



**THE IMPACT OF NEUROTICISM AND CONSCIENTIOUSNESS ON SLEEP
QUALITY: EXPLORING PERSONALITY TRAITS AND SLEEP DISTURBANCES
IN YOUNG ADULTS**

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ABSTRACT

Poor sleep quality is a prevalent issue among young adults, with potential impacts on mental, emotional, and physical well-being. The study aimed to investigate the influence of neuroticism and conscientiousness on sleep quality in young adults. Using data from 164 participants aged 18-25, the study measured neuroticism and conscientiousness using the NEO Five Factor Inventory (NEO-FFI) and assessed sleep quality with the Pittsburgh Sleep Quality Index (PSQI). Pearson correlation, regression analysis and t-test was used for the analysis of the collected data which revealed a significant association between neuroticism

and poor sleep quality, with higher levels of neuroticism correlating with worse sleep outcomes. However, there was no significant relationship found between conscientiousness and sleep quality. These findings underscore the importance of addressing personality traits, particularly neuroticism, in understanding and improving sleep quality among young adults. Tailored interventions focusing on stress management and sleep hygiene education may offer promising avenues for enhancing sleep outcomes, particularly for individuals exhibiting higher levels of neuroticism.

Keywords: *Sleep quality, Personality traits, Neuroticism, Conscientiousness, Young adults*

INTRODUCTION

Sleep quality is a critical component of overall health and well-being, encompassing both physiological and psychological aspects of restorative rest. According to the American Psychological Association (2020), sleep is defined as "a naturally recurring state of mind and body characterized by altered consciousness, reduced sensory activity, and inhibition of voluntary muscles." It is essential for various physiological functions and cognitive processes. In contrast to the concept of "normal sleep," which refers to sleep meeting physiological and psychological needs, "sleep quality" pertains to the subjective experience of sleep effectiveness and satisfaction, considering both emotional and physical factors. It reflects an individual's assessment of their sleep experience and its impact on them.

Alqahtani et al. (2021) found that 65% of Americans experienced poor sleep quality during the COVID-19 pandemic, highlighting the prevalence and significance of sleep disturbances. Improving sleep quality involves adopting healthy sleep habits, creating a

conducive sleep environment, managing stress, and addressing underlying sleep disorders. Regular exercise, a balanced diet, and maintaining a consistent sleep schedule are also important contributors to better sleep quality.

Key components of sleep quality include sleep duration, sleep efficiency, and sleep disturbances. Sleep duration refers to the total amount of time spent asleep during a certain period, with experts recommending 7 to 9 hours of sleep per night for optimal functioning (Hirshkowitz et al., 2015). Sleep efficiency reflects the proportion of time spent asleep compared to the total time spent in bed, indicating the effectiveness of sleep consolidation. Sleep disturbances, such as insomnia, sleep apnea, and restless leg syndrome, can significantly impact sleep continuity and overall sleep quality.

Recent evidence suggests that personality traits, particularly neuroticism and conscientiousness, play a significant role in determining sleep quality among young adults. Individuals with higher levels of neuroticism may be more prone to poor sleep quality, while conscientiousness may not have a significant impact (Alqahtani et al., 2021).

PERSONALITY AND SLEEP

Personality can be defined as the unique set of enduring traits and characteristics that shape an individual's thoughts, feelings, and behaviours. It encompasses a wide range of qualities, from emotional stability to conscientiousness, which influence how individuals perceive and interact with the world around them. When considering personality in relation to sleep, it becomes apparent that these traits play a crucial role in determining sleep quality and overall well-being. The interplay between personality and sleep is complex. To

Understanding how these traits interact, we will focus on two major traits of personality – Neuroticism and Conscientiousness.

NEUROTICISM

Neuroticism is a personality trait associated with emotional instability, anxiety, concern, moodiness, and susceptibility to stress. Individuals with high neuroticism are more likely to feel negative emotions on a regular and intense basis than those with low neuroticism. They may be prone to excessive anxiety, self-doubt, and mood fluctuations, which can affect different aspects of their lives, including their sleep quality.

Sleep and neuroticism share a complex relationship. Individuals high in neuroticism may struggle with sleep disturbances such as insomnia, difficulty falling asleep and frequent awakenings during the night. This could be due to their tendency to ruminate over stressful events or experience heightened levels of anxiety, making it difficult for them to relax and fall asleep. Numerous research has investigated the link between neuroticism and sleep quality. Roberts et al. (2008) discovered that higher levels of neuroticism were associated with lower subjective sleep quality, longer sleep latency, and more frequent awakenings during the night. Similarly, Baglioni et al. (2011) found that neuroticism was a strong predictor of insomnia symptoms, emphasizing the negative impact of this personality trait on sleep.

