



Understanding Day and Night in the Qur'an: A Bridge between Science and Text Content

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Abstract

This study explores the phenomenon of day and night in the Qur'an as a conceptual bridge connecting sacred texts with modern science within the field of Tafsir studies. The urgency of this research lies in its capacity to integrate spiritual interpretation with contemporary scientific insights, particularly regarding Earth's rotational dynamics and human circadian rhythms. Utilizing a descriptive qualitative method through library research and thematic (*mawḍūʿī*) exegesis, this study synthesizes Qur'anic verses concerning time with the latest biomedical and astronomical literature. The findings reveal a strong alignment between the Qur'an's description of time transitions such as the cosmic rotational concept of *yukawwiru*, alongside *subāt* and *libās* during the nocturnal resting phase and human neuroendocrine mechanisms, including melatonin synthesis and cortisol regulation. This interdisciplinary approach not only enriches the simultaneous understanding of theology and science within Hadith and Tafsir scholarship, but also offers practical implications through the Theo-Circadian Sleep Hygiene concept for healthcare and integrative curriculum development in education. Ultimately, this study concludes that absolute harmony exists between Qur'anic texts and modern science, providing a robust foundation for humans to harmonize their life rhythms with the earth's natural cycles to overcome modern health crises.

Keywords: Circadian Rhythm, Day-Night Phenomenon, Scientific Exegesis

Abstrak

Penelitian ini mengkaji fenomena siang dan malam dalam Al-Qur'an sebagai jembatan yang menghubungkan teks-teks sakral dengan sains modern dalam bidang studi Tafsir. Urgensi penelitian ini terletak pada kemampuan mengintegrasikan penafsiran spiritual dengan wawasan ilmiah kontemporer, khususnya terkait dinamika rotasi bumi dan ritme sirkadian manusia. Penelitian ini menggunakan metode kualitatif deskriptif melalui pendekatan library research dan tafsir tematik (*mawḍūʿī*), yang menyintesis ayat-ayat Al-Qur'an terkait waktu dengan literatur ilmiah biomedis dan astronomi terbaru. Hasil penelitian menunjukkan adanya keselarasan yang kuat antara deskripsi Al-Qur'an mengenai transisi waktu seperti konsep *yukawwiru* pada rotasi kosmik, serta *subāt* dan *libās* pada fase istirahat malam dengan mekanisme neuroendokrin tubuh manusia, termasuk sintesis hormon melatonin dan regulasi metabolisme kortisol. Pendekatan interdisipliner ini tidak hanya memperkaya pemahaman simultan antara teologi dan sains dalam khazanah studi hadis dan tafsir, tetapi juga menawarkan implikasi praktis berupa konsep Theo-Circadian Sleep Hygiene bagi sektor kesehatan serta pengembangan kurikulum integratif dalam bidang pendidikan. Kesimpulan dari studi ini menegaskan bahwa terdapat harmoni mutlak antara teks Al-Qur'an dan sains modern, yang memberikan landasan kokoh bagi manusia untuk menyelaraskan ritme kehidupan dengan siklus alami bumi guna mengatasi krisis kesehatan fisik dan mental di era modern.



Kata Kunci: *Ritme Sirkadian, Fenomena Siang-Malam, Eksegesis Ilmiah*

INTRODUCTION

Modern society lives its daily life with a pattern of activities that rely heavily on alternating days and nights, both for work and social agendas (Zhou et al., 2025). Unfortunately, this hectic rhythm of life often leads people to ignore their own body's biological clock, which is the circadian rhythm, a 24-hour cycle that controls vital functions such as sleep patterns, body temperature, and hormone release (Miike, 2025). Coupled with the excessive enclosure of artificial light at night, the natural boundary between light and dark is increasingly blurred. As a result, not a few people have to deal with sleep disorders and psychological distress (Nieva-Ramírez et al., 2025).

A number of studies prove that changes in the Earth's rotation dynamics, both due to natural factors and human activities (anthropogenic), also affect the length of day and night in various parts of the world. This time shift certainly has a direct impact on our health and daily activity patterns (Bonmatí-Carrión et al., 2024; Griffiths, 2023; Sharo et al., 2024). For example, the global pandemic some time ago which forced mass lifestyle changes, has been proven to have disrupted the circadian rhythm of the human body. This condition clearly adds complexity in understanding the impact of time change in the modern era (Kujawa, 2025). Scientifically, the physical and astronomical understanding of this phenomenon continues to develop through various cutting-edge studies that focus on the analysis of the duration of time as well as the dynamics of the Earth's rotation on its axis (Dhar et al., 2024).

