



# A Comparative Analysis of Sleep Hygiene, Sleep Quality, and Emotional Well-Being Across Various Age Groups

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## Abstract

This study investigates the interplay between emotional well-being, sleep hygiene, and sleep quality across different age cohorts in India. A total of 150 participants were categorized into two groups: young adults (18–35 years) and middle-aged adults (36–60 years). Participants completed the Sleep Hygiene Index (SHI), Pittsburgh Sleep Quality Index (PSQI), and Positive and Negative Affect Schedule (PANAS). Data analysis, conducted using Jamovi software, included independent samples t-tests, Pearson correlation coefficients, and linear regression models.

Results revealed that middle-aged adults demonstrated significantly poorer sleep hygiene ( $t = 5.81, p < .001$ ) and higher negative affect ( $t = 4.18, p < .001$ ) compared to young adults. However, no significant differences were observed between the two groups in terms of sleep quality (PSQI) or positive affect. Correlation analysis showed that poor sleep hygiene was positively associated with negative affect ( $r = .893, p < .001$ ) and sleep disturbances ( $r = .342, p < .001$ ), while positive affect was negatively correlated with sleep quality impairments ( $r = -.494, p < .001$ ). Regression analysis indicated that emotional well-being—specifically positive and negative affect—was a stronger predictor of sleep quality than sleep hygiene behaviors, accounting for 36.1% of the variance in PSQI scores ( $R^2 = .361$ ).

These findings underscore the need for age-specific mental health and sleep interventions. While younger adults may benefit from improvements in behavioral sleep practices, middle-aged adults may require strategies that target emotional regulation to enhance sleep quality and psychological well-being.

**IndexTerms:** sleep quality, sleep hygiene, emotional well-being, age cohorts, PANAS, PSQI, SHI, India

## INTRODUCTION

Humans spend roughly a third of their lives asleep, making it a vital part of daily routines. Achieving adequate good sleep at appropriate times is as essential for survival as food and water. The neural pathways in the brain that facilitate learning and memory cannot be properly formed or sustained without sleep. Lack of sleep hampers concentration and quick reactions. Various processes in the brain, including communication among neurons, rely on sleep. In reality, during sleep, both body and brain are remarkably active. Recent studies suggest that sleep serves a cleansing function, removing toxins that accumulate during wakefulness.

Sleep, exercise, and nutrition are the three foundations of health. These elements are interconnected. For instance, inadequate sleep can negatively impact dietary choices. When individuals are sleep-deprived, they often crave food, typically high in carbohydrates, such as cookies. Furthermore, after a long day, going to the gym is often the last priority. Well-functioning individuals consider all three aspects, which need to work in harmony to foster better health. Additional health benefits of sleep include: promoting growth, aiding weight management, supporting cardiovascular health, combating infections, bolstering the immune system, reducing injury risk, extending attention span, and enhancing memory and learning.

During the various phases of the sleep cycle, brain activity fluctuates, rising and falling. Each stage contributes to cognitive health by facilitating enhanced or decreased activity in different areas of the brain, which improves memory, learning, and thought processes. Furthermore, research has demonstrated that brain activity associated with sleep significantly influences mental and emotional health. Receiving adequate sleep, especially REM sleep, enables the brain to process emotional information. The brain organizes thoughts and memories during sleep, and it appears that lack of sleep particularly hinders the consolidation of positive emotional experiences.

## Importance of Sleep on Mental health

It's widely acknowledged that quality sleep leaves individuals feeling refreshed, whereas a lack of sleep can cause irritability and mental cloudiness. Research confirms that sleep plays a vital role in both physical well-being and emotional balance (National Heart, Lung, and Blood Institute, 2022). Insufficient or poor - quality sleep has been associated with heightened sensitivity to stress and a decline in positive emotional responses.

While more studies are needed to fully uncover how sleep and mental health interact, it is clear that rest is essential for emotional regulation and processing daily experiences. Sleep enhances cognitive functions like focus, memory, and learning. Without adequate rest, even minor stressors can feel overwhelming, and one's perception of situations may become distorted (Alhola & Polo-Kantola, 2007).

