

media continues for a long period (chronic otitis media), the child may have problems speaking and developing language skills due to the impaired hearing [3].

Parents' awareness of predisposing factors, peculiarities of the anatomy of the nasopharynx of children, allow to build a trusting relationship with the attending physician, allows parents to reduce anxiety and treat the child according to the doctor's prescription. Paying attention to the peculiarities of not only the dosage of drugs, but also the peculiarities of their reception noticeably (up to 90%) reduce the risk of otitis media, accelerate the recovery of the child and especially reduce the frequency of recurrent ear infections.

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НЕДОСТАТОК СНА КАК ПРИЧИНА ЭМОЦИОНАЛЬНОГО ВЫГОРАНИЯ У СТУДЕНТОВ-МЕДИКОВ

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Аннотация

Введение. Недостаток сна является одной из самых распространенных причин эмоционального выгорания у студентов-медиков. На первый взгляд, можно подумать, что потеря нескольких часов сна не оказывает серьезного влияния на организм, особенно, когда нужно запомнить достаточно большой объем информации. Однако длительный и качественный сон – это не просто способ восстановления сил, но и главный компонент психического и физического здоровья человека. **Цель исследования** – определить влияние продолжительности и качества сна на психоэмоциональное состояние студентов УГМУ Минздрава России. **Материал и методы.** В исследовании был использован метод анкетирования. Всего опрошено 62 студента 1 курса УГМУ Минздрава России в возрасте от 18 до 21 года. **Результаты.** В результате исследования были выявлены наиболее распространенные причины недостатка сна у будущих врачей, такие, как: высокая загруженность, нерациональное планирование собственного времени. А также связанные с недостатком сна нарушения в состоянии эмоционального и физического здоровья испытуемых: постоянная усталость, апатия, тревожность, социофобия, снижение концентрации внимания и памяти. **Выводы.** Высокое психоэмоциональное напряжение студентов УГМУ Минздрава России, в связи с большой загруженностью часто становится причиной эмоционального выгорания. Недостаток сна непосредственно оказывает негативное влияние на психоэмоциональное состояние человека. Для предотвращения эмоционального выгорания у студентов-медиков важно особенно тщательно следить за качеством их сна. Регулярное соблюдение режима «сон-бодрствование» и умение планировать время помогут студентам выделить необходимое количество времени для сна.

Ключевые слова: сон, недостаток сна, эмоциональное выгорание, стресс, физиологическое здоровье, психоэмоциональное здоровье.

SLEEP INSUFFICIENCY AS A CAUSE OF EMOTIONAL BURNOUT AMONG MEDICAL STUDENTS

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Abstract

Introduction. Sleep insufficiency is one of the most common causes of emotional burnout among medical students. At first sight, one might think that the loss of several hours of sleep does not have a serious effect on the body, especially when it is necessary to remember a fairly large amount of information. However, continuous and proper sleep is not just a way to restore energy, but also a major component of a person's mental and physical health. **The aim of the study** is to determine the effect of sleep duration and quality on the psycho-emotional state of students of the Ural State Medical University. **Material and methods.** The survey method was used in the study. A total of 62 first-year students of the Ural State Medical University Russia aged 18 to 21 years were interviewed. **Results.** As a result of the study, the most common causes of sleep insufficiency among future physicians were identified, such as high workload, irrational time management. As well as sleep insufficiency related emotional and physical health issues: constant fatigue, apathy, anxiety, social phobia, decrease in concentration and memory. **Conclusion.** High psycho-emotional stress of Ural State Medical University students often causes emotional burnout due to heavy workload. Sleep insufficiency directly has a negative effect on a person's psycho-emotional state. That is why it is important to especially carefully monitor the quality of their sleep in order to prevent emotional burnout among medical students. Regular adherence to the sleep and wake cycle and the ability to manage time will help students allocate the necessary amount of time for sleep.

Keywords: sleep, sleep insufficiency, emotional burnout, stress, physiological health, psycho-emotional health.