CONSCIENTIOUSNESS

Conscientiousness is a personality trait characterized by organization, self-discipline, reliability, and goal-directed behaviour. Individuals high in conscientiousness tend to be responsible, diligent, and thorough in their actions, which can positively influence various aspects of their lives, including their sleep quality. Research suggests that conscientiousness is positively associated with better sleep quality. A study by Digdon and Howell (2008) found that individuals high in conscientiousness reported fewer sleep disturbances, shorter sleep onset latency, and overall better sleep efficiency compared to those low in conscientiousness. This could be attributed to their proactive approach to managing stress, adherence to healthy sleep habits, and ability to prioritize restorative sleep

In conclusion, personality traits such as neuroticism and conscientiousness play significant roles in shaping individuals' sleep quality. While neuroticism is associated with increased sleep disturbances and insomnia symptoms, conscientiousness is linked to better sleep outcomes and improved sleep efficiency. Understanding the interplay between personality and sleep can inform interventions aimed at promoting healthier sleep habits and enhancing overall well-being.

REVIEW OF LITERATURE

Quaedflieg (2023) investigated how personality traits, daily stress, and sleep quality are related among college students, particularly during exam periods and low-stress periods. Over a 14-day period, both objective and subjective sleep measures were collected alongside daily self-reported stress levels. The study found that neuroticism was linked to

poorer subjective sleep quality and higher overall stress levels. Additionally, conscientiousness was found to moderate the relationship between daily stress and sleep fragmentation. Highly conscientious individuals experienced less sleep fragmentation and woke up earlier after stressful days. These results highlight a complex interplay between stress, sleep, and personality, emphasizing the importance of addressing stress management and sleep quality to enhance overall well-being.

Gaur et al. (2021) conducted a study to investigate how sleep quality influences the personality traits of young adults. A sample of 100 participants was divided into two groups based on sleep quality, assessed using the Pittsburgh Sleep Quality Index (PSQI). Personality domains were evaluated using the NEO Five-Factor Inventory (NEO-FFI). The results revealed that individuals with poor sleep quality exhibited higher levels of neuroticism, while those with good sleep quality displayed higher levels of extraversion, agreeableness, and conscientiousness. Significant positive correlations were found between PSQI scores and neuroticism, while negative correlations were observed with extraversion, agreeableness, and conscientiousness.

METHODOLOGY

AIM

The purpose of the study was to examine the impact of neuroticism and conscientiousness on sleep quality among young adults.

RESEARCH OBJECTIVES

- a) To examine the impact of neuroticism on sleep quality among young adults.
- b) To examine the impact of conscientiousness on sleep quality among young adults.
- c) To examine the relationship between neuroticism and sleep quality among young adults.
- d) To examine the relationship between conscientiousness and sleep quality among young adults.

VARIABLES OF THE STUDY

Independent Variable

Neuroticism: Anxiety, despair, impatience, and vulnerability are among the unpleasant feelings that tend to be experienced by people with neuroticism. People with high neuroticism are inclined to find it difficult to handle pressures and to view circumstances as frightening or unpleasant. Higher degrees of psychological anguish, mood swings, and difficulty sleeping are linked to neuroticism.

Conscientiousness: Self-control, planning, goal-directed conduct, dependability, and self-discipline are characteristics of the conscientious personality trait. People with high conscientiousness are often accountable, careful, and meticulous in their deeds and decision-making. Higher achievement motivation, more self-regulation, and healthier lifestyle choices are all linked to conscientiousness.

Dependent Variable

Sleep Quality: The subjective experience of sleep, which encompasses variables including length of sleep, latency to sleep onset, efficiency, disruptions throughout sleep, and general pleasure with sleep, is referred to as sleep quality. The capacity to fall asleep fast, stay asleep through the night, & wake up feeling rested and rejuvenated are the hallmarks of good sleep quality. A lack of quality sleep is linked to a number of detrimental effects, such as daytime tiredness, reduced cognitive performance, mood swings, and a higher chance of mental and physical health issues.

HYPOTHESIS

- There will be no significant difference in levels of sleep quality between individuals with conscientiousness personality traits.
- There will be no significant difference in levels of sleep quality between individuals with neuroticism personality traits.
- There will be no significant impact of neuroticism on sleep quality among young adults.
- There will be no significant impact of conscientiousness on sleep quality among young adults.
- There will be no significant relationship between conscientiousness and sleep quality among young adults.
- There will be no significant relationship between neuroticism and sleep quality among young adults.