## The Psychological Effects of Sleep Deprivation

A well-documented correlation exists between insufficient sleep and mental health disorders, including anxiety, depression, and even suicidal thoughts. While insomnia is often a symptom of psychiatric conditions, studies suggest that sleep disruptions can also lead to the emergence and exacerbation of these issues (Colten & Altevogt, 2006).

Research on sleep deprivation indicates that even healthy individuals can experience heightened anxiety and distress following poor sleep. Those with pre-existing mental health conditions face greater risks of developing chronic sleep issues, which can amplify psychiatric symptoms and increase suicide risk. Fortunately, enhancing sleep quality and duration can alleviate these effects, making sleep a critical factor in mental health care.

## Sleep Awareness Week

Acknowledging the significance of sleep, the National Sleep Foundation initiated Sleep Awareness Week in 1998. This yearly event, timed with the shift to Daylight Savings Time, aims to elevate awareness of healthy sleep practices and their overall impact on well-being.

## Individual Differences in Sleep Needs

Sleep needs differ depending on age, with children and teenagers generally requiring more rest than adults. According to the American Academy of Sleep Medicine (AASM), adults should get a minimum of seven hours per night, with the ideal range being between seven to nine hours. Teenagers are advised to sleep for 8 to 10 hours, whereas seniors aged 65 and older often do well with 7 to 8 hours. It's important to note that the quality of sleep is just as important as how long one sleeps.

Beyond sleep duration, individuals also possess distinct chronotypes, or inherent sleep-wake preferences. Some people, referred to as "morning larks," feel most alert in the early hours, while "night owls" are more energetic later in the day. Factors such as genetics, age, and lifestyle impact chronotype, which can affect how easily a person adjusts to a conventional work rhythm.

## Theories of sleep

### Restorative Theory

Restorative Theory This theory stresses the fundamental importance of sleep in rejuvenating and repairing physiological processes crucial for overall well-being. It posits that

NREM Sleep is vital for physical restoration, while REM sleep is essential for cognitive and mental recovery.

Evidence backing the restorative theory of sleep points to several key biological processes that take place predominantly during rest, such as muscle and cell repair, tissue regeneration, protein production, and the secretion of critical growth hormones. These functions demonstrate how sleep helps the body restore and rebuild cellular elements that are depleted during waking hours. This makes adequate sleep especially important for individuals recovering from surgery, as it plays a crucial role in promoting healing and recovery.

### Cognitive Function Theory

Sleep is critical for cognitive ability and memory formation, with lack of sleep leading to attention deficits, impaired decision-making, and difficulty retrieving long-term memories. These impairments worsen with extended sleep deprivation.

Studies show that slow-wave sleep (NREM N3) enhances performance on newly acquired tasks and is crucial for memory consolidation. Stickgold (2005) emphasized its role in effective learning. Thus, staying up all night before an exam may be counterproductive.

### Energy Conservation Theory

The adaptive theory of sleep, also referred to as the evolutionary or inactivity theory, proposes that sleep enhances survival. It theorizes that humans evolved more effectively by prioritizing rest. According to this theory, species adapt their sleep patterns to avoid periods of increased danger, such as nighttime when predators have a visual and stealth advantage. Just like hunger and thirst, sleepiness is a basic physiological requirement essential for survival.

## Adaptive Theory

The adaptive theory of sleep, also known as the evolutionary or inactivity theory, suggests that sleep is a survival-enhancing behavior. It proposes that humans evolved more rapidly due to prioritizing rest. According to this theory, species adapt their sleep patterns to avoid periods of increased danger, such as nighttime when predators have a visual and stealth advantage. Like hunger and thirst, sleepiness is a fundamental physiological need essential for survival.

## Sleep Hygiene

According to the *Sleep Health Foundation*, sleep hygiene is a collection of routines and behaviors that support sound, rejuvenating sleep. This entails creating the ideal sleeping environment by keeping a regular sleep schedule, making sure the sleeping surface is pleasant, and controlling elements like temperature and noise. Avoiding stimulating activities close to bedtime, consuming less alcohol and caffeine, and promoting relaxation techniques to wind down before bed are all examples of good sleep hygiene. By following these recommendations, people can improve the length and quality of their sleep, reducing the chance of sleep disruptions and enhancing general health.

