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THE INFLUENCE OF NATURAL CYCLES ON HUMAN COGNITIVE ACTIVITY AND PSYCHOPHYSIOLOGICAL STATE

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Summary. *This scientific paper investigates the potential impact of natural cycles, with a particular emphasis on lunar phases, on human cognitive activity, productivity levels, and psychophysiological state. The study explores theoretical mechanisms behind these effects, drawing on insights from neurophysiology, endocrinology, and psychophysiology. The research highlights how gravitational and electromagnetic fluctuations during different lunar phases may influence hormonal balance, neurotransmitter activity, and overall brain function.*

The practical part of the study involved a comprehensive questionnaire survey conducted among 68 participants aged 18 to 50 years, who were free from significant somatic, neurological, or psychiatric conditions. Participants were observed over a complete lunar cycle (28–30 days) and reported changes in cognitive performance, emotional well-being, and sleep quality. Analysis of the collected data revealed notable patterns: the full moon phase was often linked to heightened nervous excitability, emotional instability, and disrupted sleep, while the new moon phase frequently correlated with reduced energy levels, fatigue, and cognitive slowdown. However, the findings also emphasized individual variability, with some respondents reporting no significant effects.

The results underscore the complexity of biological responses to lunar cycles and highlight the need for further interdisciplinary research to identify precise physiological mechanisms. The study's findings could have practical applications in developing strategies for optimizing productivity, managing stress, and improving sleep quality by aligning daily routines with natural biorhythms.

Keywords. *Lunar cycle, cognitive performance, psychophysiological state, neurophysiology, endocrinology, circadian rhythms, melatonin regulation, serotonin fluctuations, dopamine dynamics, gravitational effects, electromagnetic variations, sleep patterns, emotional stability, stress adaptation, biological rhythms.*

Relevance. Natural cycles play a key role in regulating human biological processes, particularly influencing cognitive activity, productivity, and

psychophysiological state. Among these cycles, the lunar cycle holds a special place, traditionally considered one of the potential factors shaping physiological and psycho-emotional responses of the body. Despite the absence of clearly established mechanisms for this influence, numerous observations indicate a certain pattern in changes in well-being, energy levels, attention concentration, and sleep quality depending on the phases of the Moon. This necessitates a scientific analysis of potential neurobiological, hormonal, and psychophysiological mechanisms that may underlie these phenomena.

Turányi, C. Z., Rónai, K. Z., and Zoller, R. state that one of the key aspects of the potential influence of the lunar cycle is its relationship with circadian rhythms [5]. It is known that human circadian rhythms are regulated by the suprachiasmatic nuclei of the hypothalamus, which coordinate the biological clock under the influence of light stimuli. At the same time, researchers point to the possible modulation of these rhythms due to changes in the intensity of moonlight, which may affect the secretion of melatonin — the hormone responsible for sleep regulation. It has been proven that during a full moon, some people experience a reduction in sleep duration and depth, which may potentially affect cognitive functions and productivity levels throughout the day. In addition to circadian rhythms, the influence of lunar phases on hormonal balance is also considered. Raison, Klein, and Steckler note that "disruptions in neurotransmitter levels, such as cortisol, serotonin, and dopamine, can have a significant impact on emotional state, manifesting as anxiety and depression" [8]. Changes in cortisol, serotonin, and dopamine levels are crucial because these hormones are key regulators of mood, motivation, and cognitive activity. An imbalance in these neurotransmitters can cause fluctuations in the psycho-emotional state, observed both in healthy individuals and in patients with mental disorders. According to Bondarenko, Y., & Mozgova, T. (2025), some studies also suggest a possible link between lunar phases and the exacerbation of affective disorders, increased anxiety levels, and a rise in psychiatric hospitalizations, although the mechanisms behind these changes remain insufficiently studied [22].

Another potential factor influencing the lunar cycle is geophysical changes, particularly microgravitational variations and fluctuations in the Earth's magnetic field, which may affect physiological processes in the body. In some of his experimental works, Zimecki M. suggests that biological systems, particularly the nervous and cardiovascular systems, may be sensitive to such changes, which could theoretically explain periodic fluctuations in energy levels and productivity [10].