Our circadian rhythm actually relies heavily on the abundance of sunlight during the day as its main guide (de Menezes-Júnior et al., 2025). Therefore, the change of day and night due to the rotation of the Earth is not just about changing the numbers on the wall clock or setting the bedtime. This phenomenon has a direct impact on our overall physical and mental health (Valentine et al., 2025). This is in line with the findings of Kenneth P. Wright Jr., who proved that exposure to natural light during the day is consistently able to strengthen the body's circadian rhythm. The positive impact is immediately felt on increasing one's concentration and mental stability (Morin et al., 2025). On the contrary, various recent global scientific studies warn that this chronic chaos in the biological clock has adverse effects on human psychology (Putra et al., 2024). Understanding this chain of relationships is very crucial today, considering that the lifestyle of modern society is increasingly vulnerable to being dragged into

a circle of health problems due to exposure to artificial light that never goes out (Hu et al., 2026).

This mismatch between the body's biological clock and the artificial light environment has been shown to be closely related to the increased risk of depression, anxiety, and chronic sleep disorders. Various meta-analyses on a global scale have begun to highlight this biological side. They examined how the modern, artificially lit environment slowly disrupts circadian rhythms and threatens human physical health (Chen et al., 2024; Nieva-Ramírez et al., 2025). The real evidence can be seen from the fundamental research led by Anne-Marie Chang. His team found that exposure to blue *light* from a screen at night can suppress the production of the hormone melatonin massively (Chang et al., 2015). As a result, a person's sleep time will go back a long way and their quality of rest automatically declines sharply (Sznabel, 2025).

To address the issue, Garcia et al. (2026) emphasizes the importance of maintaining a consistent sleep and wake schedule in order to maintain the body's biological balance. This is especially crucial for shift *workers* as well as those who live a modern lifestyle with flexible working hours (Roszak et al., 2026). In line with that, Lewandowski (2023) offers another solution from the results of his research, namely the importance of aligning daily activities with natural cycles, including the alternation of day and night. By restoring the rhythm of life following this natural clock, a person can not only boost their work productivity, but also improve their overall quality of life (Li et al., 2026).

Various previous studies have indeed thoroughly explored the affairs of circadian rhythms, the impact of artificial light, mental health, and the dynamics of the Earth's rotation that affect the change of day and night. Unfortunately, most of these studies still stand alone in the scientific and medical realms, without touching the textual and spiritual dimensions of the Qur'an. This gap is highlighted by Azlan et al. (2026). They emphasized the need to systematically integrate science and interpretation of the Qur'an, an area that has so far been rarely touched. This is the main gap that opens up space for research that bridges modern science and the content of religious texts.

Seeing these conditions, a research entitled "Understanding Day and Night in the Qur'an: A Bridge between Science and Text Content" is very crucial to be carried out. Through a comprehensive cross-disciplinary approach, this study is here to fill the blank gaps that have been neglected so far. This approach allows us to dissect the phenomena of day and night not only from the point of view of physics and biology, but also from the depth of meaning and spiritual value contained in the Qur'an. Thus, this step not only supports harmony between

science and religion, but also provides intellectual contributions that are able to expand academic horizons while offering practical benefits for modern human life.

The hypothesis in this study rests on the view that the verses of the Qur'an about day and night contain messages that go beyond spiritual and textual meaning. These meanings are believed to be in line and can be scientifically proven through modern scientific concepts, such as the circadian rhythm of the body as well as various astronomical phenomena. By marrying religious and scientific understanding, the study strongly suspects a real harmony between the text of the Qur'an and the latest scientific findings. This alignment will enrich scientific insights, as well as provide a solid foundation to help humans harmonize the rhythm of their lives with the earth's natural cycle.

RESEARCH METHODOLOGY

Research Design

This study uses qualitative methods to explore and understand the meaning of the alternation of day and night from two major points of view: the text of the Qur'an and the latest scientific findings (Achjar et al., 2023; Zeki et al., 2026). This textual and scientific study model was deliberately chosen to present an in-depth analysis of relevant Qur'anic verses, then juxtapose them with modern scientific theories about circadian rhythms, biological cycles, and the dynamics of the earth's rotation. Through this cross-disciplinary model, research is based on a comprehensive understanding to bridge spiritual and scientific insights, so as to be able to present a new perspective that is richer and more contextual (Amir et al., 2023; Rofiah et al., 2026).

