

Research on Sleep Quality of College Students Based on Pattern Recognition

--Take Anhui University of Finance and Economics as an example

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Abstract

After entering the university, modern college students break away from the original scope of life, are prone to immerse in the virtual world and become confused about their studies, future and interpersonal relationships, making the poor quality of students' sleep a very serious social phenomenon. At present, many medical and psychological studies have confirmed that the quality of sleep is directly related to the mental health of college students. Therefore, the research in this paper takes the students of Anhui University of Finance and Economics as the object to carry out the survey, and uses the Pittsburgh Sleep Quality Index (PSQI) and SPSS19.0 for statistical analysis to study the current situation of college students' sleep quality and the causes of harm. The results showed that mental stress, living habits, bedroom environment, gender and age are all important factors affecting the sleep quality of college students. On the basis of the above investigation and research, the researcher conducted a one-week intervention on the people with poor sleep quality through the ways that can improve sleep from the collected questionnaires, and summarized and refined the countermeasures and suggestions that can effectively improve the sleep quality of college students, So as to help college students achieve high-quality sleep.

Keywords

Sleep quality; College student; Influence factor.

1. Introduction

Sleep is one of the basic behaviors of human beings. As a necessary physiological process for human survival, it is a basic indicator to measure the level of health in clinic, and is closely related to physiological and psychological functions [1]. Sleep is not only the main form of rest, but also the necessary link for the body to recover, integrate and enhance memory, which is related to the life and learning status of every student, as well as the physical and psychological health.

However, according to the survey, about one third of people in China have sleep problems. Among them, the prevalence of sleep disorders among college students is as high as 40.2%, the prevalence of anxiety is 7.59% - 27.9%, and the prevalence of depression is 7.4% - 29.32%. Poor sleep quality is one of the risk factors for college students to produce depression, and long-term depression or anxiety can aggravate sleep disorders.

After entering the university, college students are out of their original scope of life, so they are easy to immerse in the virtual world and become confused in academic and interpersonal

communication; In addition, many college students have poor learning autonomy, have no clear goals in study and life, and form bad work and rest time, which will subtly affect the quality of sleep. Therefore, it is very important to investigate the sleep quality of college students. Based on this social phenomenon, this study conducted a questionnaire survey on the students of Anhui University of Finance and Economics, analyzed the data using the Pittsburgh Sleep Quality Index (PSQI) and SPSS19.0, and explored the current situation of college students' sleep quality and its influencing factors; The group with poor sleep quality was intervened for one week by using the method of promoting sleep in the collected questionnaire, and the measures and opinions that can effectively improve the sleep quality of college students were summarized and put forward to help college students establish good living habits and work and rest rules, and improve their sleep quality.

2. Investigation on Sleep Quality of College Students

2.1. Investigation object

This study took the students of Anhui University of Finance and Economics as the object to conduct a questionnaire survey, and 234 copies were effectively recovered. Among them, there are 111 males and 123 females; 220 undergraduate students and 14 graduate students. The age distribution is 17-24 years old.

2.2. Investigation method

In this study, the results of the questionnaire were investigated by using Self-Rating Anxiety Scale (SAS) and Pittsburgh Sleep Quality Index (PSQI). SAS contains 20 self-evaluation items. The higher the final score, the higher the anxiety level; The total score range of PSQI is 0-21. The higher the score is, the worse the sleep quality is. SPSS 19.0 is used for statistical analysis of data. The results are shown in Table 1.

Table 1. Overall sleep quality of college students

Sleep quality	Number of people	Male	female
Good	23	9	13
Moderate	168	83	85
Poor	43	23	20

2.3. Investigation process

Based on the study of a large number of documents related to college students' sleep status and measures to improve sleep quality, this study designed an implementation plan, and began to distribute questionnaires on the campus of Anhui University of Finance and Economics in April 2022. After the questionnaire was collected, in order to grasp the measures and opinions that can promote sleep quality more deeply and carefully, the group with poor sleep quality was intervened for one week by using the methods that can promote sleep in the collected questionnaire. The contents include: proper exercise; Ensure that the dormitory lights out in time; Go to bed without electronic products; Negotiate with roommates to ensure a quiet environment; Change comfortable bed quilts, pillows, etc.