INTRODUCTION

In the modern world, the problem of studying the phenomenon of emotional "burnout" has become especially acute. According to the decision of the World Health Organization (WHO) dated May 28, 2019, burnout syndrome is a disease. The term "emotional burnout" was first introduced into psychology by American psychiatrist Herbert Freudenberger in 1974. While conducting an experiment, he noticed that over time emotional burnout developed and increased among doctors, or more precisely, specialists who worked directly with people, which was most often expressed by a decrease in emotional reactions to events [1]. People become indifferent to the world around them, unemotional. Currently, more and more experts are noting the link between lack of sleep and an increase in cases of emotional burnout.

Emotional burnout syndrome is a physical, emotional or motivational exhaustion characterized by impaired productivity at work, fatigue, insomnia, and a high risk of somatic diseases. Emotional burnout is the main problem of future physicians around the world. Such students are often faced with a huge amount of information which takes a lot of time to learn. However, many of them consider it necessary to get a job in order to gain practical knowledge and skills in order to master the profession more fully. Constant tension during practical exercises, night shifts is accompanied by an increase in stress, the appearance of insomnia. Constant tension during practical training is accompanied by an increase in stress and the development of insomnia. And, as a result, there is additionally sleep insufficiency development. Sleep insufficiency can become one of the main causes of emotional burnout.

Sleep insufficiency primarily affects a person's physical health. After a sleepless night, people note: increased fatigue, a decrease in concentration and memory, increased appetite, anxiety, and a sharp decrease in overall performance [1]. Social phobia is developing among some individuals. Eventually, the human body becomes more and more exhausted, and diseases such as atherosclerosis, diabetes, dementia, and heart failure may develop. Few of us realize that our immunity depends on the sleep quality and duration. With constant overloads the body simply does not have time to recover. Immunity decreases, the body becomes more susceptible to various diseases.

Optimal sleep is necessary to maintain normal human vital functions. Many biochemical processes take place during sleep. One of these processes is the production of melatonin [2]. Melatonin is a hormone that regulates the sleep and wake cycle. Its production takes place at night. An increase in melatonin in the body helps us fall asleep more easily and fully recover. However,

sleep deficiency greatly affects the production of melatonin. The hormone level in the body decreases significantly, anxiety increases and insomnia develops [3].

The emergence of devices in our lives has led to a natural decrease in melatonin in our bodies [2]. We spend more and more time using smartphones or laptops, not realizing that the screen radiation from devices (blue light) suppresses the production of this hormone. That is why many scientists and doctors advise against prolonged use of devices in the evening and at night, or switch mobile devices and laptops to "night mode". This mode is able to suppress blue light and thus allows melatonin to be produced better. (fig.1)

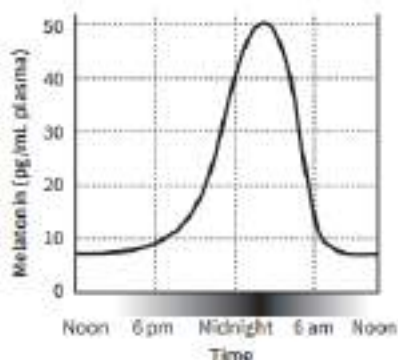


Fig.1 The Cycle of Melatonin

Also, many people notice a significant increase in appetite during fatigue. Sleep insufficiency increases the concentration of ghrelin and cortisol, which are responsible for hunger, and suppresses insulin and leptin, which signal satiety [2]. That is why many students note an increased appetite and uncontrolled food intake before examinations. As a rule, most people who do not get enough sleep are overweight. Such people have not been able to lose weight for years, even on fairly strict diets and when exercising since they still have a sleep problem.

Insomnia, overweight, the development of complexes, irritation, social phobia, increasing stress eventually transform into such a state as emotional burnout. A huge number of people has already faced this problem by the age of 18-21. Emotional burnout is a very dangerous condition [4]. Few people realize what is happening to a person at this time. Emotional burnout is, first of all, a painful state of the human psyche. Such a person is not able to experience any positive emotions, they do not show interest in the world around them and society. Their world turns black [5]. In a state of emotional burnout, people often commit rash acts, for example, suicide, and are even capable of killing, including loved ones.

The aim of the study is to determine the effect of sleep duration and quality on the psycho-emotional state of students of the Ural State Medical University.

