# Medical Science

# Investigating the relationship between personality type and sleep quality in students living in dormitories of Behbahan Faculty of Medical Sciences: A study in southwestern Iran

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## ABSTRACT

*Background*: Sleep quality is a clinical structure and a complex phenomenon that is subjective to measurement. Most psychologists consider personality as the most important and fundamental subject of psychology and this issue is undoubtedly effective in lifestyle and human behavior. Therefore, this study aims to investigate the relationship between personality type and sleep quality in students was performed. *Materials and Methods*: This is a cross-sectional descriptive-analytical study that was conducted in 2020. The study population consisted of all students living in dormitories of Behbahan Faculty of Medical Sciences. The instruments used in this study were the Pittsburgh Questionnaire (PSQI) to measure and evaluate the quality and patterns of sleep and the Ratus A and B personality type questionnaire to determine the personality type. Also, SPSS 22 statistical software was used to analyze the data. *Results*: Of 109 participants, 53.2% were boys and 46.8% were girls. 98.2% were single and the rest were married. The correlation between personality type and sleep quality was negative but not statistically significant (P = 0.37).*Conclusion:* The results indicate that there is no significant relationship between sleep quality and personality types andit can be said that personality types are not effective on sleep.

**Keywords**: Personality Type, Sleep Quality, Students

## 1. INTRODUCTION

Sleep is one of the important elements in the circadian cycle that restores physical and mental strength (Ghoreishi and Aghajani, 2008) and plays an important role in human health, learning and memory (JafarianAmiri et al., 2011). Humans spend about a third of their lives sleeping (Rambod et al.,

2013). Sleep quality is a clinical structure and a complex phenomenon that is subjective measurement, ie it can not be measured in the laboratory and in the opinion of the definition of mental indicators related to how to experience sleep such as sleep satisfaction (Lima et al., 2002). The importance of sleep quality is essential in two ways: first, sleep-related complaints are common, and second, poor sleep quality is a measure of special evaluation in many diseases (Ahmadzadeh et al., 2013). Poor sleep affects the quality of life and can increase the severity of symptoms such as pain, depression and anxiety (Hugel et al., 2004). Insomnia has major negative effects on quality of life and reduces daily performance based on physical, psychological and social activities (Rambod et al., 2013). About one-third of adults worldwide have sleep disorders. This problem is exacerbated with age and the addition of chronic diseases, and increases to about 69% (Rambod et al., 2013). Also, some symptoms of diseases in the person, such as decreased immune system function and heart disease can occur due to poor sleep quality.Women have more sleep disorders than men. Some studies have found that sleep problems are less common in people with higher education (Sheikhy, 2015).

Early onset, aggressive behaviors, and decreased social interaction are significantly higher in people with sleep deprivation than in others (Jafarian Amiri et al., 2011). Students are one of the groups that suffer from sleep disorders specifically in the population (Wolfson, 2010). The quality and quantity of sleep of many students may change after enrolling in university (Mansouri et al., 2012). Studies have shown that there is a relationship between sleep onset time, sleep disorder and sleep duration with students 'academic performance, so it can be expected that with the improvement of students' sleep status, their academic status will also improve (Rezaei et al., 2012). A study by Sweileh et al., (2009) 400 Palestinian students found poor sleep quality in 9.8% of students. In a study conducted by Mansouri et al., (2012) 277 students living in dormitories of Tehran University of Medical Sciences, 73.3% of students had poor sleep quality. A study by Ghoreishi et al., (2008) showed that 40.6% of medical students in Zanjan had poor sleep quality. In their study, the prevalence of poor sleep quality among students was 65.9%. Sweileh et al., (2011) reported poor sleep quality for 39.8% of students. In a study sleep and wake patterns of 466 first year medical students up to Hafnem and medical assistant of Iran University of Medical Sciences found that only 74% of them were satisfied with their night sleep and reported their sleep complete. Thirty-six percent reported an average of 43 to 41 percent of participants who went to bed at least one to three times a week later than usual (Aghajanloo et al., 2011).

