

Depression, Anxiety, Stress, and Sleep Paralysis: Moderating Role of Personality among University Students of Pakistan

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ABSTRACT: Sleep paralysis, a phenomenon characterized by temporary muscle immobility during the transition between sleep and wakefulness, is often associated with heightened stress, anxiety, and other psychological factors. This present study investigates the relationship between depression, anxiety, stress, and sleep paralysis, considering personality's moderating effects. Data was collected using purposive sampling. A total of 200 students, aged 18 to 26 completed standardized measures including the Depression, Anxiety, and Stress Scale, the Big Five Personality Test, and a subset of the Unusual Sleep Experiences Questionnaire. Results showed that there is a significant relationship between anxiety and sleep paralysis, ($r = .244$, $p < .01$) and stress and sleep paralysis ($r = .161$, $p < .01$). Additionally, agreeableness was found to significantly moderate the relationship between depression, anxiety, stress, and sleep paralysis. Furthermore, chi-square test of independence showed insignificant association between genders and sleep paralysis with χ^2 (3, $N=200$) = 2.137, $p = .544$. This research contributes to the existing literature by providing insights for clinicians and highlight the importance of considering both psychological distress and individual personality differences when examining sleep paralysis among young adults.

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Introduction and Literature Review

Sleep paralysis is a transitory state of dissociation that often happens when an individual is about to sleep or wake up from sleep (Jalal & Hinton, 2015). Sleep paralysis occurs when wakefulness returns, but REM muscle atonia persists, causing temporary immobility. It often includes intruder-type hallucinations, where a threatening presence is perceived, and incubus-type, marked by chest pressure and suffocation. These episodes trigger fear, anxiety, and distress (Denis & Poerio, 2017). A comprehensive systematic review by Sharpless and Barber (2011) found that approximately 7.6% of the general population experiences at least one episode of sleep paralysis during their lifetime. The prevalence is notably higher among students (28.3%) and psychiatric patients (31.9%). Additionally, females tend to experience sleep paralysis more frequently than males (Sharpless & Barber, 2011). Sleep paralysis prevalence varies, but some people experience sleep paralysis between 8% and 50% in their lives, and around 5% have regular episodes (Avidan & Zee, 2011).

Depression is a persistent sadness with no interest or pleasure in previously fulfilling or gratifying activities that may also disrupt sleep and eating patterns; anxiety is a feeling of worry, anxious thinking, and somatic changes involving elevated blood pressure that arises from general and vague stimuli considered as being a threat in the future; stress involves psychological, physiological, and behavioral responses when an individual cannot maintain balance between the demands and their capacity to fulfill those requirements (Dias et al., 2013; APA, 2022).

Similarly, personality is a person's unique accommodations to life, which involves how an individual thinks, feels, and behaves. According to Allport, personality is the “dynamic organization that involves physical and psychological systems in an individual that establish an individual's uniqueness and his adjustment in the environment” (Allport, 1937).

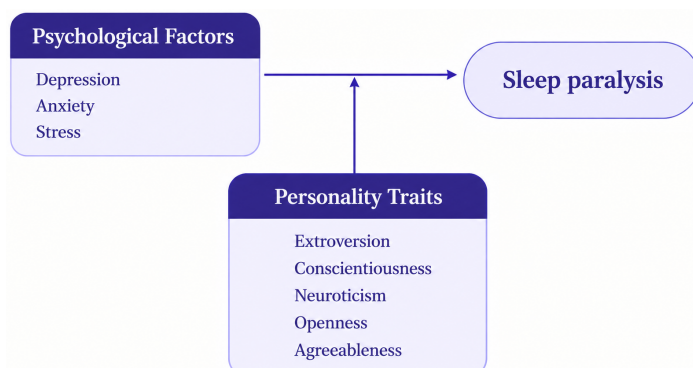
The Diathesis-Stress Model suggests that an individual's predisposition to stress, anxiety, or depression, potentially influenced by personality traits, can impact their likelihood of experiencing sleep paralysis. These predispositions, in combination with specific personality characteristics, may either strengthen or weaken the relationship between psychological distress (depression, anxiety, and stress) and sleep paralysis. Therefore, individuals with certain personality traits and elevated stress, anxiety, or depression levels may have a higher probability of experiencing sleep paralysis (Monroe & Simons, 1991).