Data Source

The data in this study was collected from two main tracks:

1. Textual Data (Primary & Secondary): The verses of the Qur'an that contain the terms *al-lail* (night) and *an-nahar* (day), with a focus on QS. Yūnus: 67, QS. Al-Furqān: 47, QS. Al-Anbiyā': 33, and QS. Az-Zumar: 5. The supporting interpretations used include classical and contemporary interpretations (Hakam et al., 2026).
2. Empirical Data (Secondary): Articles from reputable national and international journals from 2022–2026 that discuss the mechanics of the Earth's rotation, circadian rhythms, melatonin secretion, and the impact of *blue light* on mental health (Gunawan, 2022).

Data Collection and Analysis

Data collection was carried out through *the library research* method with digital documentation techniques on Qur'anic databases (word indexing) and scientific databases

(ScienceDirect, PubMed, Google Scholar) (Achjar et al., 2023) The steps of data analysis include:

1. Thematic Analysis: Classify the verses of the Qur'an based on functional clusters (day as a space of movement, night as a rest room and closing) (Ghosiyah et al., 2024).
2. Interdisciplinary Synthesis: Comparing the biological-astronomical characteristics of laboratory findings with the implicit meaning (*scientific cues*) of sacred texts (Ermanto et al., 2023).
3. Data Validity: Using a theoretical triangulation technique involving interpreters and biomedical experts to validate interdisciplinary interpretations to avoid *pseudo-science*. (Alawiyah et al., 2024; Gunawan, 2022).

RESULTS AND DISCUSSION

Based on thematic tracking, the word *al-lail* (night) is mentioned 92 times and *an-nahar* (day) 57 times in the Qur'an. This pattern of mentioning is almost always in pairs and shows a systemic regularity. To streamline the transition into the analytical findings and seamlessly integrate the structural textual mapping into the core narrative body, this study crystallizes the textual data into three main interdependent functional domains:

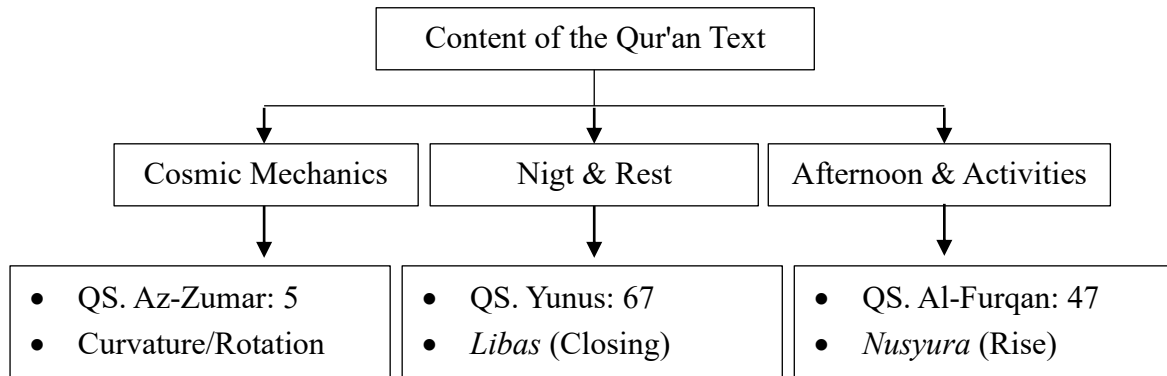


Figure 1. Thematic and Functional Mapping of Day and Night Verses in the Qur'an

1. Cosmic Mechanics of Time Turn: In QS. Az-Zumar: 5, the Qur'an uses the term *yukawwiru* (twisting/rolling) night over day and vice versa. This word indicates the shape of the earth that is round and the existence of continuous rotational motion. QS. Al-Anbiya: 33 emphasizes that the night, day, sun, and moon move in a certain circular line (*falak*).
2. Night as Closing and Calming Phase: In QS. Jonah: 67, the night was created for humans to gain peace (*li-taskunu fih*). More specifically, QS. Al-Furqan: 47 identifies night as clothing (*libasa*) and sleep as rest (*subata*).

3. Daylight as a Mobility Space (Active Phase): Conversely, daylight in QS. Al-Furqan: 47 is referred to as *nushura* (day of awakening/activity). This text establishes a strict functional boundary that the day is a phase of energy expenditure and livelihood.