Personality is an abstract concept that appears through the combination of thoughts, motivation and excitement in individual behaviors and is the source of human differences and manifests itself in the form of individual characteristics and traits (Farhadi Nasab and Azimi, 2008). In other words, personality is a dynamic and specific trait that is responsible for the interaction and adaptation of the individual with others and the social environment. Everyone's personality is relatively unchangeable and predictable (very similar). Personality patterns the bedrock of a person's character is considered and becomes more obvious when faced with stresses and life events (very similar). Stimulating and stressful factors in daily life lead to psychological stress and emotional distress. Some factors affect how people react to stressful variables. These include personality types and the number and extent of people facing stressful life situations (Tehrani et al., 2012).

Friedman and Roseman divided individuals into personality types B and A. Type A, which is prone to coronary heart disease, has characteristics such as hostility, aggression, and high emotional arousal. Type B includes personality traits such as self-obedience, personality independence, and the ability to control anger (Tehrani et al., 2012). People with type A personality are more vulnerable to the destructive effects of daily stress, especially job stress, due to their high energy, competitiveness, ambition, impatience and militancy, early anger and some other characteristics. Indicates personality type B, which are calm people (Lima et al., 2002). People with a Type A personality feel under constant pressure and in limited circumstances, endure a lot of workload, usually have limited rest, compete with themselves, disagree with supervisors, and are often challenged. They are restless and anxious and can not keep their composure. In contrast, people with personality B are tolerant, cool, calm and gentle, balanced in work and do not overdo it, and rest without sensitivity and guilt (Akaberian et al., 2013).

Studies conducted in the country have not yet clearly examined the relationship between personality types and sleep quality of students, so this study was conducted to investigate the relationship between sleep qualities with personality type of students living in dormitories of Behbahan Faculty of Medical Sciences.

## 2. MATERIALS AND METHODS

The present study is a cross-sectional-descriptive-analytical study that was conducted in 2020. The study populations in this study are students living in dormitories of Behbahan Faculty of Medical Sciences. The minimum number of samples required for the study was estimated at 42 according to statistical formulas, based on which the researchers selected 109 people to study to expand the statistical population. Data collection tools included demographic questionnaire (age, sex, marital status, field, grade, history of depression and anxiety, history of smoking and alcohol consumption, consumption of beverages such as tea, coffee, soft drinks and

chocolate consumption); The Pittsburg Sleep Quality Questionnaire (Pittsburg) was also a personality type A and B questionnaire that were completed by participants through self-report method. The Pittsburgh Questionnaire (PSQI) is designed to measure and assess the quality and patterns of sleep with 9 questions. Questions 5-9 also indicate sleep continuity disorders, frequency of medication use to fall asleep, daily drowsiness, impaired performance of daily tasks and quality of mental sleep.

This questionnaire examines seven components including: subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, Use of sleeping drugs and Daily dysfunction. The use of sleeping medication is daytime dysfunction and is scored on a 4-point Likert scale from 0 to 3, with a score of 3 indicating the maximum negative on this scale. The total scores of the components are in the range of 0-21, and the higher the score, the lower the quality of sleep. A final score of 5 indicates poor sleep quality. The validity and reliability of this questionnaire has been confirmed in several studies (Jafarian Amiri et al., 2011; Ahmadzadeh et al., 2013; Henderson and Tannock, 2004) and has a reliability of 0.86 (Cronbach's Alpha = 0.86) has been mentioned for it (Rezaei et al., 2012).

To determine the personality type of individuals, the Ratus personality type A and B questionnaire was used. This questionnaire examines 25 personality traits of the individual. To complete the questionnaire, people chose one of the "yes" or "no" options for each question, which was given a "score of one" for the yes answer and a "zero score" for the no answer. The sum of the scores shows more than 13 tendencies to type A, less than 13 tendencies to type B, a score less than 5 strong tendencies to type B and a score of more than 20 strong tendencies to type A. Content validity and reliability of this test have been confirmed in studies conducted in Iran and its reliability coefficient is 77. The reliability coefficient of this test in studies conducted outside Iran has been reported to be 0.80 (Akaberian et al., 2013).