MATERIAL AND METHODS

The study used a combination of survey and questionnaire methods based on the structure of the Epworth questionnaire. The information received was carefully analyzed and structured using Microsoft Excel 2016 software to build statistical graphs and use mathematical calculations to convert data into a percentage ratio, taking into account measurement error.

The study involved 62 first-year students of the Ural State Medical University aged 18 to 21 years.

As a rule, young people significantly change their usual daily routine with the onset of a new period in their lives. First of all, the sleep and wake cycle changes. For an objective assessment of the sleep quality of future doctors, based on the Epworth questionnaire, a questionnaire was developed and presented to students, including the following questions:

1. What time do you usually go to bed?
2. What time do you wake up?
3. What is your usual sleep duration per day?
4. Do you feel constantly tired and unwell?
5. Do you ever experience insomnia?

6. Do you occasionally fall asleep during classes?
7. Does sleep insufficiency affect your academic performance?
8. Does sleep insufficiency affect your health?
9. Do you usually have an anxious or sound sleep?
10. How often do you fail to fall asleep before the examination?
11. Are you often in a bad mood?
12. Do you know anything about emotional burnout?
13. Do you often not want to be in society because of lack of energy?
14. Is it more difficult for you to solve tasks if you have not had enough sleep?
15. Do you work or attend any sections?
16. How do you think your sleep quality can be improved?

RESULTS

The average age of the respondent is 19-20 years old, a total of 43 girls and 19 boys were interviewed. Based on the results obtained, it turned out that $59.7\% \pm 0,5\%$ of students usually go to bed between 00:00-02:00 at night. At the same time, $74.2\% \pm 0,3\%$ wake up between 06:00-08:00. The average sleep duration of $77.4\% \pm 0,5\%$ of students is 5-8 hours, but $17.7\% \pm 0,5\%$ sleep less than 5 hours a day, which significantly increases the risk of developing serious diseases in this group of people. $80.6\% \pm 0,5\%$ of people already feel health problems due to lack of sleep: $19.4\% \pm 0,5\%$ complain of insomnia, $16.1\% \pm 0,6\%$ of anxious sleep. Also, $23.1\% \pm 0,6\%$ of respondents noted that they combine study with work and attending classes.

In addition, the topic of student academic performance and their social life was touched upon during the survey: $38.7\% \pm 0,5\%$ of the students fall asleep during classes, $67.7\% \pm 0,5\%$ note a decrease in academic performance, $67.7\% \pm 0,5\%$ of respondents are unable to sleep the night before the exam, $64.5\% \pm 0,8\%$ are often in a depressed mood. At the same time, $71\% \pm 0,1\%$ note that it is harder for them to be in society due to lack of energy. The students were also asked if they knew anything about emotional burnout: $62.9\% \pm 0,2\%$ are familiar with this topic, $33.9\% \pm 0,2\%$ have experienced this condition (fig.2).