The relevance of this research is driven not only by scientific curiosity about the phenomenon but also by its practical significance. If the influence of lunar phases on cognitive activity and the psychophysiological state of a person is confirmed, it could have important implications for optimizing work schedules, improving sleep regulation, and developing recommendations for enhancing productivity.

Studying this issue requires an interdisciplinary approach that combines neurophysiological, endocrinological, psychophysiological, and chronobiological research methods.

Thus, analyzing the influence of the lunar cycle on cognitive processes and the psycho-emotional state of a person is important from both a fundamental and applied perspective. Research in this field may contribute to a better understanding

of human biological rhythms, their interaction with the external environment, and the potential impact of natural cycles on health and productivity.

Although the Moon does indeed influence the physical environment around the Earth, its impact on the human body through gravitational and electromagnetic changes remains a topic of scientific debate. Some effects may be explained by existing hypotheses, but additional research is needed to confirm them.

Research Objective. To investigate the impact of natural cycles, particularly lunar phases, on cognitive activity, productivity levels, and the psychophysiological state of an individual, as well as to substantiate the theoretically possible mechanisms of this influence from the perspectives of neurophysiology, endocrinology, and psychophysiology. Specifically, the study aims to explore the relationship between lunar phases and changes in cognitive functions, sleep quality, and the psycho-emotional state of a person, while also assessing the potential impact of these changes on productivity and daily well-being. The goal is to establish the dependence of the aforementioned symptoms on the phases of the lunar cycle.

Materials and Methods. The study consisted of several stages, which involved the collection, processing, and analysis of data using both quantitative and qualitative analysis methods.

In the first stage, a detailed questionnaire was developed to assess the impact of the lunar cycle on human well-being. The survey was conducted among voluntary participants aged 18 to 50 years who had no somatic, neurological, or psychiatric disorders that could independently affect their well-being. The main sections of the questionnaire included information on socio-demographic characteristics, sleep patterns, general level of cognitive activity, work capacity, psycho-emotional state, and physical well-being. Participants were able to indicate whether they noticed changes in their condition depending on the phases of the Moon, as well as specify which symptoms they experienced during different periods of the lunar cycle. The questionnaires were completed online via the Google Forms platform, ensuring accessibility for a wide range of respondents. An important condition was that participants were required to observe their state throughout a full lunar cycle (28–30 days), which allowed for the collection of more objective data.

In the second stage, a thorough analysis of scientific sources was conducted to understand the theoretical mechanisms of the Moon's phases' influence on physiological and cognitive processes in humans. The literature search was carried out in the PubMed, ResearchGate, and Google Scholar databases, with a focus on recent studies examining the role of the lunar cycle in regulating circadian rhythms, hormonal balance, and psychophysiological changes. Special attention was given to studies analyzing the relationship between lunar phases and hormone secretion, particularly melatonin, cortisol, serotonin, and dopamine, as well as research investigating neurophysiological changes during this period. Additionally, possible geophysical factors such as changes in gravitational and magnetic fields that may affect body functioning were considered.

In the third stage, the collected questionnaire data were analyzed. The primary approach involved the use of descriptive statistics methods, which allowed for the assessment of the frequency and intensity of changes in cognitive activity, work capacity, and overall psychophysiological state in respondents depending on the

lunar cycle. The analysis included calculating mean values, standard deviations, and conducting a correlation analysis, which made it possible to identify potential links between the Moon's phases and changes in the participants' conditions.

In the fourth stage, the obtained results were compared with contemporary scientific data. This comparison helped identify patterns that could indicate a genuine dependence of cognitive and psychophysiological changes on the lunar cycle or provide alternative explanations for such changes based on other influencing factors. Special attention was given to the analysis of neurophysiological mechanisms that might explain variations in brain activity during different phases of the lunar cycle, as well as the evaluation of hormonal changes that could affect emotional state, work capacity, and overall well-being.

The obtained data will allow conclusions to be drawn about the reality of the Moon's phases influencing cognitive and psychophysiological processes, as well as determine whether this influence is universal or dependent on individual characteristics. If a connection is confirmed, the study may have practical significance for developing recommendations on optimizing sleep, work, and rest schedules, as well as for adjusting the psycho-emotional state during periods of increased sensitivity.