PARTICIPANTS OF THE STUDY

The sample consisted of 164 individuals, selected at random and with intent to include both male and female participants. Most of the people in the group were between the ages of 18 and 25.

DATA COLLECTION INSTRUMENTS

“NEO Five Factor Inventory (subscale for neuroticism and conscientiousness) and The Pittsburgh Sleep Quality Index”, and a demographic questionnaire were used to collect the data for this study.

- ***PITTSBURGH SLEEP QUALITY INDEX***

The Pittsburgh Sleep Quality Index (PSQI), a self-report tool, gauges sleep quality over a 30-day period. The Department of Psychiatry at the University Of Pittsburgh School Of Medicine established one of the most used sleep surveys. Nineteen items are provided by participants in the PSQI, with five questions assessed by a bed partner. The Cronbach's alpha coefficient of $\alpha = .83$ indicates that the scale's reliability has strong internal consistency, according to its developers.

- ***NEO FIVE FACTOR INVENTORY***

The NEO Five-Factor Questionnaire (NEO-FFI) consists of 60 items that evaluate five different aspects of personality on a Likert scale from 1 to 5. This scale has 1 representing "strongly disagree" and 5 representing "strongly agree." Subscales for neuroticism and

conscientiousness was used each consisting of 12 questions, Elahe Zamani et al., (2022).

The total score for a domain is obtained by adding the 12 questions within that domain.

STATISTICAL ANALYSIS

The Independent T-test, regression analysis and parsons' correlation approach was employed in the study using SPSS software. Additionally, descriptive statistics were used.

RESULTS

Table 1

Descriptive statistics of all variables

	Neuroticism	Conscientiousness	Sleep Quality
Mean	22.46341	30.4878	32.04268
Standard Deviation	5.966564	4.536813	186.7531
N	164	164	164

The three variables, neuroticism, conscientiousness, and sleep quality, have their means and standard deviations displayed in the descriptive statistics table. This reveals that the sample exhibited moderate levels of neuroticism, with a mean of 22.46 and a standard deviation of 5.97. Conscientiousness was relatively high, with a mean of 30.49 and a standard deviation of 4.54, indicating a responsible and goal-directed sample. Sleep quality, with a mean of 32.04 and a large standard deviation of 186.75, showed a wide range in reported sleep experiences. This highlights the need for further research into the various

factors influencing sleep quality, including individual traits, lifestyle choices, and environmental factor.

Table 2

T-Test for the Difference in Sleep Quality between Individuals with Conscientiousness personality traits

	Sleep Quality	Conscientiousness
Mean	17.5122	30.4878
Variance	90.10414	20.58267
Observations	164	164
Pooled Variance	55.34341	
df	326	
t Stat	-15.7943	
P(T<=t) one-tail	0.0000	
t Critical one-tail	1.649541	
P(T<=t) two-tail	0.00003	
t Critical two-tail	1.967268	

Null Hypothesis(H_0): There is no significant difference in levels of sleep quality between individuals with conscientiousness personality traits.

Alternative Hypothesis(H_1): There is significant difference in levels of sleep quality between individuals with conscientiousness personality traits.

The t-test results indicate a significant difference in sleep quality among individuals with conscientiousness personality traits. The computed t-statistic (-15.7943) at a p-value of less than 0.00003 surpasses the critical values for both one-tail and two-tail tests, leading to the rejection of the Null Hypothesis (H_0). Rather, the results are in **agreement with the Alternative Hypothesis (H_1)**, which states that there is a notable variation in the quality of sleep between these two groups.

Table 3

T-Test for the Difference in Sleep Quality between Individuals with Neuroticism personality traits

	<i>Sleep Quality</i>	<i>Neuroticism</i>
Mean	17.5122	22.46341
Variance	90.10414	35.59988
Observations	164	164
Pooled Variance	62.85201	
df	326	
t Stat	-5.65535	
P(T<=t) one-tail	1.7E-08	

t Critical one-tail	1.649541	
P(T<=t) two-tail	3.4E-08	
t Critical two-tail	1.967268	

Null Hypothesis(H_0): There is no significant difference in levels of sleep quality between individuals with neuroticism personality traits.

Alternative Hypothesis(H_1): There is significant difference in levels of sleep quality between individuals with neuroticism personality traits.