Inclusion criteria were student satisfaction for participating in the study and filling out the questionnaires and exclusion criteria were student dissatisfaction to participate in the research and the questionnaires were distorted or incomplete, which incidentally due to defects in the questionnaires. 11 cases were excluded from the study. From an ethical point of view, the forthcoming study was explained to the students, the confidentiality of the results was induced to the students, and the questionnaires were completed anonymously. Of course, this opportunity was given to the participating students, if they wish, can be informed the result of their evaluation based on the codes assigned in the questionnaire. To analyze the data, first the questionnaires were coded and then SPSS 22 statistical software was used to perform statistical tests.

## 3. RESULTS

The statistical population in this study consisted of 109 students studying and living indormitories of Behbahan Faculty of Medical Sciences who were studying in the 2020 academic year. According to the results obtained in Table 1, out of 109 participants, 53.2% were boys and 46.8% were girls. 98.2% were single and the rest were married. Of this number, 18.3% were related to associate degree and 81.7% were bachelor.

According to the self-reported report of students, 11.9% of them reported a history of depression and 56.9% of them a history of anxiety, 11.9% a history of sleeping pills, 5.5% a history of alcohol consumption, 7.3% a daily consumption of coffee, 50.5% Daily consumption of tea, 3.7 daily consumption of soft drinks and 17.4 daily consumption of chocolate. The mean age of study participants was 2.9±21.24, which is completely young. Also, the average grade point average ofthe participants in this study (girls and boys) were 17.34. Table 1 shows the demographic information of these people. There was no statistically significant relationship between gender and total sleep quality score. According to the results of Table (2), the correlation between personality type and sleep quality was negative but not statistically significant (P = 0.37). According to the results of Table (3), the correlation between other components of sleep quality and personality type was negative but not statistically significant (p >0.05). According to the results of Pearson correlation coefficient, with increasing the score of personality type, the quality of sleep score decreased, which was also significant (p >0.05) (figure 1).

**Table 1** Demographic indicators of students living in dormitories

| Variable | Classification | Number | Percent |
|---|---|---|---|
| Gender | Male | 58 | 53.2 |
| | Female | 51 | 46.8 |
| Marital Status | Single | 107 | 98.2 |
| | Married | 2 | 1.8 |
| Field of Study | Radiology | 20 | 18.3 |
| | Nursing | 45 | 41.3 |
| | Surgical Technology | 35 | 32.1 |

| | | | |
|---|---|---|---|
| | Occupational Health Engineering | 9 | 8.3 |
| Level of Education | Associate Degree | 20 | 18.3 |
| | Bachelor | 89 | 81.7 |
| History of depression | Yes | 13 | 11.9 |
| | No | 96 | 88.07 |
| History of anxiety | Yes | 62 | 56.9 |
| | No | 47 | 43.1 |
| History of taking sleeping drugs | Yes | 13 | 11.9 |
| | No | 96 | 88.1 |
| Cigarette smoking history | No | 100 | 91.1 |
| | Five times a week | 1 | 0.9 |
| | Two to three times a week | 2 | 1.8 |
| | Rarely | 6 | 5.5 |
| History of alcohol consumption | No | 103 | 94.5 |
| | Rarely | 6 | 5.5 |
| Drink coffee during the day | No | 29 | 26.6 |
| | Daily | 8 | 7.3 |
| | Five times a week | 4 | 3.7 |
| | Two to three times a week | 17 | 15.6 |
| | once a week | 8 | 7.3 |
| | once every two weeks | 4 | 3.7 |
| | once a month | 7 | 6.4 |
| | Rarely | 32 | 29.4 |
| Drink tea during the day | No | 13 | 11.9 |
| | Daily | 55 | 50.5 |
| | Five times a week | 11 | 10.1 |
| | Two to three times a week | 17 | 15.6 |
| | once a week | 3 | 2.8 |
| | once every two weeks | 2 | 1.8 |
| | once a month | 2 | 1.8 |
| | Rarely | 6 | 5.5 |
| Drink during the day | No | 20 | 18.3 |
| | Daily | 4 | 3.7 |
| | Five times a week | 10 | 9.2 |
| | Two to three times a week | 15 | 13.8 |
| | once a week | 20 | 18.3 |
| | once every two weeks | 13 | 11.9 |
| | once a month | 16 | 14.7 |
| | Rarely | 11 | 10.1 |
| Consume chocolate during the day | No | 18 | 16.5 |
| | Daily | 19 | 17.4 |
| | Five times a week | 13 | 11.9 |
| | Two to three times a week | 21 | 19.3 |
| | once a week | 11 | 10.1 |
| | once every two weeks | 10 | 9.2 |
| | once a month | 2 | 1.8 |
| | Rarely | 15 | 13.8 |

