

Research on Sleep Quality and the Factors Affecting the Sleep Quality of the Nursing Students

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ABSTRACT: Purpose: This research has been conducted in order to examine the quality of sleep and the factors affecting the sleep quality. Material/Methods: The sample of this descriptive research is comprised of 223 volunteer students studying at Uludağ University Faculty of Health Sciences Department of Nursing. Research data have been collected through personal features survey and Pittsburgh Sleep Quality Index (PSQI). Results: The average result derived from the sample is 6.52 ± 3.17 . To briefly explain the average of the component scores: subjective sleep quality 1.29 ± 0.76 , sleep latency 1.55 ± 0.94 , sleep duration 0.78 ± 0.99 , habitual sleep activity 0.47 ± 0.90 , sleep disturbances 0.99 ± 0.09 , use of sleeping medication 0.12 ± 0.48 , daytime dysfunction 1.29 ± 0.90 . It has been observed that there is a meaningful discrepancy between average PSQI results and smoking habits of the students, total daily sleeping hours, efficient waking up times, average daily coffee consumption ($p < 0.05$). According to the analyses there is no meaningful discrepancy between the age, gender, where the students live, snoozing during the morning classes, the existence of chronic diseases and daily average tea consumption. ($p > 0.05$) Conclusions: According to the findings in the light of this research; nursing students have low sleep quality.

KEYWORDS: Sleep quality; Pittsburgh Sleep Quality Index; nursing students

Introduction

Sleep, which is directly related to health and quality of life, is a basic need for a human being to continue his bio-psycho-social and cultural functions [1]. Sleep affects the quality of life and health, which is also perceived as an important variable [2,3]. Feeling energetic and fit after sleeping is described as the sleep quality [4]. The fact that, nowadays the complaints about sleep disorder being prevalent, low sleep quality being an indicator of many medical diseases and there is strong relationship between physical, psychological wellness and sleep; sleep quality is an important concept in the clinic practices and related researches on sleep [5].

Sleeping disorders is a common health problem among adolescents and young adults [6]. There is a general belief that university students do not sleep enough [7]. It has been reported that the amount and the quality of the sleep of university students has been changed in past few decades and the sleep disorders has been inclined [8]. In the related researches it is found that sleeping disorder among university students in various frequencies and amounts [9-11]. Low quality of sleep harms not only the academic success but also behavioral and emotional problems [12], negative emotional status, increase in alcohol and smoking habits [13,14]. In another research, it has been found that, there is a link between sleep quality and psychological wellbeing; more psychological diseases are observed among

university students with low sleep quality [15]. Additionally it is recorded in the medical literature that, sleep quality is affected from the external factors such as gender, academic success, academic background, general health, socio-economic status and the stress level of the person [1,4,7,16].

Nursing students may have sleep issues due to their program being tough, time and effort-requiring [3,11]. Because of this matter, students who cannot sleep enough may have various physical, social, psychological problems. Therefore, it is much more important to indicate the sleep quality of the students and the factors affecting. There is a demand for this kind of research since there is only limited amount of related research

Aim of Study

This research is conducted in order to examine the sleep quality of the Nursing students and the factors affecting it.

Material and Method

Subjects

The research sample of this descriptive and cross-sectional research is derived from the population of students studying at Uludağ University Faculty of Health Sciences Department of Nursing in the Spring Semester of 2016-2017 academic year (N=450). The sample of the research is 223 volunteer students.

Instrument

In the research data collection process, personal features survey and Pittsburg Sleep Quality Index (PSQI) has been used. Survey, which is prepared by the researchers scanning the related medical literature, comprises of 11 survey questions. These questions are aimed to indicate the introductory information of the students and the variables affecting the sleep quality (*age, gender, semester, area of residence, existence of chronic diseases, caffeine consumption level, smoking habits*).

Pittsburg Sleep Quality Index (PSQI) used for examination of the sleep quality of the students; is a scale which assesses the sleep quality and the sleeping disorder in the last one month. Pittsburg Sleep Quality Index (PSQI) is devised by the Buysse et al. [17] is adapted to Turkish by the Agargun et al. [18] and internal consistency coefficient is calculated as 0.80. In the examination process of PSQI, 19 issues are scored. PSQI has 7 internal components such as subjective sleep quality, duration of sleep, habitual sleeping activity, sleep disturbance, sleep delay, use of sleeping drugs and daytime dysfunctions. Each component is scored between 0-3. Total score varies between 0-21, total PSQI score being <5 shows high sleep quality, >5 indicates low sleep quality [18].

