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# THE IMPORTANCE OF SLEEP CULTURE AMONG STUDENTS OF TASHKENT MEDICAL ACADEMY

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**Abstract**
This article investigates the impact of the post-sleep state on a person's mood and daily activities. The theoretical foundation of the research is based on the analysis of existing scientific literature on sleep physiology and psychology. Additionally, the results of a survey conducted with 100 respondents were analyzed. According to the survey results, 53.5% of participants reported feeling energetic after sleep, while in 36.6% of cases, physical fatigue persisted. Negative symptoms such as mood decline and headaches were observed in 51.4% of participants. These findings confirm the importance of healthy sleep for human health and work productivity. Based on the literature review, the article highlights the influence of sleep quality, sleep hygiene, and lifestyle on psycho-emotional state and offers practical recommendations.

**Keywords:** REM, non-REM, hypothalamus, reticular formation, thalamus, melatonin.

## Introduction

Modern lifestyles, technological advancements, stress, smart gadgets becoming an integral part of our lives, and poor sleep hygiene are leading to disruptions in both the quality and duration of sleep. Sleep deprivation or low-quality sleep can have serious effects on human health: increasing the risk of chronic fatigue, psychological disorders, cardiovascular diseases, obesity, and diabetes. Therefore, in-depth study of sleep and the body's recovery mechanisms is considered highly relevant.

## Objective of the Study

The main objective of this study is to assess the level of adherence to healthy sleep principles and to evaluate awareness regarding sleep among individuals. To achieve this, a specially designed survey was conducted among randomly selected students studying at the Tashkent Medical Academy. The questions were aimed at analyzing participants' adherence to healthy sleep habits, their attitudes toward sleep, and their daily routines. The results of the study help to deepen the understanding of the importance of sleep culture as a key component of a healthy lifestyle and serve as a basis for developing preventive measures in this field.

## Materials and Methods of the Study

In preparing this scientific work, open electronic sources, scientific articles, and internet resources were used. The empirical method—data collection through a survey—was chosen as the main

approach for the study. The survey was administered to 100 randomly selected students of various ages and genders studying at the Tashkent Medical Academy. The questionnaire was in test format and included questions related to sleep, how participants felt after sleeping, and how they felt after sleeping too little or too much. Through these questions, participants' adherence to healthy sleep practices, their knowledge of sleep hygiene, and their practical habits were assessed. The collected data were analyzed and summarized statistically.

Sleep is a physiological process characterized by a temporary reduction in the activity of the central nervous system, sensory and motor functions—such as muscle relaxation, decreased sensitivity to external stimuli, and the restoration and rest of the body. This process is primarily regulated by the central nervous system and is closely linked to circadian biological rhythms. Sleep is essential for the human body and plays a crucial role in the proper functioning of the nervous, cardiovascular, immune, and endocrine systems. During sleep, the brain undergoes a "cleansing" process, which supports memory consolidation, learning, and emotional stability. Sleep is vital for health, as it promotes brain recovery, strengthens memory, boosts the immune system, balances hormones, and aids in the regeneration of body cells. Sleep deprivation or disturbances can negatively impact both physical and mental health.

**Neurophysiology of Sleep.** Sleep is divided into two main phases: REM (Rapid Eye Movement) and non-REM (NREM) sleep. Non-REM sleep consists of three stages (N1, N2, N3). N1 is the lightest stage of sleep, N2 is a transitional stage, and N3 represents deep (delta) sleep. During these stages, body temperature, heart rate, and breathing slow down.REM sleep is the stage in which dreams are most vivid, and brain activity resembles wakefulness. Eye movements are rapid, and heart rate and breathing become irregular. Each sleep cycle lasts approximately 90 minutes and is repeated several times throughout the night.

**Central Regulation**: Hypothalamus, Thalamus, Reticular Formation.The sleep state is regulated by several structures of the central nervous system:

Hypothalamus – the main center that regulates the sleep-wake cycle. The suprachiasmatic nuclei located within the hypothalamus control circadian rhythms.

Thalamus – processes sensory signals and blocks their transmission to the brain during deep sleep.