* Significance level below 0.05 is considered.

**Table 2** Mean personality type, sleep quality and its components relationship with some demographic variables in dormitory students

| Variable | Mean | Standard deviation | Gender | Marital status | Field of study | Education level | History of depression | History of anxiety | History of taking sleeping drugs | Cigarette smoking history | History of alcohol consumption | Drink coffee during the day | Drink tea during the day | Drink during the day | Consume chocolate during the day |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Personality type | 2.39 | 0.91 | 0.51 | 0.54 | 0.71 | 0.5 | 0.1 | 0.97 | 0.31 | 0.78 | 0.45 | 0.34 | 0.17 | 0.79 | 0.92 |
| Subjective sleep quality | 1.70 | 0.91 | 0.02 | 0.74 | 0.03 | 0.2 | 0.6 | 0.13 | 0.36 | 0.03 | 0.02 | 0.3 | 0.67 | 0.2 | 0.39 |
| Sleep latency | 1.64 | 1.04 | 0.17 | 0.24 | 0.69 | 0.6 | 0.89 | 0.11 | 0.64 | 0.36 | 0.95 | 0.31 | 0.66 | 0.81 | 0.8 |
| Sleep duration | 1.52 | 1.18 | 0.23 | 0.53 | 0.28 | 0.06 | 0.45 | 0.26 | 0.34 | 0.64 | 0.17 | 0.46 | 0.29 | 0.72 | 0.5 |
| Habitual sleep efficiency | 0.13 | 0.49 | 0.7 | 0.69 | 0.54 | 0.42 | 0.63 | 0.85 | 0.64 | 0.86 | 0.49 | 0.74 | 0.17 | 0.92 | 0.85 |