Statistical Analysis

In the data assessment process; frequency, percentage, arithmetic average and Cronbach's alpha is measured. The total score average of the sample was calculated and the normality test was applied to determine the normal distribution of the sample scores According to this analysis, it is observed that the sample scores does not comply with the normal distribution (Kolmogorov-Smirnov $Z=0.143$, $p<0.05$); nonparametric tests such as Mann-Whitney U and Kruskal Wallis were used to examine the difference between the independent variables and sample averages. Scores are provided as average \pm standard deviation and $p<0.05$ is considered as statistically meaningful results

Ethical Concerns

For the use of the assessment, written permissions are taken via e-mail. For the purpose of the conduct of the survey, written approval from the research commission of the related institution is taken (*Decision no: 2017/7*). Before application and the approval was obtained from them, students were informed about the research and data collection tools.

Results

According to the research, average age of the students is 20.03 ± 1.73 , 68,6% of them are women. 50.2% of the students are in I. year, 19.7% are in II. year, 18.4% in III. year, 11.7% of them are in IV. year. 17% of the students have smoking habits, 56.5% of the sleep 6-7 hours per day. 26% of the students consumes 4-7 cups of tea per day, 19.3% of them uses 2-3 cups of coffee, 46.6% of them wake up energetic after sleep, 19.9% of them have no chronic disease, 41.3% of them snooze during morning lectures.

The total PSQI average of the students is calculated as 6.52 ± 3.17 and the ratio of the students with sleep quality average higher than 5 is 56.1%. (Table 1, Table 2) The students internal component score averages are given below: subjective sleep quality 1.29 ± 0.76 , sleep latency 1.55 ± 0.94 , sleep duration 0.78 ± 0.99 , habitual sleep activity 0.47 ± 0.9 , sleep disturbances 0.99 ± 0.09 , sleeping drug use 0.12 ± 0.48 and daytime dysfunctions 1.29 ± 0.9 (Table 1)

Table 1. PSQI total and internal component score averages of the sample

PSQI Components	X \pm SS
Subjective Sleep Quality	1.29 \pm 0.76
Sleep Latency	1.55 \pm 0.94
Sleep Duration	0.78 \pm 0.99
Habitual Sleeping Activity	0.47 \pm 0.90
Sleep Disturbances	0.99 \pm 0.09
Sleeping Drug Usage	0.12 \pm 0.48
Daytime Dysfunctions	1.29 \pm 0.90
Total PSQI	6.52 \pm 3.17

Although total PSQI score average being above 5, only 56.1% of the students' PSQI averages were above 5. According to this result nearly half of the students' sleep quality can be considered as low sleep quality (Table 2).

Table 2. PSQI score averages of the sample

	n	%
5 and below	98	43.9
above 5	125	56.1

In Table 3 personal features of the nursing students, the relationship between these features and PSQI scores. According to the table, a statistically meaningful relationship between PSQI score averages and smoking habit, total daily sleeping hours, waking up energetic and daily average coffee consumption ($p<0.05$); no meaningful relationship is found between PSQI scores and age, gender, semester level, area of residence, preexistence of chronic diseases,

snoozing during morning lectures, daily average tea consumption ($p>0.05$)

Table 3. Personal feature distribution of the sample students and the relationship between personal features and PSQI scores (n:223)

Personal Features	n	%	Test Results
Gender			U*=1.36
Male	70	31.4	p=0.174
Female	153	68.6	
Age (Gender)	20.03±1.73		r **=-0.094 p=0.160
Semester Year			KW***=6.050 p=0.109
1.Year	112	50.2	
2.Year	44	19.7	
3.Year	41	18.4	
4.Year	26	11.7	
Area of Residence			KW***=3.58 p=0.310
With Family	65	29.1	
In Dormitory	120	53.8	
Alone at Home	10	4.5	
Sharing flat	28	12.6	
Preexistence of Chronic Diseases			U*=1.21 p=0.226
Yes	18	8.1	
No	205	91.9	
Smoking Habits			U*=2.54 p=0.011
Smoking	38	17.0	
Non-smoking	185	83.0	
Snoozing during the Lecture Hours			KW***=1.59 p=0.45
Yes	92	41.3	
No	35	15.7	
Sometimes	96	43.0	
Waking Up Energetic			KW***=26.43 p=0.00
Yes	29	13.0	
No	90	40.4	
Sometimes	104	46.6	
Total Sleeping Hours			KW***=40.06 p=0.000
4-5 hours	29	13	
6-7 hours	126	56.5	
8-9 hours	57	25.6	
9 hours and above	11	4.9	
Tea Consumption			KW***=2.92 p=0.231
0-3 cups	151	67.7	
4-7 cups	58	26.0	
8 cups and above	14	6.3	
Coffee consumption			KW***=10.75 p=0.005
0-1 Cup	172	77.1	
2-3 Cup	43	19.3	
4 Cups and above	83	3.6	