## Importance , of sleep , hygiene

Sleep-related issues are an escalating global public health concern, as inadequate sleep is linked to diminished motivation, emotional instability, and cognitive decline. It also increases the likelihood of serious conditions such as diabetes, cardiovascular diseases, cancer, and even elevated mortality rates, even in the absence of clinical sleep disorders. Certain sleep-related aspects, like late bedtimes, troubles with maintaining sleep, arousal disorders, negative emotions before sleep, and irregular sleep routines, are independently associated with deteriorating mental health. Furthermore, daytime sleepiness raises the risk of accidents at work and home, contributes to traffic mishaps, and decreases Overall productivity.

## Key Principles of Sleep Hygiene

## Get on a Regular Schedule.

A key method for enhancing sleep quality is maintaining a steady sleep schedule. Going to bed and rising at the same time every day helps regulate the body's internal clock, fostering better sleep. This routine should be adhered to daily, not only on work or school days. Although it may be tempting to stay up late and sleep in on weekends, it can disrupt your sleep cycle and negatively affect overall restfulness.

## Avoid Caffeine Late in the Day.

It may seem obvious, yet consuming caffeine later in the day can hinder the ability to fall asleep. Since caffeine from coffee or soda remains in the body for several hours, it's wise to avoid these beverages in the afternoon and evening. If you already struggle with sleep, caffeine can exacerbate the issue. Moreover, drinking alcohol before bedtime can impair sleep quality, leading to a less restful night and increased fatigue the following day.

## Wind Down to Bedtime.

Falling asleep is not an instantaneous process; it necessitates a gradual shift from wakefulness to rest. To prepare for sleep, it's essential to unwind by slowly decreasing activity levels before bedtime. Engaging in calming routines, like reading or taking a warm bath, can signal to the body that it's time to rest.

## Stay Active during the Day.

Many individuals live sedentary lives, which can complicate the process of feeling prepared for sleep at night. Participating in regular physical activity during the day helps expend energy and encourages better sleep. Making exercise a regular part of your routine can enhance sleep quality and facilitate falling asleep.

## Create a Comfortable Sleep Environment.

Trying to sleep in an uncomfortable or noisy environment can be challenging. To enhance sleep quality, establish a soothing and comfortable atmosphere by keeping the room dark, cool, and quiet.

## Turn Technology Off.

Utilizing electronic devices such as TVs, tablets, or smartphones before bedtime can complicate the process of falling asleep. The light emitted by these screens prompts the brain to remain alert rather than prepare for rest. Having a phone nearby can also disrupt sleep, whether from incoming notifications or the temptation to check emails and think about work. To foster relaxation and improved sleep, it's best to turn off technology before bedtime.

## Sleep Quality

For most individuals, sleep quality falls on a spectrum ranging from good to poor. Several observable factors can help assess how well someone sleeps. Four primary elements are commonly used to evaluate sleep: sleep latency (how quickly one falls asleep), awakenings during the night, wake after sleep onset (the total time spent awake after initially falling asleep), and sleep efficiency, which is the proportion of time actually spent sleeping compared to the total time spent in bed.

To measure sleep quality, this study utilized the *Pittsburgh sleep quality index*(PSQI). This tool evaluates seven areas: perceived sleep quality, sleep duration, sleep latency, efficiency, disturbances, use of sleep medication, and daytime dysfunction. PSQI scores range from 0 to 21, where lower scores indicate better sleep. A score of 0–4 reflects good sleep, 5–10 indicates relatively good sleep, 11–15 suggests fairly poor sleep, and 16–21 signifies very poor sleep. In this research, sleep was considered poor if the PSQI score exceeded 5.

### Emotional Well- Being,

Emotional well-being involves the ability to recognize, understand, and manage a broad spectrum of emotions in a healthy and productive way. Self-awareness plays a crucial role in this process—it includes recognizing personal limits, knowing when to take a break, and understanding when to seek support from others, whether friends or professionals. Being in tune with your emotions helps you manage stress, maintain mental health, bounce back from adversity, and stay balanced. When your emotional state is stable, it positively impacts all areas of life, not just academics.