| Sleep disorders | 0.14 | 0.46 | 0.68 | 0.3 | 0.48 | 0.29 | 0.35 | 0.76 | 0.58 | 0.97 | 0.72 | 0.59 | 0.33 | 0.04 | 0.44 |
| Use of sleeping drugs | 1.8 | 0.57 | 0.53 | 0.65 | 0.01 | 0.02 | 0.56 | 0.67 | 0.29 | 0.07 | 0.43 | 0.85 | 0.18 | 0.6 | 0.41 |
| Daily dysfunction | 1.19 | 0.95 | 0.1 | 0.03 | 0.59 | 0.34 | 0.46 | 0.35 | 0.87 | 0.82 | 0.42 | 0.79 | 0.65 | 0.57 | 0.67 |
| Total score | 7.43 | 3.13 | 0.03 | 0.97 | 0.18 | 0.51 | 0.47 | 0.1 | 0.37 | 0.23 | 0.26 | 0.76 | 0.16 | 0.28 | 0.4 |
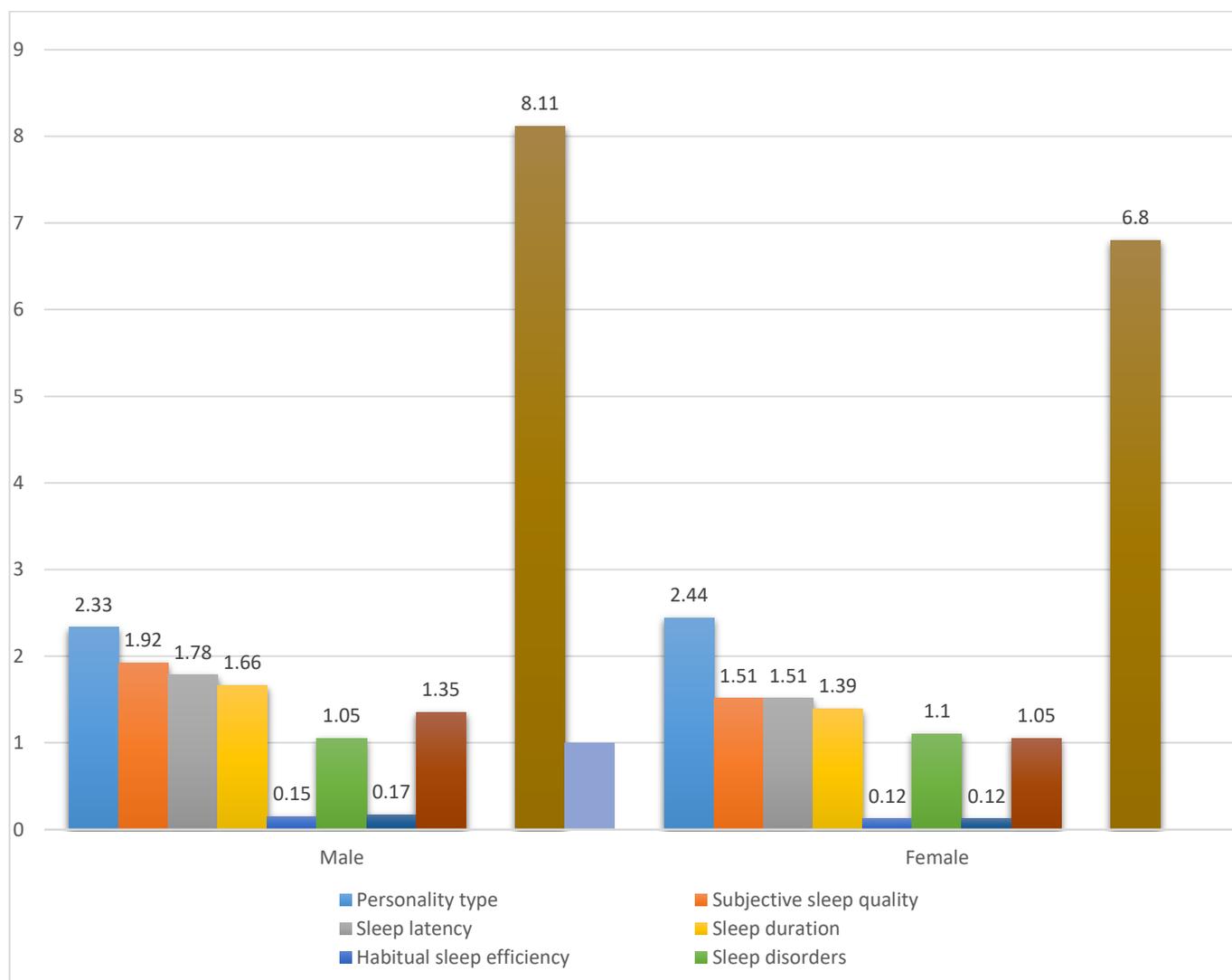


**Figure 1** Comparison of personality type, sleep quality and its components in both Genders.

**Table 3** Correlation between personality type and sleep quality and its components.

| Variable | Subjective sleep quality | Sleep latency | Sleep duration | Habitual sleep efficiency | Sleep disorders | Use of sleeping drugs | Daily dysfunction | Total score |
|---|---|---|---|---|---|---|---|---|
| Personality type | 12.-0r= P=0.20 | 0.38-r= P=0.69 | r = 0.75 P=0.44 | r = -0.04 P =0.96 | r = -0.82 P = 0.39 | r = - 0.03 P = 0.97 | r = - 0.18 P = 0.61 | r = - 0.08 P = 0.37 |

* Significance level is considered p <0.05.

