

# The contributing factors to poor sleep experiences in according to the university students: A cross-sectional study

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**Background:** Sleep problems among university students are common; however, the contributing factors to poor sleep experiences are still unclear. The purpose of this study is to examine the contributing factors to poor sleep experiences in university students. **Materials and Methods:** The study was cross-sectional, and the students completed self-report, anonymous questionnaires provided during an in-class survey. This is a single center study. A descriptive survey was conducted randomly on 256 university students in Turkey. The instruments for data collection consisted of the demographic data, and the contributing factors to poor sleep. **Results:** The most frequent self-reported cause to poor sleep experiences in according to the university students were exposure psychological problems (67.2%), stress (64.8%), exposure to tobacco smoke in the sleeping room (63.7%), pain (62.9%), having family problems (62.5%), being patient (55.1%), air quality of the room (55.1%), strenuous physical activity (53.9%), fatigue (53.5%), sadness (53.1%), noise that caused by other people in the room (52.0%), room scents (sweat, perfume, humidity, naphthalene, etc.) (53.1%), depression (51, 6 %), anxiety, and tension (51, 1%). **Conclusion:** Students should be encouraged to solve psychological problems, to suitable stress-relieving measures, to follow sleep hygiene practice and adequate time management for academic and social activities.


**Key words:** Poor sleep experiences, Turkey, university students

## INTRODUCTION

Factors influencing on the quality of sleep and detection of them remain largely an unidentified public health issue, especially among university students.<sup>[1-3]</sup> Previous research has suggested that university students have more sleep disturbances.<sup>[4-8]</sup> In recent surveys nearly 75% of university students reported occasional sleep problems such as difficulty falling asleep, sleep disturbances, delayed sleep phase syndrome, and excessive daytime sleepiness.<sup>[7,9]</sup> Suen *et al.*,<sup>[10]</sup> study' indicates that many university students suffer from a suboptimal level of overall sleep quality. However, studies regarding contributing factors to poor sleep experiences are rare for university students.<sup>[1,2,8]</sup> The contributing factors were identified and comprehensive measures should be taken to improve the quality of sleep.

Sleep is one of the inevitable daily-living activities and it is one of the most important factors contributing to health.<sup>[11]</sup> Sleep has a positive effect on quality of life and body functions and homeostasis. Sleep is essential for the cellular, organic and systemic functions of an organism with its absence being potentially harmful to health and changing feeding behavior, glucose regulation, blood pressure, cognitive processes and some hormonal axes.<sup>[12]</sup> A quality sleep is essential for physical, cognitive and psychological well-being. Learning, memory processing, cellular repair and brain development are among the most important functions of sleep. In addition to maintaining normal brain functioning, sleep has important roles in controlling the functions of many other body systems. Sleep deprivation is associated with increased daytime sleepiness, reduced neurocognitive performance and fatigue.<sup>[13]</sup>

Disordered sleep is related to impairment of cognitive and psychological functioning and worsened physical health. Its situational or pathological alterations can induce maladaptive functioning and a number of psychiatric and physical diseases.<sup>[14]</sup> Disturbed sleep can be both cause a result of ill and health if recognized can indicate psychosocial, psychological or physical difficulties.<sup>[15]</sup>

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Many factors can disturb sleep in university students. These include the environment with physical, psychological, biological and social disruptions.<sup>[1,16]</sup> Health care professionals need to have a basic understanding of normal sleep development in populations and the contributing factors to poor sleep experiences. Researchers, educators and health care professionals should create a knowledge base regarding the extent to which sleep contributes to the health and well-being of populations.<sup>[17,18]</sup> However, our knowledge and data regarding contributing factors to poor sleep experiences in the Turkey is limited. It is necessary to investigate this issue among the Turkish population because sleep patterns and habits are affected by ethnicity, social factors and culture. The contributing factors to poor sleep experiences in university students in Turkey have not been well studied to date.

The purpose of this study was to investigate the contributing factors to poor sleep experiences in university students.

## MATERIALS AND METHODS

This descriptive, cross-sectional study was based on subjective questionnaires that assessed the contributing factors to poor sleep experiences among university students in academic year 2011–2012. A convenience sample of university students in an university center completed a brief survey on beliefs and attitudes regarding sleep as a health behavior. Participants were 256 university students. The data were collected from April 19 to 27, 2011 using self-report questionnaires. Contact with students was brief. The participating students were informed of the purpose of the study and the methods to be used and signed an informed consent statement.

A questionnaire form was used that developed by researcher in the light of relevant literature. For pilot trial, the first part of the question-form was given to 20 students who were not a part of the main research population. The pilot trial provided a test of comprehensibility and clarity of the questions, and based on it, self-administered, closed-ended, structured questionnaire interview was revised. The questionnaire was distributed randomly to university students in Kocaeli, Turkey and completed and returned anonymously. The first section of the instrument included personal characteristics (gender, age, and marital status); the second section explored the degree of threat for each of a set of preselected physical environmental nineteen risk items; the third section psychological nine risk items; the fourth section biological thirteen risk items; the fifth section social seven risk items. Questions on factors influencing sleep behaviors and habits had a standard closed-ended format with four response alternatives for each potential the contributing factors to poor sleep experiences ranking

from “extreme affect”, “mild/moderate affect”, “no affect at all/minimal affect”, “no idea”.