Studies suggest that sleep paralysis and anxiety, depression, and higher stress levels have a positive correlation (Ikhlq et al., 2021; Sudais, 2022; Benham, 2022; Muzammil et al., 2023; Aledili et al., 2021). Sleep Paralysis was discovered to affect women more often than men, along with some personality variables that contribute to the characteristics of sleep paralysis (Colombo et al., 2024). Another study concluded that individuals experiencing sleep paralysis are inclined to less sleep and showed an increased score for the Openness to experience trait. (Hengstebeck, 2011). Another study found a relation between sleep paralysis and anxiety (Nair et al., 2013). Moreover, individuals with self-reported anxiety disorders had more frequent sleep paralysis episodes than those without these disorders in the previous year (Paradis et al., 2009).

A systematic review and meta-analysis from 35 different studies across 16 countries. Researchers revealed that gender was not a risk factor for sleep paralysis episodes. It can occur both in men and women (Sharpless, 2011). Another recent systematic review and meta-analysis from 76 studies across 25 countries reported no association between sleep paralysis frequency and gender, reporting that 30% of the population suffered from sleep paralysis, especially students (Hefnawy et al., 2024). Literature reported a high prevalence of sleep paralysis phenomena, i.e., 47.2% among medical students in Pakistan. Students associated it with academic stress, routine stress, and anxiety (Ijaz et al., 2023).

Framework

The following framework emphasized the association between mental health variables, individual personality characteristics, and the occurrence of sleep paralysis, aiming to elucidate their interplay and potential causal pathways.



Rationale

In light of the above information, the current study explores the relationship between depression, anxiety, and stress and sleep paralysis and aims to understand how these variables impact sleep paralysis among adults residing in Islamabad/Rawalpindi. This study further investigates the different personality traits that might play a moderating role in the occurrence of sleep paralysis. The uniqueness of this study involves the combination of variables to understand the relationship between depression, anxiety, stress, and sleep paralysis, while also exploring the moderating role of personality traits (extroversion, agreeableness, openness, conscientiousness). Understanding sleep paralysis within a broader psychological framework is significant because its occurrence may reflect the interplay between sleep-related phenomena, psychological distress, and individual differences in personality. Although anxiety and stress have been implicated in the experience of sleep paralysis, examining these factors alongside personality characteristics provides a more nuanced account of individual variability in susceptibility to such experiences.

Objectives

The study is based on the following objectives:

1. To explore the relationship between depression, anxiety, stress, and sleep paralysis among university students of Pakistan.
2. To explore the role of personality traits (extroversion, agreeableness, openness, conscientiousness, and neuroticism) in the relationship between depression, anxiety, stress, and sleep paralysis among university students of Pakistan.
3. To explore the gender differences in sleep paralysis among university students of Pakistan.

Hypotheses

1. There is a significant relationship between depression, anxiety, stress, and sleep paralysis among university students of Pakistan.
2. Higher levels of depression, anxiety, and stress are more likely to predict sleep paralysis among university students of Pakistan.
3. There is a moderating role of personality traits (extroversion, agreeableness, openness, conscientiousness, and neuroticism) in depression, anxiety, stress, and sleep paralysis among university students of Pakistan.
4. There is a significant difference in sleep paralysis occurrences between males and females with depression, anxiety, and stress among university students of Pakistan.

Method

Research Design

The study adopted a cross-sectional correlational research design to assess the relationship between various variables: depression, anxiety, stress, sleep paralysis, and personality traits. This design was chosen as it aimed to target a specific population at a single point in time and predict correlations among these factors. Data were gathered from a self-report questionnaire.