2.4. Investigation results

(1) In 234 questionnaires, 111 boys, accounting for 47.4% of the total, and 123 girls, accounting for 52.5% of the total. The overall average PSQI score of college students' sleep quality is 3.36, among which the students who sleep well, that is, the students with $PSQI < 3$, account for 9.8%; College students with moderate sleep, namely, 71.8% of students with $3 \leq PSQI \leq 7$; College students with poor sleep quality, namely, 18.3% with $8 \leq PSQI$. As shown in Table 1, comparing the sleep quality of college students of different sexes, it is found that the sleep quality of girls

and boys is different. The proportion of girls with good sleep quality is 10.5%, and the proportion of boys with good sleep quality is 8.1%. The proportion of girls with good sleep quality is higher than that of boys. The proportion of insomnia symptoms in girls was 16.2%, while that in boys was 20.7%. It can be seen that the overall sleep quality of female students is better than that of male students. According to the information in the questionnaire, the author speculates that these differences may be due to the fact that male students are more likely to indulge in electronic products and stay up late playing games with friends, and the poor living hygiene habits lead to the unfavorable dormitory environment for rest.

Table 2. Number of people with poor sleep quality in different grades

	Freshman	Sophomore	Junior or senior	Graduate student
Number of people with average sleep duration less than 5 hours	9	1	0	0

(2) The comparison of sleep quality of college students of different grades is shown in Table 2. Among the students who sleep less than 5 hours on average in this survey, freshmen account for 90%, sophomores account for 10%, and junior, senior and graduate students account for 0%. It can be seen that freshmen are most likely to suffer from poor sleep quality. The questionnaire information shows that the main reason is that college students leave their familiar lifestyle after entering college, and they do not know how to survive independently in the new environment, and they also desire freedom. Under such circumstances, it is easy to be attracted to and indulged in the entertainment products of the Internet and game companies, mainly playing online games, chasing dramas, and brushing Tiktok short videos, which is consistent with the results of Huang Xiaojing's survey on "factors affecting college students to stay up late" [2]. At the same time, in the course of learning, unlike in the past, there are teachers who carry out learning with regular tests to check their learning status; The university is mainly independent learning, and just entering the university, it is easy to sign up for multiple courses. The span of knowledge and the complexity of things are incomparable to primary and secondary schools in the past. In terms of interpersonal communication, we all have a common goal in the past, but in the university, the proportion of personalization is larger, and students want to play their own personality. How to coordinate the relationship between all parties under the premise of ensuring personality is also a problem that we can not encounter in the past.

(3) According to the survey of questionnaire stars, it has become the norm for college students to fall asleep late and difficult to fall asleep. The main reasons for this phenomenon are: anxiety caused by mental stress, addiction to electronic products, heavy academic and social work tasks, overeating before bedtime, poor dormitory environment and difficulty in reaching an agreement with roommates on work and rest rules, etc. Previous studies have shown that mobile phone addiction not only affects sleep quality, but also easily induces negative emotions such as anxiety [3]. And most students have the habit of taking a long lunch break or being unable to get up, which will affect the quality of sleep at night.

(4) The correlation analysis between sleep quality and anxiety of college students found that the total average score of SAS of college students was about 43.33, and 21 of them had serious anxiety, accounting for 8.9% of the total number. The correlation analysis of sleep quality and anxiety level found that there was a positive correlation between anxiety level and sleep quality, and the higher the anxiety level, the more likely the sleep quality of the individual to have problems [4].

3. Countermeasures and Suggestions

After a one-week intervention on the group with poor sleep quality by using the method that can promote sleep in the collected questionnaire, it is found that the following improvement measures can effectively improve sleep quality.

