden Faktörler. Yüksek Lisans Tezi, Tokat: Gaziosmanpaşa Üniversitesi Sosyal Bilimler Enstitüsü, 2007.
28. Girgin G, Baysal A. Tükenmişlik Sendromuna Bir Örnek: Zihinsel Engelli Öğrencilere Eğitim Veren Öğretmenlerin Mesleki Tükenmişlik Düzeyi. TSK Koruyucu Hekimlik Bülteni 2005; 4:172-187.
29. Otacıoğlu SG. Müzik Öğretmenlerinde Tükenmişlik Sendromu Ve Etkileyen Faktörler. İnönü Üniversitesi Eğitim Fakültesi Dergisi. 2008; 9:103-116.
30. Eliasson AH, Lettieri CJ. Early to bed, early to rise! Sleep habits and academic performance in college students. Sleep Breath. 2010; 14:71-75.
31. Şenol V, Soyuer F, Pekşen AR, Argun M. Adolesanlarda uyku kalitesi ve etkileyen faktörler. Kocatepe Tıp Dergisi. 2012; 14:93-102.
32. Liu X, Zhao Z, Jia C, Buysse DJ. Sleep patterns and problems among Chinese adolescents. Pediatrics. 2008; 121:1165-1173.
33. Keshavarz Akhlaghi AA, Ghalebandi MF. Sleep quality and its correlation with general health in pre-university students of Karaj. Iran J Psychiatry Behav Sci. 2009; 3:44-49.
34. Orzech KM, Salafsky DB, Hamilton LA. The State of Sleep among College Students at a Large Public University. J Am Coll Health. 2011; 59:612-619.
35. Altıntaş H, Sevencan F, Aslan T, Cinel M, Çelik E, Onurdağ F. HÜTF dönem dört öğrencilerin uyku bozukluklarının ve uykululuk hallerinin epworth uykululuk ölçeği ile değerlendirilmesi. Sted. 2006; 15:114-120.
36. Ball S, Bax A. Self-care in medical education: effectiveness of health-habits interventions for first-year medical students. Acad Med. 2002; 77:911-7.
37. Lund HG, Brian BA, Reider D, Annie BA, Whiting B, Roxanne Prichard J. Patterns and predictors of disturbed sleep in a large population of college students. J Adolesc Health. 2009; 26:1+-9.
38. Karatay G, Baş GN, Aldemir H, Akay M, Bayır M, Onaylı E. Hemşirelik bölümü öğrencilerinin uyku alışkanları ve etkileyen etmenlerin incelenmesi. HSP. 2016; 3:16-22.