Sample Participants

The sample participants consisted of university students both male and female. The sample size is 200. A purposive convenience sampling technique was used with university students who experienced sleep paralysis. The participants' minimum qualification is intermediate. The sample excluded all participants under 18 years of age. It also excluded participants with any mental health issues, psychiatric issues, those who worked, and those who were on any medications for sleep problems.

Instruments

Demographic Sheets: Demographic information included age, gender, marital status, education, employment, and medical history.

The Big Five Personality Test (Goldberg, 1999): Big Five Personality Test is a 50-item scale that measures different personality traits, including Extroversion, Agreeableness, Openness to experience, Conscientiousness, and Neuroticism. Each personality trait has 10 items. Extraversion, Agreeableness, Conscientiousness, and Openness show moderate Cronbach's alpha values ranging between 0.6 and 0.8.

Unusual Sleep Experiences Questionnaire (Paradis et al., 2009): This questionnaire was developed by Cheryl Paradis and his colleagues in 2009. USEQ is a 43-item scale that measures the age of onset of an individual's first experience, its frequency, and duration of the experience, and the associated happenings of sleep paralysis. Intensity of subjective distress, physical symptoms, and cognitive perceptions associated with sleep paralysis and Sleep paralysis experiences. Cronbach's alpha values typically exceeded 0.70. The scale was used to screen whether a person experiences sleep paralysis or not.

Depression Anxiety Stress Scale (Lovibond et al., 1995): This scale was developed by Lovibond and his colleagues in 1995. It consists of 21 items that contain depression, anxiety, and stress as three self-report scales that consist of 7 items each. Internal reliability and concurrent validity are in acceptable to outstanding ranges. High internal consistency reliability (Cronbach's alpha values > 0.70).

Procedure

After obtaining permission from the relevant authorities, university students were approached. Students were briefed about the study. With the students' consent, data were collected. Participants were encouraged to provide their honest responses and were appreciated for their participation. The data gathered from participants were examined using Statistical Package for the Social Sciences (SPSS) software for Windows version 25. Correlation and regression analyses were run between the variables, i.e., depression, Anxiety, stress, and moderation analysis for personality. Chi-square analysis was used to compare experiences of Sleep Paralysis between two groups, males and females. A p-value less than 0.05 was regarded as statistically significant.

Results

The current study examined the relationship between Depression, Anxiety, stress, and Sleep Paralysis and also assessed the role of personality traits between depression, stress, anxiety, and Sleep Paralysis. Results yielded from the aforementioned have been shown in the following tables.

Table 1

Frequency Distribution for Demographic Variables (N=200)

Variables	Frequency	Percentages
Gender		
Male	101	50.5
Female	99	49.5
Age		
18-20	90	45
21-23	88	44
24-26	22	11
Marital Status		
single	189	94.5
married	11	5.5

Note. N = 200

Table 1 demonstrates that there are 50.5% males and 49.5% females. There are different age ranges, i.e., 18-20 are 45%, 21-23 are 44%, and 24-26 are 11%. There are 94.5% single and 5.5% married.

Table 2

Spearman's Correlation among Depression, Anxiety, Stress, and Sleep Paralysis

		1	2	3	4
1	Sleep Paralysis	—			
2	Depression	0.50	—		
3	Anxiety	.244**	.634**	—	
4	Stress	.161*	.655**	.655**	—

Note. N=200. * $p < .05$; ** $p < .01$

Spearman's rank-order correlations were conducted to examine the associations among sleep paralysis, depression, anxiety, and stress. Sleep paralysis was not significantly correlated with depression, $r = .050$, $p = .480$. However, sleep paralysis was significantly and positively correlated with anxiety, $\rho = .244$, $p < .001$, and stress, $\rho = .161$, $p = .023$, indicating that higher levels of anxiety and stress were associated with higher levels of sleep paralysis. Among the psychological variables, depression was significantly and positively correlated with anxiety, $\rho = .634$, $p < .001$, and stress, $\rho = .714$, $p < .001$. Anxiety was also significantly and positively correlated with stress, $\rho = .655$, $p < .001$. Overall, the results indicate significant positive associations among anxiety, stress, and sleep paralysis, whereas depression was not significantly associated with sleep paralysis.