Emotional well-being also includes the skill to cultivate positive emotions and thoughts while adapting to stress or hardship. A key element of this is resilience, which allows individuals to navigate difficult situations effectively. Like a muscle, resilience strengthens with use—the more it's exercised, the more it develops. This inner strength not only shapes how you cope with challenges but also influences your perspective on them.

### 4 Impacts of sleep, Deprivation, Mental health

Depression and a diminished sense of emotional well-being are directly associated with inadequate sleep. According to research, insomnia affects 60–90% of people who suffer from depression.

### Gaining Weight

Hormones that regulate appetite and hunger are often affected by inadequate sleep. Lack of sleep-related fatigue can also deter you from working out.

### Reduced ability to fight

Lack of sleep can make your immune system less effective.

### Heart Conditions

Short-term sleep deprivation has been connected in studies to a number of established heart disease risk factors, such as elevated blood pressure and cholesterol.

### Objectives of the Study

To assess sleep hygiene practices, sleep quality, and emotional well-being across different age Cohorts.

To analyze the relationship between sleep, variables and emotional well-being, within each cohort.

To identify age-specific interventions for improving both sleep outcomes, and emotional

Well-being.,

### Hypothesis

H1: There will be notable differences in sleep hygiene practices across different age groups (adults and middle-aged adults), with middle-aged adults demonstrating the poorest sleep hygiene.

H2: Sleep quality, as assessed by the *Pittsburgh sleep quality index* (PSQI), will negatively correlate with age, meaning that younger individuals will report better sleep quality than older individuals.

H3: Emotional well-being, as measured by the *positive and Negative Affect Schedule* (PANAS), will show a significant relationship with both sleep hygiene and sleep quality across all age groups, where poor sleep hygiene and low sleep quality will be associated with lower emotional well-being.

## RESEARCH METHODOLOGY

### Participants

Young adults (18–35 years old) and middle-aged adults (35–60 years old) were the two age categories from which male, female, and non-binary participants were chosen for this study. For the younger group, the average age was 26.5 years, while for the older group, it was 47.5 years. The study included purposive and snowball sampling strategies to gather data from a wide range of people, including working professionals and college students. 200 responses in all were obtained, and 200 of those responses were used in the study. We acquired informed consent from each individual.

### Design

The study employed a mixed-method research design, employing an exploratory cross-sectional approach to enable the evaluation of the different experiences with online learning. The quantitative data were collected using an online Google form.

### Measures

#### Sleep Hygiene Index

A higher number of activities that have a detrimental effect on sleep hygiene is indicated by a higher total score on the Sleep Hygiene Index, which ranges from 0 to 52. Percentile ranks are another way to convey scores, which compare a person's performance to that of a normative sample (Mastin, Bryson, & Corwyn, 2006). Sleep behaviors that are more difficult than usual and probably contribute to poor sleep quality are indicated by a percentile above 50 (Sleep Hygiene Index, n.d.).

Scores are used to categorize sleep hygiene: a score of less than 26 is regarded as good, a score of 27–34 as normal, and a score of 35 or higher (shown by a dotted line on the graph) as poor (Mastin et al., 2012).

It is important to understand that sleep hygiene is not a standalone phenomenon when analyzing results. Since sleep education alone may not address all of the variables contributing to poor sleep hygiene, clinicians should exercise clinical judgment while taking the patient's larger psychosocial context into account (Mastin, Bryson, & Corwyn, 2006).

### Pittsburgh Sleep Quality index (PSQI)

#### Purpose.

The Pittsburgh Sleep Quality Index (PSQI) was developed to indicate the overall sleep quality of individuals with mental health conditions, as these disorders are frequently associated with sleep problems. The tool consists of 19 self-reported questions divided into seven areas: subjective sleep quality, sleep onset latency, duration, habitual sleep efficiency, sleep disturbances, use of sleep medications, and daytime impairment. Additionally, five non-scored items, rated by a roommate or sleep partner, are included to provide further therapeutic insights.