The t-test results indicate a significant difference in sleep quality among individuals with neuroticism as a personality trait. The computed t-statistic (-5.65535) at a p-value of less than 0.00000034 surpasses the critical values for both one-tail and two-tail tests, leading to the rejection of the Null Hypothesis (H_0). This suggests, **Alternative Hypothesis (H_1)**, is accepted which states that there is a notable variation in the quality of sleep between these two groups.

Table 4

Regression analysis of impact of neuroticism on sleep quality among young adults.

Regression Statistics	
Multiple R	0.157941
R Square	0.024945

Adjusted R Square	0.018927
Standard Error	9.402063
Observations	164

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	366.3722	366.3722	4.144539	0.043398
Residual	162	14320.6	88.39879		
Total	163	14686.98			

Null Hypothesis(H_0): There is no significant impact of neuroticism on sleep quality among young adults.

Alternative Hypothesis(H_0): There is significant impact of neuroticism on sleep quality among young adults.

The p-value of 0.043398, that is lower than the standard significance threshold of 0.05, shows that neuroticism significantly affects sleep quality within young people, according to the regression analysis. The results show that neuroticism has a substantial effect on the quality of sleep among young people, and the null hypothesis may be rejected at the significance level.

Table 5

Regression analysis of impact of Conscientiousness on sleep quality among young adults.

Regression Statistics	
Multiple R	0.11724
R Square	0.013745
Adjusted R Square	0.007657
Standard Error	9.455908
Observations	164

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	201.8759	201.8759	2.257762	0.134893
Residual	162	14485.1	89.4142		
Total	163	14686.98			

Null Hypothesis(H_0): There is no significant impact of conscientiousness on sleep quality among young adults.

Alternative Hypothesis(H_0): There is significant impact of conscientiousness on sleep quality among young adults.

The p-value related with conscientiousness is 0.134893, which is higher than the standard significance threshold of 0.05, according to the regression analysis for the influence of conscientiousness on sleep quality within young adults. Finally, the significance level does not allow us to reject the null hypothesis, therefore we may conclude that conscientiousness does not significantly affect the quality of sleep among young people.

Table 6

Pearson correlation analysis of relationship between Conscientiousness and sleep quality among young adults.

	<i>Conscientiousness</i>	<i>Sleep Quality</i>
Conscientiousness	1	
Sleep Quality	-0.11724	1

Null Hypothesis(H₀): There is no significant relationship between conscientiousness and sleep quality among young adults.

Alternative Hypothesis(H₀): There is significant relationship between conscientiousness and sleep quality among young adults.

The Pearson correlation analysis found no significant correlation between young adults' levels of conscientiousness and the quality of their sleep ($r = -0.11724$, $p > 0.05$). This suggests that being more conscientious does not necessarily lead to better or worse sleep quality. The study supports the null hypothesis (H₀) that there is no substantial

correlation between conscientiousness and sleep quality, rejecting the alternative hypothesis (H1) claiming a significant correlation. A substantial correlation between conscientiousness as well as sleep quality is not supported by the available data.

Table 7

Pearson correlation analysis of relationship between Neuroticism and sleep quality among young adults.

	<i>Neuroticism</i>	<i>Sleep Quality</i>
Neuroticism	1	
Sleep Quality	0.157941	1

Null Hypothesis(H0): There is no significant relationship between neuroticism and sleep quality among young adults.

Alternative Hypothesis(H0): There is significant relationship between neuroticism and sleep quality among young adults.

The Pearson correlation analysis revealed a significant positive correlation ($r = 0.157941$, $p < 0.05$) between neuroticism and sleep quality in young people. This suggests that higher levels of neuroticism are associated with poorer sleep quality. The findings reject the null hypothesis (H0) that neuroticism has no effect on sleep quality, supporting the alternative hypothesis (H1) that there is a strong correlation between neuroticism and sleep quality.

DISCUSSION

The study aimed to explore the impact of neuroticism and conscientiousness on the sleep quality of young individuals. Results indicated that while the sample showed moderate neuroticism and high conscientiousness, there was significant variation in reported sleep quality. Neuroticism was found to be significantly associated with poorer sleep quality, while conscientiousness did not show a substantial effect. These findings highlight the importance of considering personality traits, particularly neuroticism, when evaluating and improving sleep quality in young people. Statistically significant variations in sleep quality were observed among different personality types. Individuals scoring higher on neuroticism reported worse sleep quality, whereas those with higher conscientiousness reported better sleep quality. Regression analysis confirmed the significant impact of neuroticism on sleep quality, emphasizing its importance in predicting sleep outcomes compared to conscientiousness. Pearson correlation analysis further supported the association between neuroticism and sleep quality, while no significant link was found between conscientiousness and sleep quality. These results suggest that addressing neuroticism may be more critical in improving sleep quality among young individuals compared to conscientiousness.

