

Research Article

Prevalence of Sleep Disorders among Ardabil City's People: North-West of Iran

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Abstract

Objective: Sleep disorders can directly and indirectly affect the life of individuals and related with individual mortality and health. The aim of this study was to investigate the prevalence of sleep disorders in Ardabil city's people.

Methods: This is a descriptive cross sectional study that has been done on 196 randomly selected people. Data collected by a questionnaire includes demographic and sleep disorders questions and then analyzed by statistical methods in SPSS version 16.

Results: 91 (46.4%) of cases were male and rest of them were female. The mean age of participants was 33.5 ± 12.6 . The prevalence of sleep disorders in female and male were 44.9% and 42.4%; respectively. 18.4% of all people used Sleeping drugs. 55.1% of people have problem in falling asleep. There was a significant relationship between the satisfaction level of sleep quality and difficulty in falling asleep, drinking coffee late at night, taking sleep drugs, sleepy during the day and age of individuals.

Conclusion: Results showed that the prevalence of sleep disorders in this study was higher than general population. So, using appropriate methods to improving people's sleep quality and control sleep disorders between them is necessary.

INTRODUCTION

Almost a third of life is passed in sleep. Sleep is a basic physiological need of humans and is required for energy conservation, appearance, and physical well-being; and if it is not provided, the human life is threatened [1]. Sleep is a state of relaxation that reduces stress and anxiety when brain function is restored. During wakefulness, the brain is constantly active but its activity is reduced in sleep mode [2]. Lack of sleep effects on the central nervous system and long awakening often leads to progressive psychological disorders. Drowsiness, slow thinking, irritability, difficulty in concentrating, fatigue and sleep during the day and reducing social communication can be seen in people who don't have enough sleep [3]. According to Rezaeiand *et al.*, study, the risk of dying for people who sleep more than 8.5 or less than 3.5 hours per night, on average, is 15 percent more than those who sleep 7 hours per night. Sleep disorders

can directly and indirectly impact the life of individuals and it affects not only the individual but also the family, colleagues and finally, the community [4]. According to studies conducted in Iran, annually, there are many reports on the number of road, traffic and industrial accidents caused by sleepiness, reduced productivity due to sleep disorders associated with shift work and high costs imposed to society due to use of hypnotic drugs. On the basis, sleep disorders are associated with health and mortality [5]. Rezaeian and *et al.*, in a study showed that the overall prevalence of sleep disorders among medical internship students of Rafsanjan University of Medical Sciences was about 88.4 %. The correlation between falling asleep and source of income was significant. Also, there was significant relationship between snoring and living (sleeping) place [6].

Given that in our country in the field of sleep, research has been largely ignored, so achieving better conditions in this area

requires more attention to sleep and its economic-social and psychological impacts by experts and researchers from various field [5]. Therefore the present study was conducted to determine the prevalence of sleep disorders among Ardabil city's people.

MATERIALS AND METHODS

In this cross-sectional study, 196 randomly selected people from Ardabil city were studied. To collect the data, the sleep disorder questionnaire including 28 questions was used. The first part of the questionnaire contained 11 questions about demographic characteristics includes age, sex, level of education, housing, consumption of caffeinated beverages and smoking. The next part of the questionnaire related to the sleep standard and daily habits. In this section, there were 17 questions related to the overall sleep quality, measuring the average duration of night sleep, time of falling sleep, number of awakenings at night, living conditions, studying and working simultaneously and work at night shift. For the implementation of the study, the students went to public places and markets and selected people and talked with them about the purpose of the study and after people's consent to participate in the study, 200 questionnaires were given to the participants to respond in the presence of the students. At the end, the completed questionnaire was checked and four of the questionnaires were excluded due to poor response. Collected data were analyzed by statistical methods in SPSS version16.

RESULTS

Of 196 participants, 91 (46.4%) were male and 105 (53.6%) were female, with an average age (\pm SD) of 33.5 ± 6.1 years. Most of the respondents (45.9%) had university education. (Table 1) 152 participants (77.5%) usually woke up during the night. 108 (55.1%) often had trouble falling asleep. 37 individuals (18.9%) used the sleeping pills. 42.9% of the participant's level of satisfaction from their sleep was satisfactory. Waking up because of the noise (86.2%) was the most common sleep disorder (Table 2). 157(80.1%) of the participants were sleepy during the day. 170 (86.7%) of the subjects were thinking about certain topics during sleep. There is a meaningful relationship between the quality of sleep and fatigue during the day and thinking about a particular issue while sleeping ($r = 0.18$; p value < 0.01) (Table 3).