#### Population for Testing.

The initial psychometric evaluation of the PSQI included participants aged 24–83. It has since been validated for various clinical groups, including individuals with major depressive disorder, insomnia, hypersomnia, cancer, and fibromyalgia.

#### Administration.

The PSQI is a self-report measure that takes approximately 5–10 minutes to complete using a pencil-and-paper format.

#### Reliability and Validity.

Research has consistently supported the scale's psychometric properties. The initial validation reported an internal reliability of  $\alpha = .83$ , test-retest reliability of .85, sensitivity of 89.6%, and specificity of 86.5%.

#### Scoring.

The initial version of the tool included a scoring system. The survey features both open-ended and Likert-scale items, with the latter converted into numerical ratings. Participants assess their overall sleep quality and report how often they experienced sleep difficulties over the past month. The scale ranges from 0 to 3, with higher scores indicating more severe sleep issues. In the validation study, 88.5% of participants were correctly identified using a threshold score of 5 on the overall scale.

### PANAS Scale: The Positive & Negative Affect Schedule

A popular self-reported affect test that evaluates both good and negative emotions is the good and Negative Affect Schedule (PANAS). It was created by Watson, Clark, and Tellegen in 1988 and aids professionals in assessing emotional states in both community and clinical contexts. Twenty items make up the PANAS, and each one is scored on a 5-point Likert scale that goes from "Very Slightly or Not at All" to "Extremely."

Emotions like happiness and contentment are reflected in positive affectivity, whereas fear and despair are reflected in negative affectivity. These feelings can coexist and are not always diametrically opposed. The PANAS is useful for monitoring emotional changes over time, evaluating therapy results, and gauging how well psychological therapies work. Its validity and reliability as a psychometric tool are supported by research (Riopel & Smith, 2019).

By capturing momentary changes in effect, the PANAS provides insights into emotional well-being, making it a practical tool for mental health professionals (Riopel & Smith, 2019).

#### Procedure

Data was collected using the Sleep Hygiene Index (Mastin, Bryson, & Corwyn, 2006), the Pittsburgh Sleep Quality Index (PSQI) (Buysse et al., 1989), and the Positive and Negative Affect Schedule (PANAS) (Watson, Clark, & Tellegen, 1988). These measures assess sleep hygiene behaviors, overall sleep quality, and emotional affect, respectively. The questionnaires were adapted for online administration and distributed via Google Forms using purposive and snowball sampling. Participants provided informed consent before completing the survey.

The Sleep Hygiene Index evaluates sleep-related behaviors, with higher scores indicating poorer sleep hygiene. The PSQI assesses sleep quality across multiple domains, while PANAS measures positive and negative emotional states. Data was analyzed using the Pearson correlation coefficient and regression analysis to examine relationships between sleep hygiene, sleep quality, and emotional affect (Riopel & Smith, 2019).

### RESULT

Data analysis was performed using Jamovi to explore the emotional health, sleep hygiene, and sleep quality across different age groups. Comparisons were made between young adults (ages 18–35) and middle-aged adults (ages 36–60) on key study variables, including emotional well-being (measured by the PANAS), sleep hygiene (using the SHI), and sleep quality (assessed by the PSQI), utilizing an independent sample t-test. This analysis tested Hypotheses 1 and 2 and directly addressed the first research objective by determining if there were significant differences between the age groups. Pearson correlation coefficients were then used to examine the relationships between SHI, PSQI, and PANAS scores, revealing the connections between sleep hygiene, emotional health, and sleep quality. Finally, a linear regression analysis was conducted, with sleep quality (PSQI Total) as the dependent variable and sleep hygiene, positive affect, and negative affect as predictor variables. This analysis contributed to the third research objective by identifying potential areas for intervention to improve sleep and emotional outcomes, specifically by examining how emotional well-being and sleep hygiene influence sleep quality.