Results. The Moon is the natural satellite of the Earth. The average distance to Earth is about 384,400 km, but due to its elliptical orbit, it varies from 356,500 to 406,700 km. As the closest celestial body to Earth, the Moon has a gravitational influence that determines tides. Besides oceans, this influence may also affect fluid circulation in the human body.

Due to the lack of an atmosphere, the Moon's surface is directly exposed to the solar wind, which can lead to the formation of local magnetic anomalies. Although the Moon does not have a global magnetic field, residual local magnetic fields form due to magnetic minerals and, in certain areas, can exceed the strength of Earth's magnetic field. The Moon once had an active magnetic field, but over time, it weakened [1].

When the solar wind reaches the Moon, it interacts with its surface, causing the displacement of charged particles and leading to fluctuations in the magnetic field, which may also have effects on Earth. Although these Moon-induced changes in the electromagnetic environment are not significant in terms of geophysical processes, they may affect biological organisms on Earth, including humans. However, there is currently no scientific confirmation that these processes have a significant impact on Earth's electromagnetic environment, making this issue a subject of debate.

Changes in the electromagnetic environment caused by the Moon's magnetic anomalies may influence human biorhythms. It has been observed that a full moon may be associated with certain sleep disturbances, increased emotional reactivity, and other psychophysiological changes. Additionally, the interaction of the solar wind with the Moon's magnetic anomalies may lead to changes in Earth's magnetic field, which could affect human health—especially those sensitive to electromagnetic fluctuations. These effects may include migraines, cardiovascular issues, and other physiological responses to magnetic storms. However, the scientific community has not reached a consensus on this impact, and it remains an area for further research [2].

Local magnetic anomalies on the Moon can affect navigation systems that rely on magnetic fields for orientation. While this does not significantly impact conventional technologies on Earth, it may become crucial for future lunar missions, particularly in the context of exploration and the use of technologies on its surface.

Although the Moon does not have its own global magnetic field, its local magnetic anomalies and interactions with the solar wind influence the brain's bioelectrical activity, especially during a full moon. However, a proven mechanism linking magnetic changes to the human nervous system is lacking, and these effects remain hypothetical.

During solar wind activity, magnetic variations may alter the potentials of nerve cells, affecting sleep, stress levels, and vascular reactions. Depending on the lunar phase, human sensitivity to magnetic storms and fluctuations in Earth's electromagnetic field may change, potentially causing headaches, increased fatigue, attention disorders, and changes in heart rhythm.

One of the primary factors influencing the human body is the Moon's gravitational pull. The Moon's gravitational field is the main cause of tidal phenomena in the oceans. However, beyond the oceans, lunar gravity also affects other fluids within the human body, including blood, lymph, and intercellular fluid [3].

Due to the Moon's gravitational influence, certain changes in fluid circulation within the human body can be observed, potentially leading to disruptions in physiological processes. For example, during periods of high tides, when the Moon's gravitational force reaches its peak, changes in blood circulation may occur as blood moves more rapidly through the cardiovascular system. This can affect blood pressure levels and may trigger or exacerbate symptoms of cardiovascular diseases in individuals predisposed to such conditions.

The lymphatic system is also influenced by the Moon's gravity. Lymph circulates more slowly than blood in the human body; however, gravitational fluctuations may stimulate more active lymph movement, affecting the immune system—either strengthening or weakening its functions depending on the specific lunar phase. For instance, during a full moon, an increase in immune system activity has been observed.

Regarding the Moon's electromagnetic effects on humans, it has been found that the Moon interacts with Earth's electromagnetic environment. Each lunar phase causes certain changes in Earth's magnetic field, which, in turn, may trigger physiological reactions in the human body. This influence occurs through interactions with the solar wind and local magnetic anomalies, potentially affecting the nervous and endocrine systems.

Lunar phases may also impact hormonal balance. During a full moon, melatonin levels decrease, which can lead to sleep disturbances and increased emotional excitability. In contrast, the new moon is often associated with improved concentration and cognitive stability.