Interpretation of "Yukawwiru" and the Earth's Rotation

Before dissecting the biological implications of the alternation of day and night on the human body, it is important to first examine the cosmic mechanics underlying the cycle. In the discourse of modern science, the transition of time on earth is understood as a direct result of the rotation of the planet on its axis in the presence of the sun's rays. However, long before telescopes and satellites were able to validate this spherical motion, the holy text of the Qur'an had recorded the phenomenon through very specific geometric diction selections. This scientific gesture (*scientific gesture*) is not just a textual sweetener, but a precise theological conceptualization of the dynamics of the earth (Iqrar & Hashim, 2024; Munawar et al., 2026). This temporal and cosmic regularity highlighted in the Qur'an demonstrates profound correspondence with modern astrophysical concepts regarding spacetime dynamics and cosmic mechanics, which have been extensively explored in contemporary scientific exegesis of celestial verses (Setyowati & Junnifar, 2024).

To understand how this scientific bridge was built, interpret the term "*yukawwiru*" in QS. Az-Zumar: 5 is the main epistemological key. This diction opens up a rich space for dialogue between scholars across the ages and astrophysical scientists. Through tracing the meaning of the word, we can see how religious texts are able to transcend their time, providing a solid rational foundation to explain the earth's rotation, light gradation, and macrocosm stability which are the main prerequisites for the survival of all organic beings (Ali & Musfiroh, 2024).

The conceptualization of cosmic mechanics in the Qur'an cannot be partially understood through a single verse, but must be examined through a *textual network* that confirms each other (Branch, 2024). This epistemological bridge between sacred texts and modern astrophysics is radically realized when we integrate the interpretation of QS. Az-Zumar: 5 and QS. Al-Anbiya: 33. On the one hand, QS. Az-Zumar: 5 establishes the geometric foundation regarding the shape and local motion of the earth through *takwir* diction. On the other hand, QS. Al-Anbiyā': 33 expands that horizon into a system of systematic macro orbital mechanics. Through the combination of these two verses, the Qur'an presents a cosmological description that predates its time, in which the alternation of day and night is no longer seen as a static or mystical event, but rather the result of precise geometric-kinetic interactions in space (Chauvet, 2023b). To dissect this complexity, a linguistic analysis of QS. Az-Zumar: 5 is the main gate. Allah SWT. said:

﴿ خَلَقَ السَّمَوَاتِ وَالْأَرْضَ بِالْحَقِّ يُكَوِّرُ اللَّيْلَ عَلَى النَّهَارِ وَيُكَوِّرُ النَّهَارَ عَلَى اللَّيْلِ وَسَخَّرَ الشَّمْسَ وَالْقَمَرَ كُلٌّ يَجْرِي لِأَجَلٍ مُّسَمًّى ۖ أَلَا هُوَ الْعَزِيزُ الْغَفَّارُ ۝ ﴾

He created the heavens and the earth with right. He closes the night over the day, closes the day over the night, and subdues the sun and the moon. Each of them circulates according to the specified time. Know that He is the Most Powerful and the Most Forgiving.

Etymologically in Classical Arabic, the word *kawwara-yukawwiru-takwiran* refers to the activity of rolling a turban on a round head. The early interpretation immortalized by Al-Tabari (2001) emphasized that day and night intersect in a constant cycle, reflecting the early Muslim understanding of cosmic order. This linguistic approach is emphasized by Al-Zamakhshari (1987) through *the analysis of balaghah* which states that *takwir* implies a gradual reduction on one side of time to add another side of time, a micro description that is very accurate to describe the phenomenon of dawn and dusk on earth. This micro description is very accurate in describing the phenomenon of *twilight* and sunset on earth, where the transition of light to dark does not occur suddenly or breaking, but rather flows curvilinearly following the curvature of the earth's surface.

Philosophically-cosmology, Al-Razi (1999) went further in his time by analyzing the spherical (spherical) shape of celestial bodies. Al-Razi argued that the rotation of day and night in a circular manner (*takwir*) would not have occurred consistently without the existence of a spherical shape of the earth and the attachment of the earth to a certain axis of rotation. In the modern view, this dynamic geometric transition is examined in depth by Al-Tahir bin 'Assyria (1997), who asserts that *the yukawwiru diction* is evidence of a scientific miracle (*i'jaz 'ilmiy*) that preceded the invention of modern telescopes; the word implicitly explains that the earth rotates on its axis in the presence of the sun's rays, so that the light and dark areas move in a circular motion resembling a roll of cloth on a sphere.