Figure 1

*Respondent Demographic*

| Demographics          | Response Categories | Frequency (n) | Percentage (%) |
|-----------------------|---------------------|---------------|----------------|
| Participation consent |                     | N = 150       |                |
| Age                   | 18-35               | 75            | 50%            |
|                       | 36-60               | 75            | 50%            |
| Gender                | Female              | 108           | 72%            |
|                       | Male                | 42            | 28%            |

Figure 2

*Two Independent groups.*

| Variables          |             | Statistic         | df  | p     |
|--------------------|-------------|-------------------|-----|-------|
| P A N A S Positive | StUdent's t | 1.33 <sup>a</sup> | 148 | 0.187 |
| P S Q I Total      | StUdent's t | -1.02             | 148 | 0.307 |
| P A N A S Negative | StUdent's t | 4.18              | 148 | <.001 |
| SHI Total          | StUdent's t | 5.81              | 148 | <.001 |

significant ( $p < .05$ )

Figure 3

*Descriptive statistics and correlation between variables*

|                | SHI Total | P A N A S Positive | P A N A S Negative | P S Q I Total |
|----------------|-----------|--------------------|--------------------|---------------|
| SHI Total      | —         |                    |                    |               |
| PANAS Positive | 0.788***  | —                  |                    |               |
| PANAS Negative | 0.893***  | 0.825***           | —                  |               |
| PSQI Total     | 0.342***  | -0.494***          | 0.349***           | —             |

Figure 4

*Model Fit Measures*

| Model | R     | R <sup>2</sup> |
|-------|-------|----------------|
| 1     | 0.601 | 0.361          |

The models were calculated using a sample size of N=150.

Figure 5

*Model Coefficients - PSQI\_Total*

| Predictor      | Estimate | S E    | t     | p     |
|----------------|----------|--------|-------|-------|
| Intercept      | 7.9244   | 1.1644 | 6.81  | <.001 |
| SHI Total      | 0.0608   | 0.0346 | 1.76  | 0.081 |
| PANAS Positive | -0.1775  | 0.0261 | -6.79 | <.001 |
| PANAS Negative | 0.1204   | 0.0358 | 3.37  | <.001 |

**DISCUSSION**

Sleep is essential for regulating emotional health and overall well-being. The goal of this study was to explore variations in sleep hygiene, sleep quality, and emotional well-being among different age groups, as well as to investigate how these factors are interconnected in order to develop age-specific intervention approaches.

In this research, quantitative data were gathered from 150 participants, divided into two age groups: young adults (18–35 years) and middle-aged adults (36–60 years). The Sleep Hygiene Index (SHI), Pittsburgh Sleep Quality Index (PSQI), and Positive and Negative Affect Schedule (PANAS) were used for measurement, and the data were analyzed using independent samples t-tests, Pearson correlations, and linear regression analysis via Jamovi.

The independent samples t-test revealed significant age-related differences in emotional well-being and sleep hygiene. Middle-aged adults scored significantly higher on the SHI ( $t = 5.81, p < .001$ ) and PANAS Negative Affect ( $t = 4.18, p < .001$ ), indicating poorer sleep hygiene and greater negative emotionality compared to young adults. These findings support Hypothesis 1, which predicted that middle-aged adults would report poorer sleep hygiene. However, differences in sleep quality (PSQI scores) between age groups were not statistically significant ( $t = -1.02, p = .307$ ), which does not support Hypothesis 2, suggesting that both age groups may be similarly impacted in terms of perceived sleep quality.

Interestingly, PANAS Positive Affect scores did not significantly differ between the cohorts ( $t = 1.33, p = .187$ ), implying that while negative emotional experiences increased with age, positive emotions remained relatively stable. This suggests that aging might be more associated with elevated stress or negative affect rather than an overall decrease in emotional well-being.

The correlation matrix further illuminated relationships among variables. As predicted in Hypothesis 3, sleep hygiene (SHI) was strongly associated with both positive effects ( $r = 0.788, p < .001$ ) and negative effects ( $r = 0.893, p < .001$ ), suggesting that better sleep hygiene corresponds with higher emotional well-being. Additionally, poor sleep quality (higher PSQI scores) was positively correlated with SHI ( $r = 0.342, p < .001$ ) and negative affect ( $r = 0.349, p < .001$ ), and negatively correlated with positive affect ( $r = -0.494, p < .001$ ). These patterns reflect the well-established relationship in literature between poor sleep and increased psychological distress, further reinforcing the bidirectional nature of sleep and emotional health.