Noseнко O. M. and Demidchyk R. Ya., in their scientific work, emphasize that melatonin (N-acetyl-5-methoxytryptamine) is a neurohormone synthesized from the essential amino acid tryptophan. Its levels in the blood fluctuate throughout the day: the highest concentration occurs at night, moderate levels in the morning, and the lowest during the day. Light plays a crucial role in regulating its secretion, as

exposure to light can shorten melatonin production duration and lower its levels in the blood. Due to these properties, melatonin may serve as a biological marker of chronodestruction [4].

Fluctuations in the magnetic field also affect cognitive functions: a full moon may cause fatigue and distraction, whereas a new moon enhances attentiveness and receptiveness to new information [4].

The Moon's gravitational and electromagnetic influences on humans often interact, creating complex effects on physiological and psycho-emotional processes. For example, changes in fluid circulation and hormonal levels can amplify or mitigate the effects caused by electromagnetic fluctuations. During high tides, when the Moon's gravitational impact is at its strongest, people may become more sensitive to changes in Earth's magnetic field, leading to intensified physiological and psycho-emotional reactions.

Thus, the Moon not only alters the physical environment around Earth but also affects the human body, causing physiological and emotional changes through gravitational and electromagnetic fluctuations. These effects can be particularly strong during certain lunar phases and may vary depending on individual characteristics of the organism.

Analyzing the dependence of changes in the human body on specific lunar phases, we have reached the following conclusions:

New Moon – A Period of Reduced Energy Potential. The new moon phase is characterized by the lowest gravitational influence of the Moon on Earth. During this time, gravitational forces have the least effect, leading to a general decline in physiological activity. One of the main manifestations of this phase is the reduction of cellular energy potential, resulting in fatigue, apathy, and decreased overall activity. The body does not receive enough energy to maintain high levels of physical and mental performance. People may experience a significant drop in motivation for daily tasks, which is a common characteristic of this phase [5].

From a physiological perspective, the new moon phase is often associated with lowered blood pressure, a slowed heart rate, and general weakness. The body requires more time for recovery and rest, as cellular and tissue regeneration processes slow down. During this time, metabolic activity also decreases, which may lead to weight gain or a feeling of heaviness [6].

Regarding cognitive function, the new moon can reduce the ability for deep information processing, cause difficulties with concentration, and slow down reaction times. During this period, individuals may find it more challenging to perform mental tasks, especially those requiring problem-solving or important decision-making. This is linked to a decrease in neurogenesis efficiency and slowed brain activity due to reduced energy supply to the body.

Emotionally, people often experience mood changes, increased anxiety, depressive states, or mood swings. These emotional fluctuations are caused by a decrease in neurotransmitters such as serotonin, which is responsible for emotional stability. Since the body lacks sufficient energy to maintain a stable emotional state, individuals may be more prone to doubt, insecurity, and negative thoughts [7].

First Quarter – A Time for Increased Energy and Activity. As the first quarter of the Moon begins, an increase in gravitational influence is observed, which

contributes to a rise in the body's energetic activity. During this phase, the Moon triggers the mobilization of bodily resources, leading to the activation of the sympathetic nervous system. This system is responsible for physiological activity, including an increase in energy levels, improved blood circulation, and enhanced muscle tone.

People during this period often experience a surge of strength, with their ability to handle physical and mental challenges restored. The body becomes more resilient, and individuals may feel more motivated and focused. This phase is associated with enhanced metabolic function, making it an ideal time for physical activity and productivity [8].

Physiologically, during the first quarter, blood pressure increases, improving circulation and ensuring more efficient oxygen delivery to tissues. Muscles become more toned, allowing a person to be more physically active. Metabolic processes are activated, enabling the body to function more efficiently and expend energy to sustain activity.

Cognitively, this period is characterized by an enhanced ability to concentrate and improved cognitive functions. People become more capable of solving complex problems, have better memory, and can make quick decisions. These changes also manifest in overall improved productivity and increased motivation to complete various tasks.

Emotionally, the increased energy in the body contributes to optimism, improved mood, and an overall sense of well-being. During this time, people tend to be more social, communicative, and eager to interact with others, participate in events, achieve new goals, and work on personal development [9].