This physical rotational motion, as described in modern astrophysics, occurs at a 23.5-degree tilt as the Earth orbits the sun. According to Jauhari (2013) in his scientific interpretation, *takwir* is a manifestation of the law of macromechanics (*Sunnatullah*) which maintains the distribution of solar thermal energy evenly across the planet's surface. Jauhari attributes this verse to the importance of the earth's rotation for the survival of the global ecosystem; Without this dynamic rotation, one side of the Earth would experience deadly extreme heat, while the other side would freeze in eternal darkness. This harmony of cosmic rotation is responded to in a sociological-contextual way by Rida (1947) who states that the regularity of the earth's rotation and the accuracy of the change of time are the main foundations for modern humans to build an orderly civilization, dating system, and social laws. This interpretation of cosmic

mechanics only reaches the peak of its scientific relevance when it is harmoniously converged with the word of Allah in QS. Al-Anbiya: 33:

﴿ وَهُوَ الَّذِي خَلَقَ اللَّيْلَ وَالنَّهَارَ وَالشَّمْسَ وَالْقَمَرَ كُلٌّ فِي فَلَكٍ يَسْبَحُونَ ۝ ٣٣ ﴾

It is He who created the night and the day, the sun and the moon. Each of them circulates on its distribution line.

Through this verse, the Qur'an introduces the concept of *falak* (circular/orbital line) and *yasbahun* activity (swimming/circulating at a constant speed). Al-Razi (1999) made a remarkable conceptual leap of his time by correlating these two verses. Al-Razi argues that the phrase *kullun fi falakin yasbahun* affirms that all celestial bodies, including the representation of day and night inherent in the existence of the earth, are in an active state of motion on a circular trajectory. For al-Razi, it is impossible to roll (*takwir*) between day and night in QS. Az-Zumar: 5 can occur eternally and precisely if the earth is flat and static. The integration of these two verses led to the initial theological-philosophical conclusion that celestial bodies move in spherical geometry, a highly advanced thought in the midst of the rigid dominance of ancient geocentrism. This view is expanded by al-Alusi (1995), who states that the circulation of the sun, moon, and constant day-night shifts are a unit of macrocosmic mechanical systems that are deliberately designed to maintain the stability of the vitality of living beings.

In the perspective of modern and contemporary interpretation, the integration between *takwir* (QS. Az-Zumar: 5) and *yasbahun* (QS. Al-Anbiya: 33) dissected using global astrophysical and geophysical instruments. Ibn 'Asyur (1997) emphasized that the combination of these two verses is a form of scientific miracle (*i'jaz 'ilmiy*) that is very bright. Ibn 'Assyria explained that *the word yasbahun*, which literally means to swim above the surface of the water describes the movement of celestial bodies in a vacuum, which floats without physical support poles, but still obeys the laws of its orbital gravity. When the earth performs *yasbahun activities* (rotating on its own axis/rotation as well as circling the sun/revolution), then automatically the phenomenon of *takwir* occurs on its surface. The part of the earth facing the sun will experience daylight, and as the globe rotates, the bright area seems to be rolled up by the darkness of the night.

The impact of the integration of orbital rotational mechanics is studied theoretically by Tantawi Jauhari (2013). Jauhari positions this combination of verse as a manifestation of the laws of thermodynamics and planetary ecosystems. The rotation of the earth at the 23.5-degree axis tilt indicated by the cyclical motion of *takwir* and *yasbahun* functions as a distributor of solar thermal energy. If the earth stops rotating on its axis (there is no local *yasbahun*) or the shape is not spherical so that there is no rolling (*takwir*), then half of the hemisphere will be

baked in deadly extreme heat, while the other half will be frozen in eternal darkness that destroys life (Al Masithoh & Rachmawati, 2021).

Therefore, Rida (1947) reminded that this mechanical order was designed as a foundation for the order of human civilization (*nidzam al-hayat*). Humans can predict time, create calendars, and divide their social rhythms because of the precision of this rotation. Shihab (2002) summarizes this integration by emphasizing the concept of harmony (*tanasub*). Shihab stated that the harmony between the earth's movements in space (QS. Al-Anbiya: 33) and its impact on the division of time on earth (QS. Az-Zumar: 5) is a valid proof that the universe was designed by a single Governing entity. This theological-scientific bridge proves that the Qur'an has provided a geometric blueprint that transcends the limitations of science in its time of descent, challenging modern humans to harmonize the rhythm of their lives with the great rhythm of the macrocosm (Putri & Aprison, 2023).

Molecular Bridge: From "Subata" to Melatonin Synthesis

After mapping how the earth's rotation and orbital mechanics work in maintaining the visual harmony of the universe, the focus of the study has now shifted from the vastness of space to the depths of the biological system of the human body (Fo, 2023). The relationship between the universe and the living things in it is not a separate relationship; The cosmos is a stimulus, while the human body is a receptor that responds precisely. In the modern chronological discourse, the transition from the light of day to the darkness of night is responded to by the body through a complex series of hormonal regulations in order to maintain cellular homeostasis (Fo, 2024).