Table 3

Multiple Linear Regression Analysis between Sleep Paralysis and Depression, Anxiety, Stress

Variables	B	β	SE	t	p
Constant	0.237		0.09	2.48	.01
Depression	-0.029	-.246	0.01	-2.35	.01
Anxiety	0.035	.276	0.01	2.86	.00
Stress	0.022	.176	0.01	1.625	.10

Sleep paralysis= dependent variable

Table 3 shows multiple linear regression analysis conducted to examine whether depression, anxiety, and stress significantly predicted sleep paralysis. The overall regression model was statistically significant, $F(3, 196) = 5.909$, $p = .001$, indicating that the predictors collectively significantly predicted sleep paralysis. The model explained 8.3% of the variance in sleep paralysis ($R^2 = .083$), with an adjusted R^2 of .069. When the predictors were examined individually, depression was a significant negative predictor of sleep paralysis, $B = -0.029$, $\beta = -.246$, $t = -2.356$, $p = .019$. Anxiety was a significant positive predictor of sleep paralysis, $B = 0.035$, $\beta = .276$, $t = 2.860$, $p = .005$. In contrast, stress was not a significant predictor of sleep paralysis, $B = 0.022$, $\beta = .176$, $t = 1.625$, $p = .106$. Thus, after controlling for the other predictors in the model, depression and anxiety significantly predicted sleep paralysis, whereas stress did not.

Table 4*Moderating Role of Personality in the Association Between Depression, Anxiety, and Stress and Sleep Paralysis (N=200)*

Predictor Variable	Moderator Variable	β	SE	t	p	95% CI Lower	95% CI Upper
DAS	Agreeableness				0.07	-0.00	0.00
Constant		-0.82	0.59	-1.4	0.16	-1.99	0.33
DAS		0.02	0.00	2.2	0.02	0.00	0.03
Agreeableness		0.03	0.01	1.9	0.05	-0.00	0.06
DAS	Extroversion				0.59	-0.00	0.00
Constant		0.19	0.43	0.4	0.66	-0.67	1.05
DAS		0.00	0.00	1.0	0.30	-0.00	0.02
Extroversion		0.00	0.01	0.2	0.79	-0.02	0.03
DAS	Conscientiousness				0.33	-0.00	0.00
Constant		0.13	0.54	0.25	0.80	-0.93	1.20
DAS		0.01	0.00	1.3	0.18	-0.00	0.02
Conscientiousness		0.00	0.01	0.31	0.75	-0.02	0.03
DAS	Neuroticism				0.86	-0.00	0.00
Constant		0.25	0.43	0.58	0.56	-0.59	1.10
DAS		0.00	0.00	0.78	0.43	-0.00	0.01
Neurotic		0.00	0.01	0.11	0.91	-0.02	0.03
DAS	Openness				0.91	-0.00	0.00
Constant		0.15	0.62	0.25	0.79	-1.06	1.38
DAS		0.00	0.00	0.53	0.59	-0.01	0.02
Openness		0.00	0.01	0.21	0.82	-0.03	0.04

Note. B = Unstandardized regression coefficient; SE = Standard error; CI = Confidence interval.