Full Moon – Increased Nervous Excitability and Emotional Fluctuations. The full moon phase is a period of peak activity in the sympathetic nervous system, leading to increased nervous excitability and emotional instability. Gravitational and electromagnetic changes occurring during the full moon may influence the body and contribute to higher stress levels, arousal, and nervousness. During this period, sleep disturbances such as insomnia or shallow sleep are common, negatively impacting the body's physical recovery [10].

Physiologically, this period is accompanied by increased blood pressure, pulsations in the head, and headaches. Heightened nervous excitability can lead to physical symptoms such as hand tremors, increased sweating, and overall bodily tension. Digestive problems may also be frequent, as elevated levels of stress hormones negatively affect the gastrointestinal tract.

Cognitively, there is a tendency toward impulsive decision-making, where individuals may act quickly without fully evaluating the consequences. This is due to increased brain excitability, which may lead to errors in judgment. People may become more irritable, and conflicts in relationships often arise due to a lack of emotional control.

Emotionally, heightened nervous excitability leads to mood swings, including increased anxiety, aggression, and irritability. People may experience significant emotional surges that are difficult to control. Feelings of overwhelm or dissatisfaction may also arise, as emotions do not always find healthy outlets.

Canadian researchers, led by Dr. Jean-Philippe Chaput from the Eastern Ontario Research Institute, conducted a large-scale study involving 5,800 children

aged 9 to 11 from various countries, including China, Finland, South Africa, India, Australia, Brazil, Canada, Colombia, Kenya, the United Kingdom, and the United States. To monitor physical activity and sleep quality, the participants were given accelerometers—devices that function similarly to fitness trackers.

The study found that children's activity levels remained almost unchanged regardless of the moon phase. However, during the full moon, their sleep duration decreased by an average of 5 minutes compared to the new moon. Scientists suggest that this effect may be related to the increased brightness of the full moon, although the exact mechanism of this influence has yet to be determined [11].

Last Quarter – A Time for Recovery and Decreased Activity. During the last quarter phase of the moon, the body gradually transitions into a recovery phase. The parasympathetic nervous system becomes more active, promoting overall relaxation, reduced stress levels, and energy restoration.

Physiologically, this period is marked by lower blood pressure, a slowed heart rate, and a reduced need for intense physical activity. The body begins to enter a state of rest, preparing for the next cycle of energetic activity. People may feel a greater need for rest, sleep, and relaxation.

Cognitively, this period is characterized by decreased mental activity, with individuals experiencing mild fatigue or slower cognitive processes. At the same time, there is an increased tendency for reflection and self-analysis, which can facilitate awareness of important life decisions or changes. This is a time when many people turn to self-discovery practices and inner development.

Emotionally, the last quarter of the moon often brings feelings of calmness, balance, and recovery from previous emotional surges.

The moon, through its gravitational and electromagnetic influences on Earth, can affect biochemical processes in the human body, particularly at the levels of neurotransmitters. These neurotransmitters, such as melatonin, serotonin, dopamine, and gamma-aminobutyric acid (GABA), play important roles in regulating mood, physiological processes, sleep, and overall mental and physical well-being. Lunar phases, especially the full moon and new moon, alter the Earth's electromagnetic field and gravitational influence, which in turn affects these biochemical processes. Considering this, changes in neurotransmitter levels may be linked to various psychophysiological changes occurring in the human body during different moon phases [12].

Melatonin is a hormone produced in the pineal gland and is the primary regulator of circadian rhythms, including sleep and wakefulness. It plays a crucial role in sleep regulation by increasing drowsiness in the dark and reducing it in the light. Since moonlight is a factor that alters environmental brightness, it can influence melatonin production.

Additionally, during the full moon, changes in the Earth's electromagnetic field may reduce melatonin levels in the body. This phenomenon may be partly explained by the fact that during the full moon, ambient light intensity increases, and moonlight may have a similar effect on the nervous system as daylight. Since melatonin also affects the nervous system and neurogenesis, its reduction can lead to sleep disturbances, depressive states, and impaired cognitive functions such as memory and concentration [13].

Melatonin is also closely related to cortisol, the stress hormone. Low melatonin levels can lead to increased cortisol levels, which in turn raises anxiety, stress, and depression, creating a vicious cycle between sleep disorders and psychological well-being. Disruptions in melatonin levels can also affect other aspects of neurophysiology, such as brain neuroplasticity, making adaptation to stressful conditions and cognitive recovery more difficult [14].