Interestingly, the Qur'an does not stop at explaining macro mechanics such as *supernatural* motion or orbital circulation. The sacred text goes a step further by providing a functional blueprint for how the human body should adapt to these spherical changes (Chauvet, 2023). To uncover this molecular bridge, analyze the terms "*subata*" (total rest) and "*libasa*" (clothing/covering) in QS. Al-Furqān: 47 and QS. Yūnus: 67 became an important instrument. This discussion will reveal how the strands of religious texts that were handed down centuries ago synchronized amazingly with modern laboratory discoveries regarding melatonin synthesis, cortisol metabolism, and the urgency of keeping the biological clock from the siege of the disruption of modern civilization (Damayanti et al., 2022).

This theo-scientific integration at the microcosm level is magnificently realized when we correlate the functional dimension of the sacred text with the human neuroendocrine system (Lynn, 2024). This molecular bridge is firmly stretched through the coherence of interpretation between QS. Al-Furqān: 47 and QS. Yūnus: 67. Through this textual chain, the Qur'an does not

simply describe night as a marker of time, but an environmental stimulation specifically designed to trigger physiological changes in the body (Damayanti et al., 2022). This functional harmony is revealed when we dissect the text of the verses in the Qur'an. Al-Furqān: 47:

﴿وَهُوَ الَّذِي جَعَلَ لَكُمُ اللَّيْلَ لِبَاسًا وَالنَّوْمَ سُبَاتًا وَجَعَلَ النَّهَارَ تُشْورًا ۚ ٤٧﴾

It is He who makes the night for you (as) clothes and sleep for rest. He made the day to get up and work.

To ensure precise clinical terminology completely aligns with classical theological Arabic lexicography and avoids any perceived pseudoscientific overlap, the linguistic and chronobiological parameters are carefully mapped. The diction of *libāsa* (clothing/covering) and *subātā* (rest) in this verse contains very profound biological cues. Ibn Kathir (1999) in his classical commentary explains that *subātā* is rooted in the word *al-sabt* which means total disconnection from physical interaction and activity (*qath' al-harakah*) in order to rest the five senses. Al-Qurtubi (2006) reinforces the urgency of this condition by analyzing the *libāsa* metaphor in which the darkness of the night is likened to a black blanket that covers human beings universally. Biologically, this condition of "shrouded in darkness" and "disconnection of activity" is an absolute prerequisite needed by the human body to begin the cellular recovery phase. This classical interpretation is synthesized macrocosmically by al-Alusi (1995), who states that the closure of daylight by the night veil (*libās*) is not just an optical event of nature, but an existential decree designed by Allah to protect the vitality of living beings from chronic exhaustion.

Furthermore, the word *subata* in the verse is analyzed in depth by Ibn Kathir (2006), who defines it as the cessation of interaction or the complete cessation of all physical activities (*qath'ul harakah*) in order to restore the body's energy. Al-Qurtubi (2006) strengthens this definition by explaining the natural law aspect of the word *libasa*; night is likened to a dark garment that envelops humans, serving as a protector and a natural veil that conditions the soul to enter the phase of tranquility (*li-taskunu fihi*). This macrocosm cue was synthesized by Al-Alusi (1995), who stated that the closure of the day by night darkness is not just an optical phenomenon, but rather an existential mechanism designed to maintain the balance of the biological vitality of fragile living beings.

Modern science proves that night darkness which is likened to *libasa* by Al-Qurtubi (2006) is the main stimulant for the suprachiasmatic nucleus (SCN) in the hypothalamus to instruct the pineal gland to produce the hormone melatonin. This phenomenon of decreased activity and the achievement of mental stability is described poetically but empirically by Quthb (1990), who emphasizes that night has a "healing touch" for human psychology who is

exhausted by the hustle and bustle of the day. Qutb stated that forcing day activities into the darkness of the night is a form of violation of the law of nature of creation that leads to the destruction of the soul.

When modern humans violate this *limit* by exposing themselves to artificial light (gadgets, LED lights) at night, melatonin production plummets radically. Al-Maraghi (1946) in his modern study reminded that the day was designed as a *nushura* (day of awakening/mobility) because exposure to sunlight stimulates the body's energy naturally. Biologically, the natural light spectrum suppresses melatonin and triggers the secretion of cortisol for energy. The mismatch between the modern lifestyle of all-bright lights at night and the theological design of the body triggers chronic circadian desynchronization. This biological incompatibility, as reflected contemporaneously by Shihab (2002), is the root of the loss of "harmony" (*tanasub*) of life. Shihab asserts that mental health disorders, anxiety, and acute insomnia in urban societies occur because modern humans have broken the functional boundaries of day and night that God has set in a balanced manner.