Reticular formation – a network of neurons that maintains wakefulness. Damage to this area can lead to a coma.

**Hormones Regulating Sleep:**

Melatonin – produced by the pineal gland. Its levels increase with darkness and it is considered the main hormone that promotes sleep.

Cortisol – known as the stress hormone, its levels rise closer to waking time and prepare the body to start the day. It is regulated according to circadian rhythms.

**Mechanisms of Sleep and Body Restoration**

Brain Cell Cleansing (Glymphatic System): The glymphatic system is responsible for the flow of fluids within the brain and the removal of toxins. During sleep, the glymphatic system becomes highly active,

and cerebrospinal fluid removes accumulated waste products and harmful proteins through the brain's vascular pathways.The brain's activity slows during sleep, allowing the glymphatic system to function fully. Astrocytes (supportive cells in the brain) relax completely during sleep, facilitating fluid flow. Proper sleep structure—particularly deep sleep—enhances the efficiency of this system, potentially preventing Alzheimer's disease and other neurodegenerative disorders.

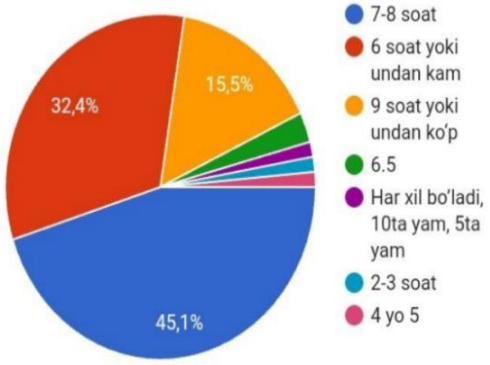
**Restoration of Energy Reserves:**

During sleep, the body restores its energy reserves, especially in the brain and muscles. The brain replenishes its energy stores and optimizes intercellular metabolic processes.

Adenosine – a chemical that promotes sleep by reducing brain activity and enabling post-sleep recovery.

Glycogen – stored in muscle and brain cells as an energy reserve. Glycogen levels are restored during sleep, supporting the body's recovery process.Through sleep, these essential processes occur within our bodies.However, in today's society, adherence to proper sleep hygiene has significantly declined.To investigate this issue, we conducted a survey.Below, we will review and analyze some of the key findings from this questionnaire.

**"How long does your sleep usually last?" responses.**




**Let's take a look at this question and its**

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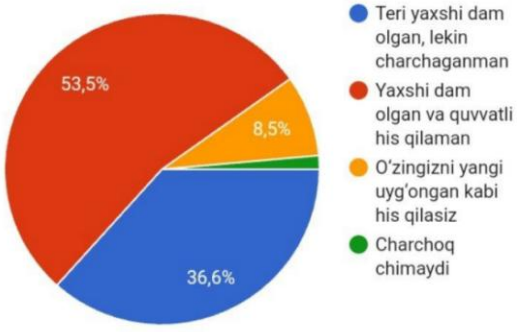
|---|---|
| Those who reported sleeping 4 hours or less | Extremely dangerous Increases susceptibility to various diseases |
| Those who sleep 4 to 6 hours | Considered borderline sleep duration |
| Those who sleep 6 to 8 hours | Considered normal sleep duration |
| Those who sleep more than 8 hours | May lead to obesity |

This sleep duration also depends on the time of falling asleep. Sleeping at 10:00 PM or earlier is beneficial for health. Going to bed at 11:00 PM may lead to a decline in memory. For those who fall asleep after midnight, there is an increased risk of obesity and disruptions in hormonal functions.

**"How do you feel after sleep?"**

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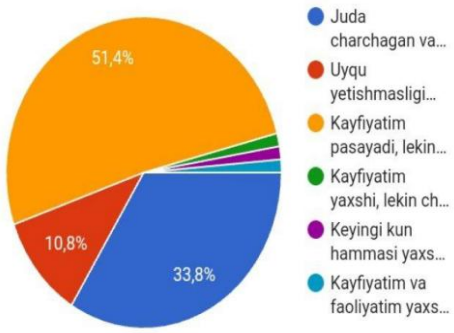
| Respondents in a positive state | Energized, feel refreshed, not tired |
| Those in a relatively negative state | Rested, but still physically tired |
| Those with minimal fatigue | No fatigue at all |

Fatigue was observed in 37% of the respondents mentioned above. This indicates the presence of issues related to sleep quality.