Serotonin, a neurotransmitter that plays a key role in regulating mood, emotions, appetite, and pain perception, also contributes to sleep regulation and a sense of well-being. Its levels may fluctuate depending on the moon phases, with an increase observed during the full moon. This may be due to changes in the electromagnetic field that activate serotonin receptors in the brain. Elevated serotonin levels can lead to heightened nervous excitability, hyperactivity, anxiety, or even sleep disturbances [15].

From a neurological perspective, an increase in serotonin levels activates neuronal pathways responsible for emotional state and motivation, affecting the limbic system of the brain. However, this effect can be twofold: on the one hand, elevated serotonin levels can contribute to mood improvement and reduce depressive symptoms, while on the other hand, they may cause anxiety, excessive excitability, or impaired concentration. Serotonin is also linked to dopamine and noradrenaline systems, which may explain changes in motivation, behavioral responses, and the ability to adapt to stressful situations.

Dopamine is an important neurotransmitter that regulates motivation, pleasure, and motor activity. Increased dopamine levels may be observed during periods of heightened emotional excitability, such as during a full moon. This may be associated with the activation of dopaminergic pathways due to changes in the electromagnetic field and the influence of the lunar phase on neural systems. Increased dopamine activity can lead to emotional arousal, aggression, or hyperactivity [16].

Neurologically, dopamine plays a crucial role in controlling motor functions. Increased dopamine activity can lead to greater physical activity, impulsivity, and heightened energy levels. However, excessive dopamine release may also have negative consequences, such as impaired movement control and motor function disruptions. Additionally, dopamine can influence insulin sensitivity, affecting metabolic processes, particularly glucose metabolism.

GABA (gamma-aminobutyric acid) is the main inhibitory neurotransmitter that reduces neuronal excitability and plays a key role in calming the nervous system, regulating stress, and adapting to changes. It is known that GABA levels may decrease during a full moon, leading to increased nervous excitability. This can result in elevated stress levels, anxiety, sleep disturbances, and reduced ability to recover from stressful situations.

From a neurophysiological perspective, a decrease in GABA levels may impair brain neuroplasticity, making adaptation to new conditions and stressful situations more difficult. This may also affect cognitive functions such as memory, concentration, and learning ability.

To empirically verify the possible influence of lunar phases on cognitive activity, work efficiency, and the psychophysiological state of individuals, we conducted a sociological survey.

The survey was conducted using online questionnaires, which allowed us to collect data on participants' subjective experiences regarding the influence of lunar phases on their overall condition.

A total of 68 respondents participated in the study, including 48% women and 48% men. The age distribution of respondents showed that 48% were aged 18-25 years, while 35% were aged 26-35 years. The survey aimed to determine whether people observe the influence of lunar phases on their cognitive activity, work efficiency, physical condition, and emotional well-being.

Analysis of the collected data showed that 71% of respondents follow lunar phases and notice certain changes in their well-being depending on the lunar cycle, indicating a high level of interest in the potential influence of the lunar cycle on humans.

Among the participants, 14.6% reported increased productivity during the new moon, while 43.9% noted that they find it difficult to concentrate during the full moon. At the same time, 41.5% of respondents did not observe any changes in their task performance depending on lunar phases.

Regarding methods for improving efficiency at different points in the lunar cycle, only 20% of respondents attempted to adapt their activities, such as starting new projects during the new moon. Meanwhile, 70% stated that they do not consider lunar phases when planning work, while 10% use relaxation techniques during the full moon to reduce stress levels.

The study of changes in energy levels and motivation revealed that 15.8% of respondents feel increased energy during the full moon, 31.6% noted that this effect is inconsistent, while 52.6% do not experience any changes. Furthermore, 45.9% of study participants reported increased stress levels or fatigue during certain lunar phases, which may indicate a physiological reaction to the lunar cycle.

Assessment of sleep quality showed that 27.5% of respondents experienced worsened sleep during certain lunar phases, 25% reported improved sleep, while 37.5% did not notice any changes. Analysis of emotional state fluctuations revealed that 33.3% of study participants observe mood swings corresponding to lunar phases, including 23.8% who reported mood declines, while 9.5% noted mood improvements.