The absolute coherence of this biological design becomes even more vivid when it is converged with the affirmation of Allah in QS. Yūnus: 67:

﴿هُوَ الَّذِي جَعَلَ لَكُمُ اللَّيْلَ لِتَسْكُنُوا فِيهِ وَالنَّهَارَ مُبْصِرًا ۗ إِنَّ فِي ذَلِكَ لَآيَاتٍ لِّقَوْمٍ يَسْمَعُونَ ٦٧﴾

It is He who has made the night for you to rest in it and make the day bright and bright. Indeed, in such are signs for those who listen.

The use of the phrase *li-taskunū fīhi* (to rest in it) in this verse serves as an explanation of the causality of the concepts of *subātā* and *libāsa*. Al-Razi (1999) explains that *al-sukūn* (tranquility) in this verse is a direct impact of the loss of external stimulation caused by the darkness of the night. Al-Razi argues that peace of mind and body can never be achieved perfectly without the veil of darkness. Through a linguistic-rational lens, Al-Zamakhshari (1987) adds that the attachment between the dark night and the tranquility of the body is an absolute law of causality of creation. When a person conditions himself to be in *libāsa* (darkness), then his body will automatically enter the phase of *taskunū* (biological tranquility) which leads him to a state of *subātā* (complete rest).

In the perspective of modern chronobiology, this series of theological texts finds its molecular explanation precisely in the mechanism of the synthesis of the hormone melatonin. Tantawi Jauhari (2013) in his scientific interpretation has hinted that the timing of the night has a strong chemical influence on the body's internal fluids and systems. Modern science proves that night conditions as *libāsa* (the absence of a shortwave light spectrum/total darkness) are captured by the photoreceptors of the eye's retina, which then relays the signal to the

suprachiasmatic nucleus (SCN) in the hypothalamus. The SCN further instructs the pineal gland to produce melatonin in bulk. This hormone acts as the driving force of *the subātā* and *taskunū* phases, because melatonin lowers the body's core temperature, slows down the heart rate, initiates cellular DNA repair, and triggers deep sleepiness for the recovery of the human immune system (Zare et al., 2023).

On the contrary, the Qur'an designates the day as *nusyūrā* (rising to work) and *mubshirā* (bright light). Ahmad Mustafa Al-Maraghi (1946) commented that bright daylight design functions as a natural stimulant for human mobility. Clinically, exposure to the spectrum of sunlight in the morning radically suppresses melatonin production and triggers the secretion of the hormone cortisol which provides energy and high cognitive focus. However, modern civilization in the digital era has destroyed this fitrah order. Sayyid Qutb (1990) provides a sharp psychological reflection by stating that modern humans are often arrogant by transgressing the limits of the night, forcing daytime activities into darkness using artificial light, which he called a form of rebellion against the nature of the universe.

The destructive impact of this neglect of the biological clock is contemporaneously reflected by Shihab (2002) and Ibnu'Assyria (1997) as the loss of the principle of harmony (*tanāsub*). When modern humans refuse to wear night blankets (*libāsa*) and neglect nighttime sleep (*subātā*) due to exposure to *artificial blue light* from gadgets, melatonin synthesis plummets extremely. As a result, chronic circadian desynchronization occurs which is the root of the soaring risk of depression, anxiety, neurodegenerative disorders, and acute insomnia in urban areas. The integration of these two verses proves scientifically-theoretically that the Qur'an has laid down very rigid regulations for sleep hygiene; Returning to a rhythm of life that respects the limits of day-night transition is not just a healthy lifestyle choice, but a manifestation of existential submission to *Sunnatullah* written in sacred texts in order to maintain the molecular balance of the human body (Tumiran et al., 2025).

Overall, the convergence between the theological terminology of *subātā*, *libāsa*, and *taskunū* and the mechanism of melatonin synthesis proves that the Qur'an does not simply speak in a spiritual vacuum, but rather establishes a very rigid bio-physiological instruction for the human body. This molecular bridge confirms that the physical health and mental stability of modern humans depend heavily on their degree of obedience to the natural rhythms that have been outlined by the Creator. Refusing to wear a blanket of night and exposing oneself to the chronic manipulation of artificial light is a manifest form of disregard for the biological *Sunnatullah* written in the sacred text. Therefore, a return to a lifestyle that is in sync with the earth's light-dark transition is no longer just an optional medical option, but an absolute

existential necessity in order to maintain the integrity of the molecular system, take care of the nature of creation, and save human civilization from the health crisis of the modern era.