**"When you sleep less, how does it affect the next day?"**

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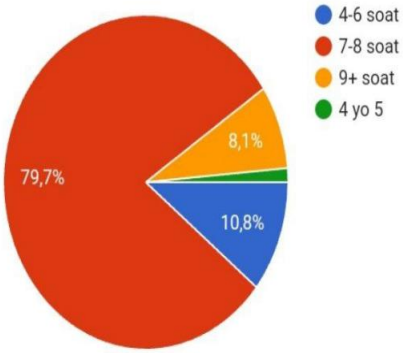
| Negative effects | Mood decline, fatigue, and sleep deprivation. The quality and quantity of sleep negatively affect the following day. |
| Positive responses | Mood and performance are good. |
| Most common response | My mood drops, but it doesn't affect my work — most people don't feel fully refreshed, yet they still fulfill their responsibilities. |

**"What do you consider the ideal amount of sleep?"**

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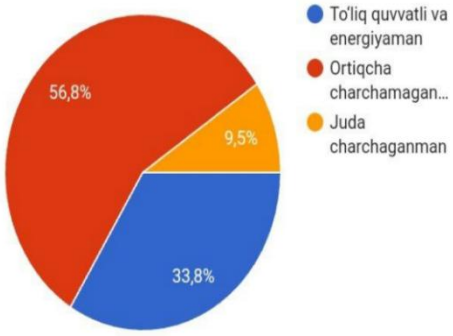
| 7–8 hours – 79.7% (the most common answer)<br><br>4–6 hours – 10.8%<br><br>9+ hours – 8.1%<br><br>4 or 5 hours (unclear, but a very small portion) – approximately 1.4% | For the majority of people (nearly 80%), the ideal sleep duration is considered to be 7–8 hours, which also aligns with medical recommendations. Only a small group (around 10.8%) prefer shorter sleep (4–6 hours), and an even smaller group prefer longer sleep (9+ hours). |

**"How do you feel about your need for sleep during the day?"**

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| Very tired – 56.8% (most common response)<br><br>Fully energetic and alert – 33.8%<br><br>Moderately tired – 9.5% | Half of the survey participants (56.8%) reported feeling tired during the day. Only one-third (33.8%) said they felt full of energy. This may indicate that sleep quality or daily stress factors are not being adequately managed. |

## Conclusion

In general, while most people are theoretically aware of the importance of getting sufficient sleep (7–8 hours), more than half of them (56.8%) report feeling tired. This suggests the presence of issues such as poor sleep quality, stress, heavy workloads, or other health-related problems.In modern lifestyles, the use of screen-based devices (such as smartphones, tablets, and computers) negatively affects sleep quality. The blue light emitted by these devices suppresses the production of melatonin, disrupting the circadian rhythm and making it harder to fall asleep. Additionally, mental stimulation before bedtime—caused by social media, notifications, and intrusive thoughts—lowers sleep quality. Research shows that evening screen time reduces the duration and quality of sleep, especially among children and adolescents.Therefore, maintaining proper sleep hygiene is crucial. It is recommended to stop using electronic devices at least an hour before bedtime and instead engage in calming activities such as reading, listening to soft music, or light meditation to improve sleep quality.Sleep is an essential component of human health and quality of life. This article has highlighted the neurophysiological foundations of sleep, its role in recovery processes, the negative consequences of sleep deprivation, and practical and hygienic approaches to improving sleep. Sleep is a complex biological process closely linked with brain function, hormonal balance, immune health, and psychological well-being. Sleep deprivation can lead to serious disturbances in the cardiovascular, endocrine, and nervous systems.Adhering to proper sleep hygiene, maintaining a healthy lifestyle, and seeking professional help when needed are key factors in improving sleep quality. Future scientific research in this field will play a vital role in deepening our understanding of sleep disorders and developing effective treatment methods. Promoting a culture of healthy sleep will contribute significantly to improving public health.

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