A detailed examination of observations regarding the full moon showed that 57.9% of respondents experience sleep difficulties during this period, 63.2% report mood changes, 50% experience increased psychological tension, and 34.2% face difficulties with concentration.

Analysis of the obtained results confirms that lunar phases may have some impact on cognitive processes, work efficiency, physical condition, and the psycho-emotional state of individuals. The most significant changes were recorded during the full moon when some respondents experienced sleep disturbances, increased emotional excitability, mood changes, and concentration problems. However, a significant portion of respondents did not report any changes, which may indicate individual differences in perception or the influence of other factors.

The obtained data require further research to establish possible physiological mechanisms of the lunar cycle's impact on the human body. In particular, it is necessary to analyze the correlation between hormonal fluctuations, circadian

rhythms, psychophysiological parameters, and external factors such as light intensity and electromagnetic changes during the full moon.

Conclusions. The results of the study confirm that natural cycles, particularly the phases of the Moon, may have a certain influence on cognitive activity, productivity, and the psychophysiological state of individuals. Analysis of the collected data revealed that the most significant changes occur during the full moon—during this period, some respondents experience sleep disturbances, increased psychological tension, mood changes, and decreased concentration.

At the same time, a significant portion of respondents did not notice any changes in their condition, indicating individual differences in the perception of the lunar cycle. About 71% of respondents monitor the phases of the Moon, but only 20% take them into account when planning their activities or apply methods to regulate their state.

Certain aspects, particularly the relationship between the lunar cycle and sleep quality, stress levels, and cognitive functions, require further interdisciplinary research. Future studies may help to clarify the biological mechanisms of this influence and develop scientifically based recommendations for optimizing work and rest schedules in accordance with natural rhythms.

The obtained results open up prospects for a more detailed analysis of the interconnection between circadian rhythms, hormonal balance, and the impact of external factors such as the intensity of moonlight, electromagnetic changes, and their effect on the human nervous system.

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ВПЛИВ ПРИРОДНИХ ЦИКЛІВ НА КОГНІТИВНУ АКТИВНІСТЬ ЛЮДИНИ ТА ПСИХОФІЗІОЛОГІЧНИЙ СТАН

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Анотація. *У цій науковій роботі досліджується потенційний вплив природних циклів, зокрема фаз Місяця, на когнітивну активність людини, рівень працездатності та психофізіологічний стан. Робота аналізує теоретичні механізми цих впливів, опираючись на дослідження нейрофізіології, ендокринології та психофізіології. Дослідження висвітлює, як гравітаційні та електромагнітні коливання під час різних фаз Місяця можуть впливати на гормональний баланс, активність нейромедіаторів та загальну функцію мозку.*

Практична частина дослідження включала комплексне опитування серед 68 учасників віком від 18 до 50 років, які не мали значних соматичних, неврологічних чи психічних захворювань. Учасники були спостережені протягом повного місячного циклу (28–30 днів) і повідомляли про зміни у когнітивній діяльності, емоційному стані та якості сну. Аналіз зібраних даних виявив помітні закономірності: фаза повного Місяця часто була пов'язана з підвищеною нервовою збудливістю, емоційною нестабільністю та порушеннями сну, тоді як фаза нового Місяця зазвичай супроводжувалася зниженими рівнями енергії, втомою та уповільненням когнітивної діяльності. Проте, результати також підкреслюють індивідуальну змінність, оскільки деякі респонденти не зафіксували значущих ефектів.

Отримані результати підкреслюють складність біологічних реакцій на місячні цикли та наголошують на необхідності подальших міждисциплінарних досліджень для виявлення точних фізіологічних механізмів. Результати дослідження можуть знайти практичне застосування для розробки стратегій оптимізації продуктивності, управління стресом та покращення якості сну шляхом узгодження повсякденних рутин із природними біоритмами.

Ключові слова. *Місячний цикл, когнітивна активність, психофізіологічний стан, нейрофізіологія, ендокринологія, циркадні ритми, регуляція мелатоніну, коливання серотоніну, динаміка дофаміну, гравітаційні ефекти, електромагнітні варіації, патерни сну, емоційна стабільність, адаптація до стресу, біологічні ритми.*