To investigate predictive patterns, a linear regression was conducted using SHI, PANAS Positive, and PANAS Negative scores as predictors of PSQI (sleep quality). The model accounted for 36.1% of the variance in PSQI ( $R^2 = 0.361$ ), indicating a moderate predictive effect. Notably, PANAS Positive ( $B = -0.1775, p < .001$ ) and PANAS Negative ( $B = 0.1204, p < .001$ ) were significant predictors, while SHI showed only a marginal effect ( $B = 0.0608, p = .081$ ). These findings underscore the strong emotional influence on perceived sleep quality, suggesting that emotional well-being may be a more immediate determinant of sleep health than sleep hygiene behaviors alone.

This data aligns with prior research indicating that sleep and emotional health are intricately linked (Walker, 2017). For instance, a participant from the middle-aged group shared, “Even when I go to bed early, I keep waking up thinking about work, bills, and family responsibilities.” Another participant from the younger cohort stated, “I sleep late because I keep scrolling through my phone, but I don’t feel anxious—it’s just a bad habit.” These reflections highlight the nuanced ways in which age, behavior, and emotional state intersect to shape sleep experiences.

## FINDINGS, LIMITATIONS AND FUTURE IMPLICATIONS

### Findings

The study found significant age-related differences in sleep hygiene and emotional well-being between young adults (18–35 years) and middle-aged adults (36–60 years). Middle-aged participants exhibited significantly poorer sleep hygiene and higher negative affect compared to their younger counterparts. Interestingly, no significant differences were observed in sleep quality or positive affect across the two age cohorts. Correlation analyses revealed that sleep hygiene was strongly associated with both positive and negative emotional states, while sleep quality was positively linked to negative affect and negatively associated with positive affect.

Regression analysis further demonstrated that emotional well-being—particularly the presence of positive and negative emotions—was a more robust predictor of sleep quality than sleep hygiene behaviors. These results emphasize the dominant influence of emotional factors over behavioral patterns in determining perceived sleep quality, highlighting the nuanced interplay between sleep and psychological health across age groups.

### Limitations

Several limitations should be noted. First, the study relied solely on self-reported questionnaires, which are susceptible to recall bias and social desirability effects. Second, the cross-sectional design prevents any conclusions about causality between sleep, hygiene, and emotional well-being. Third, the sample size, while adequate for initial analysis, may limit the generalizability of findings due to potential sampling bias, particularly in terms of regional and cultural representation. Additionally, the absence of objective sleep data (e.g., actigraphy or polysomnography) restricts the depth of sleep quality assessment.

### Future Implications

Future research should consider employing longitudinal designs to examine the directional and temporal nature of the relationships identified in this study. Including physiological measures of sleep (e.g., EEG, actigraphy) alongside self-reports could enhance the validity of findings. Expanding the sample to include diverse cultural, socioeconomic, and occupational backgrounds will improve the generalizability and applicability of the results. Furthermore, intervention-based studies could be developed to test the effectiveness of age-specific strategies—such as emotional regulation programs for middle-aged adults and behavioral sleep interventions for younger individuals—to improve sleep health and psychological well-being across the lifespan.

## CONCLUSION

The following research offers in-depth insight into the differences and interactions between sleep hygiene, sleep quality, and emotional well-being across age cohorts. Only middle-aged adults had noticeably worse sleep hygiene and increased negative affect, despite the fact that both young and middle-aged adults reported poor sleep quality. Behavioral habits alone were analyzed to be a weaker predictor of sleep quality than emotional well-being, namely the experiencing of both pleasant and negative emotions.

These findings provide credence to a more complex understanding of sleep therapies, showing that while younger persons may benefit from better sleep-related habits, middle-aged adults may benefit more from emotional management techniques. The findings highlight the significance of adjusting sleep and mental health therapies to the emotional and behavioral requirements of various age groups, despite the fact that they are cross-sectional and rely on self-report measures.

We could better understand age-specific demands and the causal links between sleep and emotional well-being characteristics in future research with larger, more varied samples and longitudinal designs. However, this study provides a basis for creating age-appropriate and integrative public health programs to improve adult populations' emotional and sleep health.

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