DISCUSSION

Given the importance of sleep for health, many studies have been conducted about sleep and sleep disorders. Most of these studies have examined sleep quality as an important indicator of public health. In this study, 40.3% of Ardabil people had poor sleep quality and 42.9% had satisfactory sleep quality and 16.8% had good sleep quality which compared to other studies sleep disorder is high. In Mousavi and *et al.*, study, the prevalence of sleep disorders was 15.5% [8]. Ghoreishi and *et al.*, in the study on sleep quality of medical students reported that 40.6% of the students had poor quality of sleep [9]. The study conducted by Eller and *et al.*, on sleep quality in Estonia revealed that 24% of students had relatively good sleep quality [10]. A large survey study of Malaysian medical students revealed that daytime sleepiness occurred in 35.5% (as assessed by Epworth Sleepiness Score [ESS] > 11), and poor sleep quality was reported by 16% [11]. The results of this study are consistent with Ghoreishi and *et al.*, study [9] but this study is somewhat different from

Table 1: Frequency distribution of demographic variables (N = 196).

percent	Frequency	Variables
		Sex
Male	91	46.4
Female	105	53.6
Education level		
Uneducated	11	5.6
Middle school	33	16.8
Diploma	62	31.7
University degree	90	45.9
Marital status		
Single	74	37.7
Married	113	57.7
Divorced	9	4.6
Occupation		
Unemployment	45	22.9
Self-employed	73	37.3
Employee	43	21.9
Housewife	35	17.9
Residence status		
Alone	13	6.6
With friends	16	8.1
With parents	63	32.2
With husband/wife	104	53.1
Drinking coffee late at night		
Never	149	76.1
1-3 times per night	29	14.8
Almost every night	18	9.1

Table 2: Type of sleep disorder between people (N=196).

Items	frequency	Percent
Waking up at night		
No	44	22.5
Sometimes	109	55.6
Often	43	21.9
Difficulty in falling sleep		
Never	88	44.9
Sometimes	41	20.9
Often	67	34.2
Waking up early in the morning		
Never	72	36.7
Sometimes	82	41.9
Often	42	21.4
Waking up due to noise		
Never	27	13.8
Sometimes	77	39.3
Often	92	46.9
Satisfaction level of sleep quality		
Good	79	16.8
Satisfactory	84	42.9
Bad	33	40.3
Taking sleep drugs		
Never	159	81.1
Sometimes	25	12.8
Often	12	6.1

Table 3: Distribution of people sleep quality and sleepiness situation (N= 196).

sleep quality and sleepiness situation	frequency	Percent
Sleepy during the day		
never	39	19.9
sometimes	130	66.3
often	27	13.8
Feeling tired during the day		
never	27	13.8
sometimes	101	51.5
often	68	34.7
Thinking about a specific topic while falling sleep		
never	26	13.3
sometimes	101	51.5
often	69	35.2

the other studies [10,11]. In explaining this difference, it must be said that perhaps different methods of data collection have been used in the above mentioned studies. Many factors affect difficulty in falling asleep, one of which could be drinking coffee late at night. Our study showed that 70 percent of people who drink coffee at night have problem in falling sleep that this reflects the high correlation between these two factors .So it can be concluded that drinking coffee late at night has a high impact on difficulty in falling asleep ($r = 0.84$; p value < 0.01). Older age, as a demographic variable, was found as a risk factor for subjective sleep disturbance and dissatisfaction [12]. The results of our study showed there was a significant negative correlation (significantly negative correlation) between the level of satisfaction with the quality of sleep and age. This means that with increasing the age, satisfaction with sleep quality decreases ($r = -0.26$; p value < 0.05). Those who used sleeping pills were often sleepy during the day, and there is a significant relationship between these factors ($r=0.34$; p value < 0.001). Of Ardabil people about 18.9% were using sleep pills which from them 36% had poor sleep quality. The results showed that there is a correlation between sleep quality and sleep-inducing drugs ($r=0.6$; p value < 0.01). The study conducted by Rezaei and *et al.*, in a study showed that, 13% of students used the sleeping drugs which from them 52% had poor sleep quality which agreement with our study results [4]. Taylor and *et al.*, in a study showed that 33% of individuals with bad sleep quality and 5 % of people with good sleep quality used sleep drugs [13].

The prevalence of sleep disorder in different studies and population has been reported from 10% to 30% [14,15]. Torabi and *et al.*, in a study showed that, 70.3% had sleep disorder and used at least one of the non- pharmacological methods and 7.5 percent of them used pharmacological methods to cope with sleep disorders and the rate of sleep disorder in this study was upper than our study [16]. In a study to determine the prevalence of sleep disorder in general population of Tabriz, has been reported 35.2% [6]. Another study examining the prevalence of sleep

disorder and related factors at Tehran University have shown

that sleep disorders are common among medical students and there is a significant relationship between sleep disorders and associated variables such as living conditions and job pressure [8]. Shamsaei and *et al.*, in a study reported that the prevalence of sleep disorders among the people of Hamedan is 23.3% [7]. Rezaei and *et al.*, in a study reported that the prevalence of sleep disorders among university students in Ardabil is 50.3% [4]. In the present study, 42.3% of men and 44.8% of women had sleep disorder. The results of this study are consistent with some study but this study is somewhat different from the others [7-9].

CONCLUSION

Results of our study showed that the prevalence of sleep disorders in Ardabil city people is higher than other places. So, using appropriate non- pharmacological methods to improve sleep and also sleep control by educating the general people is necessary and doing other studies is recommended in future.

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Ethical approval

The study was approved by the Institutional Ethics Committee.

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