## Statistical analysis

The data were analyzed using a statistical packet programmed. Data were descriptively presented as percentages. Data were entered using SPSS version 16 statistical software.

## RESULTS

Two hundred fifty-six students (48.0% of the male and 52.0% of the female) participated in the study. The mean age of these students was  $20.7 \pm 2.14$  years (range: 17–24).

The frequency of respondents who perceive very strong/extreme threat related with a list about the contributing factors to poor sleep experiences are presented in Table 1. When university students were asked to self rate environmental factors influencing to sleep”; 63.7 % of answers were indicating “exposure to tobacco smoke in the sleeping room”; 61.7 % of answers were indicating that “noise”. 55.1 % of answers were indicating that “air quality of the room”; 53.1 % of answers were indicating that “room scents (sweat, perfume, humidity, naphthalene, etc.)” 52.0 % of answers were indicating that “noise that caused by other people in the room”.

When university students were asked to self-rate “psychological factors influencing to sleep”; 67.2 % of answers were indicating “psychological problems”, 64.8 % of answers were indicating “stress”; 53.1 % of answers were indicating “sadness”; 51.6 % of answers were indicating “depression”; 51.1 % of answers were indicating “anxiety and tension.”

Regarding “biological factors influencing to sleep”; 62.9 % of answers were indicating “pain”, 55.1 % of answers were indicating “being patient”, 53.9 % of answers were indicating “strenuous physical activity”, 53.5 % of answers were indicating “fatigue,” as shown in the Table 1.

Regarding “social factors influencing to sleep”; 62.5 % of answers were indicating “having family problems”, as shown in the Table 1.

## DISCUSSION

The present study investigates contributing factors to poor sleep experiences. The survey demonstrated a complex pattern of the contributing factors to poor sleep experiences of university students. Over half of the respondents in our study could be determined that the first five physical environmental factors the most affect to sleep; exposure to tobacco smoke in

**Table 1: Physical environmental, psychological, biological and, social factors effects on sleep**

Physical environmental factors	Extreme effect		Mild/moderate effect		No affect at all/ minimal effect		No idea	
	N	(%)	N	(%)	N	(%)	N	(%)
Moisture of the room	99	38,7	110	43,0	35	13,7	12	4,6
Exposure to tobacco smoke in the sleeping room	163	63,7	51	19,9	37	14,5	5	2,0
Air quality of the room	141	55,1	93	36,3	18	7,0	4	1,6
The color of the room	21	8,2	62	24,2	150	58,6	23	9,0
Noise that caused by other people in the room	133	52,0	84	32,8	38	14,8	1	0,4
Seasonal changes	48	18,8	111	43,4	85	33,2	12	4,7
Exposure to ELF-EMF (electric and magnetic fields)	64	25,0	70	27,3	74	28,9	48	18,8
Noise	158	61,7	69	27,0	28	10,9	1	0,4
Being at a different place or residence	71	27,7	119	46,5	62	24,2	4	1,6
Features of bed, pillow, and puff	125	48,8	89	34,8	38	14,8	4	1,6
Being at a high pressure place	57	22,3	103	40,2	50	19,5	46	18,0
Sounds of computer, television, etc.	73	28,5	106	41,4	73	28,5	3	1,2
Darkness of the room	51	19,9	37	14,5	155	60,5	13	5,1
Brightness of the room	98	38,3	85	33,2	67	26,2	6	2,3
Room scents (sweat, perfume, humidity, naphthalene etc.)	136	53,1	87	34,0	26	10,2	7	2,7
Formation of time difference due to travel	47	18,4	79	30,9	95	37,1	35	13,7
Coldness of the room	104	40,6	104	40,6	46	18,0	2	0,8
High room temperature	118	46,1	102	39,8	33	12,9	3	1,2
Adverse air conditions	48	18,8	62	24,2	135	52,7	11	4,3
Psychological factors								
Psychological problems	172	67,2	57	22,3	19	7,4	8	3,1
Stress	166	64,8	70	27,3	18	7,0	2	0,8
Fear	115	44,9	69	27,0	60	23,4	12	4,7
Excitement	126	49,2	84	32,8	38	14,8	8	3,1
Anxiety and tension	136	51,1	86	32,0	31	12,1	7	2,7
Sadness	136	53,1	86	33,6	28	10,9	6	2,3
Joy	86	33,6	92	35,9	71	27,7	7	2,7
Depression	132	51,6	77	30,1	27	10,5	20	7,8
Doubt	110	43,0	86	33,6	45	17,6	15	5,9
Biological factors								
Gain weight	28	10,9	59	23,0	138	53,9	31	12,1
Being patient	141	55,1	92	35,9	19	7,4	4	1,6
Pain	161	62,9	73	28,5	18	7,0	4	1,6
Drug use	42	16,4	102	39,8	90	35,2	22	8,6
Smoke	44	17,2	36	14,1	77	30,1	99	38,7
Alcohol use	57	22,3	38	14,8	69	27,0	92	35,9
Consuming more tea and coffee	62	24,2	87	34,0	87	34,0	20	7,8
Fatigue	137	53,5	65	25,4	49	19,1	5	2,0
Strenuous physical activity	138	53,9	70	27,3	41	16,0	7	2,7
Chronic illness	78	30,5	57	22,3	33	12,9	88	34,4
Excessive eating	102	39,8	94	36,7	46	18,0	14	5,5
The feeling of hunger	97	37,9	98	38,3	54	21,1	7	2,7
Losing weight	18	7,0	48	18,8	130	50,8	60	23,4
Social factors								
Having family problems	160	62,5	64	25,0	20	7,8	12	4,7
Having trouble with friends	101	39,5	95	37,1	54	21,1	6	2,3
Financial distress	88	34,4	94	36,7	59	23,0	15	5,9
Having trouble with partner	113	44,1	78	30,5	33	12,9	32	12,5
Having trouble at school or work	107	41,8	97	37,9	43	16,8	9	3,5
Participation in social and cultural activities	35	13,7	87	34,0	105	41,0	29	11,3
Loneliness	73	28,5	58	22,7	99	38,7	26	10,2