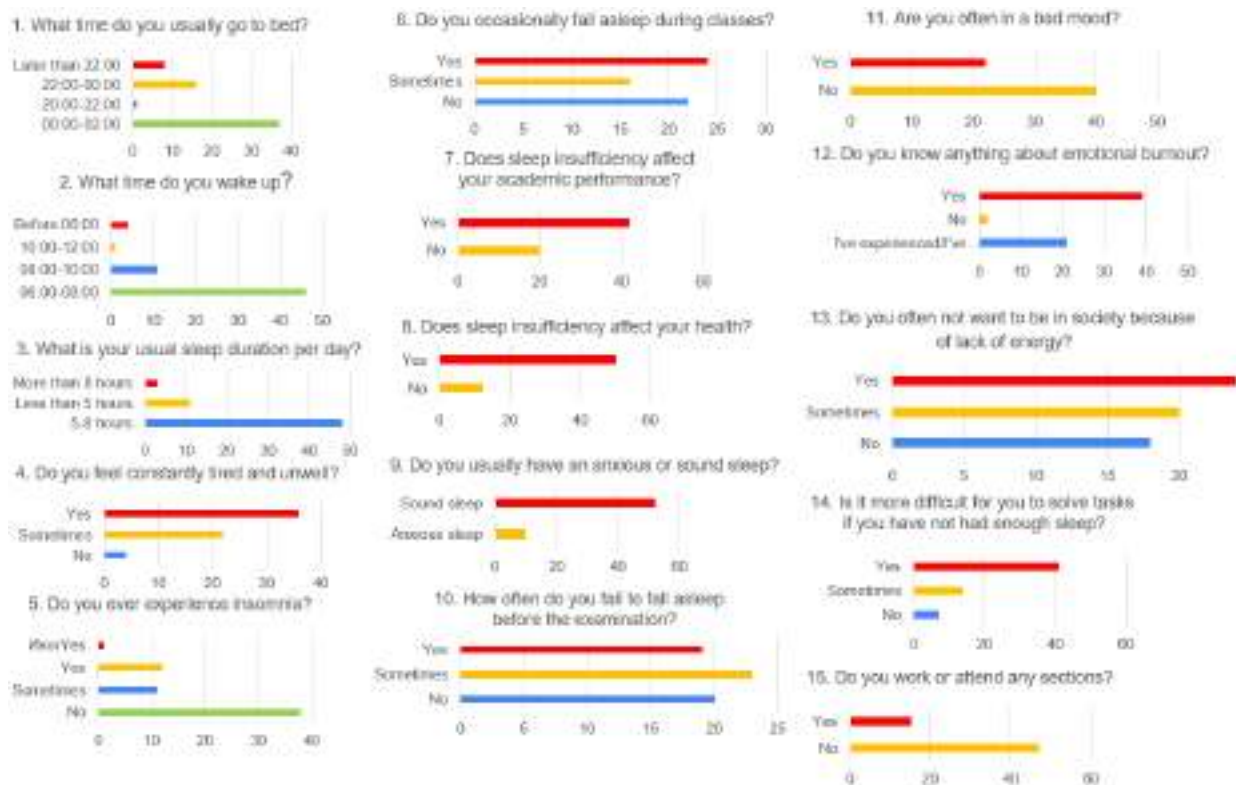


Fig. 2 Comparative assessment of student response rates

DISCUSSION

Matthew Walker in his book *Why We Sleep: The new science of sleep and dreams* noted «Within the brain, sleep enriches a diversity of functions, including our ability to learn, memorize, and make logical decisions and choices. Benevolently servicing our psychological health, sleep recalibrates our emotional brain circuits, allowing us to navigate next-day social and psychological challenges with cool-headed composure» [2].

Based on this judgment, a study was conducted on first-year students of the UGMU in order to identify their sleep problems. According to the results of the survey, it was found that $17.7\% \pm 0,5\%$ of students sleep less than 5 hours a day. This group of people already has a high probability of irreversible consequences for their health. These include chronic fatigue syndrome. Poor sleep quality usually leads to insufficient release of growth hormone and leptin in the body. These two hormones are produced during night sleep. A decrease in the production of these hormones affects the growth and development of the body, increases appetite and slows down the metabolic rate. And lack of sleep leads to a gradual decrease in the production of the hormone melatonin. 80.6% of the respondents already have health problems.

The survey touched upon the topic of students' academic performance and their social life: $38.7\% \pm 0,5\%$ of students admitted that they fall asleep during classes, as well as $67.7\% \pm 0,5\%$ note a decrease in academic performance, $64.5\% \pm 0,8\%$ are often in a depressed mood. At the same time, $71\% \pm 0,1\%$ note that it is harder for them to be in society due to lack of strength. Indeed, the fear of society was observed by the American psychiatrist Herbert Freudenberger. While conducting the experiment, he noticed that doctors, or more precisely, specialists who work directly with people, develop and increase emotional exhaustion over time, which is most often expressed by a decrease in emotional reactions to events, as well as a persistent reluctance to be in society. Such people become withdrawn over time [1].

The main aim of our study was the problem of lack of sleep as a cause of emotional burnout among medical students. Students were asked if they knew anything about burnout: $62.9\% \pm 0,2\%$ indicated that they were familiar with the topic, in addition, $33.9\% \pm 0,2\%$ had experienced this condition. Therefore, it can be assumed that this problem is relevant in the modern world. However, it is worth noting that $23.1\% \pm 0,6\%$ of respondents stated that they combine study with work or attend various sections.