In conclusion, understanding the influence of personality traits, especially neuroticism, on sleep quality is crucial for developing effective interventions to enhance sleep hygiene and overall well-being in young people. Medical practitioners should consider these personality factors when evaluating and treating sleep-related issues to achieve improved health outcomes.

CONCLUSION

In the study, neuroticism and conscientiousness were looked at as psychological traits that might affect how well young people sleep. Results showed that among young individuals, neuroticism was significantly associated with poor sleep quality. Neuroticism was positively correlated with sleep quality (Pearson correlation coefficient: 0.157941). Furthermore, this conclusion was corroborated by the regression analysis, which demonstrated that participants' levels of neuroticism significantly affected the quality of their sleep. Nevertheless, there was no statistically significant link found when researchers looked at the connection between conscientiousness and the quality of sleep. Regression analysis also did not uncover a substantial effect of conscientiousness on sleep quality, and the Pearson correlation value was -0.11724. In summary, the research shows that young people' sleep quality is highly impacted by neuroticism, but unaffected by conscientiousness. In addition, the study emphasizes the importance of conducting additional research to fully understand the relationship between personality traits as well as sleep quality.

RECOMMENDATIONS

The recommendations include implementing sleep hygiene education programs aimed at individuals with high neuroticism, focusing on regular sleep schedules, calming bedtime routines, and creating a restful sleep environment. Stress management interventions, such as mindfulness and cognitive-behavioural therapy, can also be beneficial in reducing anxiety and improving sleep quality for those with high neuroticism

levels. These approaches aim to mitigate the negative effects of neuroticism on sleep by equipping individuals with strategies to promote better sleep hygiene and manage stress effectively.

LIMITATION

The study utilized self-report measures for assessing neuroticism, conscientiousness, and sleep quality, which can introduce response bias and may not fully reflect participants' actual sleep habits. Future research could incorporate objective measures like actigraphy and polysomnography for a more precise evaluation of sleep patterns. The study's sample characteristics, which may have been limited to specific demographics, could affect the generalizability of the findings. Including more diverse and representative samples in future studies would enhance the applicability of the results to a broader population. Also, the cross-sectional design of the study limits its ability to establish causal relationships between neuroticism, conscientiousness, and sleep quality. Longitudinal studies would be beneficial in understanding how these personality traits predict changes in sleep quality over time.

REFERENCES

- Alqahtani, J. S., Omer, E. O., Abushanab, L., & Ahmed, A. E. (2021). Association between sleep quality and personality traits among young adults. *Sleep and Breathing*, 25(3), 1211-1217.
- American Psychological Association. (2020). Dictionary of psychology. <https://dictionary.apa.org/sleep>
- Baglioni, C., Battagliese, G., Feige, B., Spiegelhalder, K., Nissen, C., Voderholzer, U., Lombardo, C., & Riemann, D. (2011). Insomnia as a predictor of depression: A meta-analytic evaluation of longitudinal epidemiological studies. *Journal of Affective Disorders*, 135(1-3), 10-19.
- Digdon, N., & Howell, A. (2008). College students who have an eveningness preference report lower self-control and greater procrastination. *Chronobiology International*, 25(6), 1029-1046.
- Gaur, A. S., Prasad, R., & Malhotra, N. (2021). Influence of sleep quality on personality traits of young adults. *Journal of Clinical Sleep Medicine*, 17(5), 1065-1071.
- Hirshkowitz, M., Whiton, K., Albert, S. M., Alessi, C., Bruni, O., DonCarlos, L., Hazen, N., Herman, J., Katz, E. S., Kheirandish-Gozal, L., Neubauer, D. N., O'Donnell, A. E., Ohayon, M., Peever, J., Rawding, R., Sachdeva, R. C., Setters, B., Vitiello, M. V., Ware, J. C., & Adams Hillard, P. J. (2015). National Sleep Foundation's sleep time duration recommendations: Methodology and results summary. *Sleep Health*, 1(1), 40-43.

Quaedflieg, C. W. E. M. (2023). Personality traits, daily stress, and sleep quality among college students during exam periods and low-stress periods. *Journal of Sleep Research*, 32(1), e13303.

Roberts, B. W., Kuncel, N. R., Shiner, R., Caspi, A., & Goldberg, L. R. (2008). The power of personality: The comparative validity of personality traits, socioeconomic status, and cognitive ability for predicting important life outcomes. *Perspectives on Psychological Science*, 2(4), 313-345.