## 4. DISCUSSION

This study investigated the relationship between personality type and sleep quality of Behbahan Faculty of Medical Sciences students. The results showed that there is no significant relationship between personality type and sleep quality of students. Basically, sleep problems manifest themselves in various ways, including sleep disturbances and delays, reduced sleep duration, and nightmares. Therefore, the results of this study did not show a significant relationship that shows that personality type has a negative effect on their sleep quality. It should be noted that there was a significant relationship between gender and total sleep quality score and boys scored higher in these components. Also, there was a significant relationship between mental quality of sleep and history of smoking and alcohol consumption, which indicates the negative stimulatory effect of smoking and alcohol on sleep. Mental health and avoidance of substances have a very high role in sleep quality. In the study examined the relationship between mental health and sleep quality of Shahid Beheshti medical students and the results showed a significant relationship between mental health and Students' sleep quality showed (p <0.001) (Rahmati and Rahmani, 2015).

The point to consider in this regard is that from the point of view of human psychology, they are similar in nature. That is, every human being has an independent identity and personality that manifests itself in a special way and distinguishes him from others. The personality traits of individuals are so different that no two human beings are exactly alike. Every human being with any personality includes a unique process that manifests these differences in the form of behavior, speech, ethics, attitude and lifestyle, mental structure and of course the quality of sleep. Another issue that should be considered in relation to sleep quality and personality type and in this study clearly showed itself is the role of clinical disorders such as anxiety and depression. In this study, 11.9% of students stated that they have experienced depression and 56.9% have experienced anxiety in their lives, which are very important issues and are very effective in reducing the quality of sleep and disrupting sleep patterns. These disorders certainly lead to mental disorders and reduce the quality of students' sleep (Bertelson and Monroe, 1979).

In their study, Verdi et al., (2005) concluded that 31% of medical students have poor sleep quality and there is a significant relationship between sleep quality and academic achievement. In general, sleep is one of the basic human needs that affects the mental health and daily functioning of people in various areas of life such as social, occupational and educational relationships, and its disruption causes defects in individual and social functions and even. It has a negative effect on a person's mood.

The findings of the present study indicate that the pattern and quality of students' sleep has no significant relationship with their personality type. The results of the present study are not consistent with the study of Wolfson, 2010; Sweileh et al., 2011; Rahmati and Rahmani, 2015; Henderson and Tannock, 2004. All of these researchers showed in their studies that there is a significant relationship between sleep quality and students' personality, and this issue is largely influenced by their type and personality traits. The research stages yielded different results from the results of the above researchers and no significant relationship was observed between sleep quality and its components with students' personality type.

Finally, it can be stated that the factors that were effective in lowering the quality of sleep and aggravation of students' insomnia and to some extent were identified. Consumption of stimulants such as; Tea, coffee, chocolate, cigarettes, alcohol, soft drinks and stimulants also the quality of sleep from other factors such as; Peer group, hereditary factors, parents, social class, culture and living environment are also affected and student dormitory life can include all of these stimuli and these factors lead to defects in daily personal functioning and the quality of learning and the student's academic achievement will have a negative impact.

## 5. CONCLUSION

The present study was to investigate the relationship between personality types and sleep quality of Behbahan Faculty of Medical Sciences students and the results showed that there is no significant relationship between personality types and sleep quality of students. A problem to consider is the lack of a significant relationship between sleep quality and its components with students'

personality type. Accordingly, and considering that it was not possible to study all the independent variables that affect the quality of sleep and its components, so it is recommended to research other variables such as daily habits, financial-economic issues, and the level of student self-care with the quality of their sleep. It should also be noted that due to the importance and sensitivity of medical sciences and the relationship of this group with public health, it is recommended that specialized interviews be conducted in the admission of students in these fields and the most care in the admission of these students. To be attended by people with the lowest rate of personality disorders and the highest level of mental and physical health in these fields.

## Conflict of interest
There is no conflict of interest among the authors of the article.

## Ethical approval
This article is the result of the design of Shahid Beheshti School of Nursing and Midwifery with the ethical code IR.SBMU.PHARMACY.REC.1399.065.

## Data and materials availability
All data associated with this study are present in the paper.

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