At the end of the survey, the students were asked the question: "How can their sleep quality be improved?". Most students noted that many do not know how to manage their time and do not have time to complete all the tasks in a day. Someone admitted that he couldn't sleep because he spent time on social networks before going to bed. Others noted a violation of the regime in connection with night shifts at work. Based on the students' responses, it can be assumed that they know how to deal with the problem of sleep deprivation.

The presence of a direct link between lack of sleep and burnout syndrome is confirmed by statistical data.

CONCLUSION

The conducted study of the problem of the effect of sleep insufficiency on emotional burnout of medical students allowed us to draw the following conclusions:

1. Students' education in medical institutions is closely related to the presence of daily stress. Stress is especially pronounced during the exam period, especially for students who combine study with work or mastering additional education. The importance of rest at this time increases significantly. Only with the rational use of their time will a person be able to fully recover and continue effective training.

2. Among the students of the Ural State Medical University, a large number of people have already faced emotional burnout in one way or another. Symptoms such as increased fatigue, irritability, a decrease in concentration and memory, increased appetite, anxiety, a sharp decrease in overall performance, and social phobia were most often noted. All these symptoms significantly affect the quality of students' life and the learning process.

3. Medical students need to learn how to plan their daily routine, devote more time to rest and properly monitor the state of health, both physical and psycho-emotional.

Medical students are the future of our country and the future of a healthy nation. The whole health care system depends on the physical and psycho-emotional state of these people. A person whose energy level is at zero will not be able to perform their professional duties efficiently.

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ФИЛОСОФИЯ И МЕДИЦИНСКИЕ АСПЕКТЫ ЛЕЧЕНИЯ НАСЛЕДСТВЕННЫХ ЗАБОЛЕВАНИЙ НА ПРИМЕРЕ МУКОВИСЦИДОЗА

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Аннотация

Введение. Системный подход, характерный в целом для современной науки, особенно важен в медицине, так как она работает с чрезвычайно сложной живой системой – человеком. Особое значение в медицине принадлежит пациенту – ребенку. Без адекватного лечения продолжительность жизни пациентов с наследственными заболеваниями, в том числе с муковисцидозом, резко сокращается. Постоянное улучшение диагностики, лечения и оказания помощи привело к значительному увеличению ожидаемой продолжительности жизни пациентов. Несмотря на достижения в медицине, муковисцидоз остается прогрессирующим заболеванием, характеризующимся как видимыми, так и скрытыми клиническими проявлениями. **Цель исследования** – рассмотреть муковисцидоз, как биопсихосоциальное явление в контексте философии медицины. **Материал и методы.** Методология работы включает в себя диалектический метод философского анализа современных подходов к лечению наследственных заболеваний на примере муковисцидоза. **Результаты.** Психосоциальная адаптация к болезни определяется субъективным восприятием пациентом своего заболевания. Ощущение личного контроля над ситуацией представляется фактором, который способствует хорошей адаптации. Тремя понятиями, связанными с ощущением контроля, являются locus контроля, усвоенная беспомощность и самоэффективность. Благодаря внедрению в практику таргетной терапии муковисцидоза CFTR-модуляторами у детей с муковисцидозом, наконец, появилась возможность контролировать свое заболевание, остановить прогрессирование клинических проявлений. Необходима дальнейшая работа, направленная на поиск путей коррекции эмоционально-волевой сферы больных муковисцидозом как средства повышения качества их жизни. **Выводы.** Современные методы лечения обладают огромным потенциалом для устранения дефектов, лежащих в основе специфических мутаций при муковисцидозе, могут изменять течение заболевания и влиять на качество жизни пациентов. Медицинскому сообществу еще предстоит продемонстрировать преимущество таргетной терапии, создать устойчивую модель разработки и доставки лекарств, что позволит в дальнейшем изменить восприятие болезни и улучшить качество жизни пациентов.

Ключевые слова: муковисцидоз, философия медицины, CFTR-модуляторы

PHILOSOPHY AND MEDICAL ASPECTS OF TREATMENT OF HEREDITARY DISEASES USING THE EXAMPLE OF CYSTIC FIDOSIS