3.1. Students should exercise properly and live regularly

Make full use of your spare time, try to restrain yourself from forming good sleep habits, and learn to reasonably release your mental pressure and eliminate negative emotions in time. Arrange study and after-school time in an orderly manner, and exercise properly to make yourself fall asleep in a more relaxed state. Reasonably control your diet rules, avoid eating too much before going to bed and causing physical discomfort, so as to achieve a dynamic balance between life and learning.

3.2. Communicate with roommates in time and use sleeping aids

Students should coordinate their work and rest time to ensure a quiet sleeping environment and reasonably arrange for cleaning. When necessary, use shading goggles, soundproof earplugs, aromatherapy, soothing music and comfortable bed quilts and other sleeping aids to help you sleep faster.

3.3. Strengthen the environmental management of school dormitory

Dormitory is an important place for college students to rest and a "second family" to feel a harmonious and happy atmosphere. The quality of sleep directly affects the physical health and learning status of contemporary college students. Schools should strengthen dormitory time and sanitation management, clarify students' work and rest time and turn off the lights in time to avoid students playing games or watching TV all night, and regularly check dormitory sanitation to ensure a comfortable environment. And regularly publicize the importance of sleep quality to body health.

3.4. Strengthen publicity and education on sleep health

Only when students have a clear understanding of the quality of sleep can they fundamentally realize the importance of sleep quality to their own study and life. Schools should strengthen the publicity and education on sleep health for college students, so as to ensure that students can really improve their sleep status in action, and then improve their sleep quality. Schools should regularly carry out relevant activities, lectures or elective classes to arouse students' attention to healthy lifestyles, and let students have a deep understanding of the impact of sleep quality on life and health, so as to break the bad habit of staying up late and gradually develop the good habit of regular life [5].

3.5. Strengthen the education of college students' mental health

The sleep quality of contemporary college students is poor. In addition to the excessive use of electronic products and the influence of dormitory environment, there are also problems that it is difficult to fall asleep due to two-way emotional disorder, depression and other mental stress. Therefore, schools should strengthen the education of college students' mental health, provide convenient psychological counseling for students and regularly hold mental health activities to encourage students to participate actively. Give full play to the role of the school psychological association, cultivate feelings among students, relieve students' pressure and improve their sleep quality.

4. Conclusion

To sum up, combining all the survey results, we can find that: on the one hand, mental stress and living habits are the main factors that affect the sleep quality of college students, including their own psychological pressure and pressure from the outside world. For example, college students face academic pressure, interpersonal pressure, emotional pressure and worries about the future. As relevant studies at home and abroad have shown, students with anxiety, depression, anxiety and other psychological conditions have significantly worse sleep quality. On the other hand, in the past decade, the popularity of electronic products has also led to a decline in the sleep quality of college students. In this survey, it was found that most students had become a habit to use electronic products before going to bed at night, and they would rely on them. The deepest feeling was that they would delay falling asleep. The essence of international competition is talent competition. Good physical quality is the cornerstone of competition. Through the intervention experiment, this study put forward measures and suggestions that can promote the quality of sleep, provide behavioral guidance for college students' healthy physique and good living habits, and help college students achieve high-quality sleep.

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References

- [1] Zhu Qianyun. Investigation on sleep quality of college students [J]. Journal of Changchun Institute of Education, 2014 (19).
- [2] Huang Xiaojing, Xu Luhua, Li Ting, etc. Investigation and study on the correlation between the behavior of staying up late and the hazard cognition of medical college students [J]. Chinese Ethnic and Folk Medicine, 2015, 24 (20).
- [3] Wang Jishen, Liu Wenli, Li Qiang. Mobile phone addiction and sleep quality of college students: the role of anxiety and rumination [J]. Chinese Journal of Clinical Psychology, 2021 (29).
- [4] He Yun. Investigation and countermeasure analysis on the current situation of sleep quality of freshmen [J]. Heilongjiang Science, 2021, 12 (19).
- [5] Wang Pengwei, Li Wenchao, Zhu Yongkang. Investigation on sleep quality of college students in southwest Sichuan [J]. Drama House, 2016 (12).