Theological-Scientific Integration in Education and Health

The result of this multidimensional integration radically breaks down the secular dichotomy that for decades separated religious sacred texts and modern scientific laboratories. In line with the warnings of Azlan et al. (2026) regarding the emptiness of systematic integration between science and religion, this study empirically proves that the Qur'an does not simply function as a passive moral guidebook. More than that, the sacred text acts as an *axiological blueprint* that directs how science should be understood and applied for the existential benefit of humans. Through the lens of the reconstruction of the thinking of several books of interpretation across the ages studied, it is clear that there is a dynamic epistemological evolutionary trajectory in the way humans understand nature. This understanding moves linearly starting from the traditional textual-orthodox historical approach (Al-Ṭabārī, 2001; Katsir, 1999), moving towards an in-depth linguistic-rational-philosophical exploration (Al-Alusi, 1995; Al-Zamakhshari, 1987; Ar-razi, 1999) until finally reaching its peak in objective scientific-contemporary validation (Ibn 'Assyria, 1997; Jauhārī, 2013; Shihab, 2002).

In the realm of modern medical practical health applications, this cross-disciplinary convergence has given birth to a new preventive paradigm called the Theo-Circadian Sleep Hygiene concept. Through this new perspective, maintaining a consistent nighttime sleep schedule and limiting exposure to artificial light pollution is no longer seen as limited to clinical recommendations or optional physical fitness tips. Instead, this sleep health protocol is redefined as a form of active human obedience and spiritual awareness to the laws of biological nature (*Sunnatullah*) whose mechanism has been rigidly sculpted by the Creator into the strands of the sacred text of the Qur'an. By uniting religious motives (efforts to protect the body as a mandate) and chronobiological evidence (synchronization of the hormone melatonin), patients and the general public have a much stronger psychological and spiritual drive to improve their lifestyle. It offers a holistic preventive approach that has the potential to lower the curve of the prevalence of chronic sleep disorders in urban areas.

Meanwhile, in the macro education sector, the interdisciplinary methodology structure based on the IMRaD model adopted in this research can be implemented tactically to prepare the design of a future curriculum that integrates science and Islam (*Islamic-Science Integration Curriculum*). Instead of teaching circadian biology and astronomy as subjects isolated from spiritual values, educational institutions can use this integrative approach to train students' critical thinking. The younger generation is not only invited to memorize the phenomenon of

the earth's rotation or hormonal secretion under a microscope, but is also guided to read these phenomena through a rational, logical, and empirical evidence-based theological lens. This pedagogical transformation is crucial to form a divine scientific mindset, where every scientific discovery in the laboratory is seen as a technical explanation of the kauniyah verses scattered throughout the universe.

Finally, the urgency of integrating education and health is becoming increasingly urgent amid the disruption of modern digital lifestyles that are increasingly blurring the natural boundaries of day and night. An integrative educational curriculum and a theo-circadian-based health campaign will serve as a preventive shield for modern societies to remain adaptive without having to sacrifice their biological balance. When students and health practitioners understand that violating the functional limits of time set forth in the Qur'an has a direct impact on the molecular damage of the body, a collective consciousness to create a healthy environment, such as *nighttime screen-time* restrictions and biologically-rhythm-friendly urban planning can be realized. In the end, this theological-scientific bridge not only gives birth to a breakthrough discourse on academic papers, but also offers real, applicative, and sustainable solutions to save the quality of human life in the modern era.

CONCLUSION

This study succeeded in proving the initial hypothesis that there is absolute harmony between the Qur'anic textual description of day-night and the principles of modern chronobiology. The Qur'an is proven to not only speak in a theological-spiritual dimension, but also provides precise bio-physiological guidance for the human body through the structuring of the functions of time. The *yukawwiru* phenomenon validates the earth's physical rotation, while the concepts of *subata* and *nusyura* anchor the regulation of circadian rhythms. In the modern era of light ecosystem disruptions, a return to the rhythm of life in harmony with the earth's natural clock as mandated by the Qur'an, is the main preventive solution to address the global physical and mental health crisis. This study has limitations in the nature of its qualitative-based data and secondary literature. The clinical effects of the Qur'an's time-based rhythm synchronization have not been experimentally tested in specific subject groups (e.g., night shift workers). Therefore, future research needs to take a quantitative-experimental approach. It is recommended that clinical studies measure cortisol, melatonin, and psychological performance levels of subjects who apply a strict activity-rest time distribution pattern in accordance with the prayer time transition cycle and macro natural phenomena.

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