*Mann Whitney U Analysis

**Correlation Analysis

***Kruskal Wallis Analysis

Discussion

According to the results of this research which we conducted in order to examine the factors affecting nursing students' sleep quality and the factors affecting; 56.1% of the students have PSQI average of 5 and lower. In the light of this research, we can infer that more than half of the students have low sleep quality. In a similar research in the United States of America, it is observed that 71% of the students have at least

one sleeping disorder [19]. According to a similar research conducted by Karatay and colleagues [4] 56% of the nursing students have low sleep. According to Aysan and colleagues' research [3] students with sleep quality scores higher than 5 comprises 59% of the sample. Similar research in the medical literature points out that university students have low quality of sleep [10,16,20-23]. Our research results justify the results of researches given above. It is understood from the results of our research

that low sleep quality is an important issue for the nursing students. Extraordinarily apart from our research, according to some similar researches conducted in Turkey less than half of the university students studying in Turkey have sleeping disorders [14,16]. We interpret that, this difference may be caused by the choice of a different sample of students.

According to the results of the study, there was a significant difference between students' sleep quality and smoking habits, total sleep hours, resting status in the morning and average daily coffee consumption (Table 3). It is reported that sleeping is important in terms of the health of young adults [3] and it is said that young people need sleep for an average of 9-10 hours per [4,24]. In this study, students who wake up well-rested and sleeping 6-7 hours per day have higher sleep quality. These findings also supports the medical literature. According to Karatay et al. [4], Sari et al. [14] and Vail-Smith and colleagues' [8] studies, smoking students have lower sleep quality compared to non-smokers. It is known that cigarette contains nicotine which has stimulant effect and it is known that smoking before sleep especially makes it difficult to fall asleep and affects sleep quality negatively. On the other side according to Shcao et al. [25] caffeine containing drinks harms sleep quality. Our study also show parallelism with these findings.

According to the results of this research, it is found that there was no relation between the sleep quality and the age, sex, class level, area of residence, sleepiness in morning classes, presence of chronic diseases and average daily tea consumption (Table 3). Age and gender have been found to be among the factors that may affect sleep quality of individuals, though some studies have shown that some factors such as age, gender, class level and place of residence do not affect sleep quality [3,16]. In this study, it is interpreted that the age factor to be ineffective in sleep quality may be caused by the are in a similar age group. According to researches examining the correlation between gender and sleep quality, females have lower sleep quality than males [3,5,7]. Additionally, first year students' sleep quality may be harmed by these factors; such as their first year curriculum being though, being deprived of family attention, adaptation efforts for a new social environment. Furthermore, considering that the environmental factor on sleep quality is also very effective, it can be assumed that the students living in dormitory stay more crowded rooms and the

sleep quality is lower than the other students. Consequently, our research does not justify the medical literature.

Lund and colleagues [26] pointed out that physical and psychological problems have negative effects of sleep quality. In our study, it is observed that preexistence of chronic diseases does not effect sleep quality. In Saygili and colleagues' research [16] students with chronic diseases have lower sleep quality. Sari and colleagues [14] showed that students confirming to have chronic illnesses have lower sleep quality but this result does not reflect a statistically meaningful relationship between sleep quality and existence of a chronic disease. It is known that chronic diseases related to the respiratory system, especially asthma, are frequently caused by sleep problems and affect sleep quality negatively [16]. The results are not consistent with the literature due to the fact that students who included in the study have declared illnesses which have ambiguous relationship with the sleep quality; since the variety of the chronic diseases are not questioned in this research.

Conclusion

According to the findings in the light of this research; nursing students have low sleep quality. Additionally, students who do not smoke, sleeps 6-7 hours per day and consuming beverages with caffeine less have a better quality of sleep. To raise awaeness among university students and about the concept of sleep quality and the factors affecting the sleep quality and to increase the quality of sleep quality; panel discussions, seminars and conferences focusing on the relationship between alcohol/caffeine consumption, smoking and the quality of sleep are suggested.

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