the sleeping room, noise, air quality of the room, room scents (sweat, perfume, humidity, naphthalene, etc.) and, noise that caused by other people in the room. As expected, over half of the respondents recognized tobacco smoking as cause of poor sleep. Bianco and colleagues,<sup>[19]</sup> Cinar and colleagues<sup>[20]</sup> have been defined in their studies that smoking is the first factor as health hazard among environmental risks.

Noise is an environmental stressor that is known to have physiological and psychological effects. Tompkins<sup>[21]</sup> reported that secondhand noise is an important public health problem that is similar in scope to secondhand smoke. Generally, the literature supports the positive relationship between poor sleep and increased noise. Similarly, Büyükyılmaz *et al.*,<sup>[22]</sup> reported that noise affected the quality of sleep in hospitalized Turkish patients. Noise was highlighted in the most bottom rank as an environmental risk in a study with Medical students by Beyhun and colleagues.<sup>[23]</sup> In study of Cinar and colleagues<sup>[20]</sup> noise was the rated the lowest threat to health among environmental risk factors by students.

The most important social factors influencing to sleep were having family problems, as state by the students. Over half of the respondents could be determined that the first five psychological factors that the most affect to sleep; psychological problems, stress, sadness, depression and, anxiety and tension. As the authors discuss themselves, university students overwhelmingly reported that psychological problems and stress were significantly associated with contributing factors to poor sleep experiences. Other studies have found that insufficient sleep and poor sleep quality are associated with stress, negative mood, and difficulties with stress management.<sup>[7,15]</sup> Previous studies on students claimed that poor sleep quality is associated with significant psychological distress, depression, confusion, and generally lower life satisfaction<sup>[10]</sup> Wolfson<sup>[7]</sup> reported that insufficient sleep and poor sleep quality are associated with stress, negative mood, and difficulties with stress management.

Over half of the respondents in our study could be determined that the first four biological factors the most affect to sleep; pain, being patient, strenuous physical activity and, fatigue. These findings were in concordance with reports from previous studies.<sup>[24]</sup> Generally, the literature supports the positive relationship between poor sleep and increased pain. Similarly, Büyükyılmaz *et al.*,<sup>[22]</sup> reported that pain affected the quality of sleep in hospitalized Turkish patients.

## CONCLUSION

This research provides a systematic approach to screening and evaluating the contributing factors to poor sleep

experiences in the university students and provides suggestions for anticipatory guidance regarding healthy sleep which should be part of standard populations' health care.

The results of the survey could then be used by educators as a guide to promoting appropriate measures to improve the sleep of university students.

Systemic education on the importance of sleep, stress and time management is needed for university students. Inclusion of an educational program in university may significantly reduce student's sleep difficulties and improve sleep habits.

We hope our findings constitute a contribution for the improvement of health prevention and intervention strategies directed to university students. This study performed at a single university and new studies should be done with a greater number of university and sample group.

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## AUTHORS' CONTRIBUTIONS

Study concept and designing: Altun I, Cinar N, Dede C, Acquisition of subjects and data: Altun I, Cinar N, Dede C, Analysis and interpretation of data: Altun I, Cinar N, Preparation of manuscript: Altun I, Cinar N, Dede C, All authors have read and approved the final version of the manuscript.

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