A series of moderation analyses were conducted to examine whether various personality traits moderate the relationship between depression, anxiety, and stress and sleep paralysis. The results revealed that agreeableness marginally moderated this relationship ($R^2 = 0.04$, $F(3, 195) = 3.22$, $p = 0.02$). The interaction term DAS with agreeableness approached significance ($p = 0.07$), suggesting that the effect of Depression Anxiety Stress on Sleep Paralysis is stronger at lower levels of agreeableness and weaker at higher levels. In contrast, extroversion did not significantly moderate the relationship ($R^2 = 0.03$, $F(3, 195) = 2.120$, $p = 0.09$), with a non-significant interaction term ($p = 0.59$). Similarly, conscientiousness was not a significant moderator ($R^2 = 0.04$, $F(3, 195) = 2.70$, $p = 0.04$), with the interaction term ($p = 0.33$). Neuroticism also did not significantly moderate the Depression, Anxiety, Stress, and Sleep Paralysis relationship ($R^2 = 0.02$, $F(3, 195) = 1.95$, $p = 0.12$), with a non-significant interaction term ($p = 0.86$). Lastly, openness was not a significant moderator ($R^2 = 0.02$, $F(3, 195) = 1.97$, $p = 0.11$), nor was the interaction term ($p = 0.91$). These results indicate that none of the personality traits significantly moderated the Depression, Anxiety, Stress, and Sleep Paralysis relationship, except for a marginal effect of agreeableness.

Chi-square Analysis

Table 7*Chi-square Analysis between Gender and Sleep Paralysis*

		Male	Female	$\chi^2(1)$
Sleep paralysis	No	53	49	2.137a
	Yes	48	50	

Table 7 reveals that the chi-square test of independence showed an insignificant association between gender and sleep paralysis with $\chi^2(3, N=200) = 2.137, p=.544$.

Discussion

The aim of this study was to explore the relationship between depression, anxiety, stress, and sleep paralysis among university students in Rawalpindi and Islamabad. The frequency distribution for demographics demonstrated different age groups of students in the university.

The correlation analysis showed a significant positive relationship between anxiety and sleep paralysis. These results corroborate with the study conducted by Jalal and his colleagues (2015), which suggested that experiencing hypnopompic/hypnogogic hallucinations during sleep paralysis, even after controlling for negative affect, was significantly related to trait anxiety symptoms. The result also claimed that there exists a positive association between stress and sleep paralysis, which means people with stress have higher chances of experiencing sleep paralysis (Otto et al., 2006; Benham, 2022). However, the present study also suggested that there exists a negative relationship between depression and sleep paralysis. Previous research has produced mixed findings regarding the relationship between depression and sleep paralysis. While some studies have reported no significant association between depressive disorders and sleep paralysis (Otto et al., 2006), other research has found a positive association between depressive symptoms and sleep paralysis (Szklo-Coxe et al., 2007). Regression analysis suggested anxiety and stress positively predict sleep paralysis, which means students with higher levels of stress and anxiety have experienced more sleep paralysis (Denis et al., 2018; Ramsawh et al., 2008). Furthermore, the relationship between depression, anxiety, stress, and sleep paralysis is moderated by agreeableness, in which 4.7% of the variance in depression, anxiety, stress, and sleep paralysis is explained.

Chi-square analysis showed that the difference in experiences of sleep paralysis between males and females was not significant, suggesting sleep paralysis can occur in both male and female students (Spanos et al., 1995; Sharpless, 2016).

Implications and Limitations

This study would help mental health professionals enhance current available approaches that can address stress and anxiety in managing sleep paralysis and design early preventive measures to reduce stress and anxiety. Additionally, the study may not have addressed confounding or extraneous factors that haven't been controlled, including past traumas, which have shown significant association in the literature. Among these, other factors include physical diseases, substance use, genetic influences, and anomalous beliefs.

Conclusion

In the current study, statistically significant correlations are found between stress, anxiety, and sleep paralysis. Regression findings reveal that anxiety and stress positively predict sleep paralysis. In this study, it was also found that the agreeableness personality trait moderates the relationship between depression, anxiety, stress, and sleep paralysis, which means that the relationship between depression, anxiety, stress, and sleep paralysis is stronger in individuals with an agreeable personality and might be weaker for individuals with other personality traits (i.e., extroversion, openness, neuroticism, and conscientiousness).

References

- Aledili, F. J., Alsharidah, A. S., Alhammadi, A. M., Alenezi, A. M., Alshammari, M. A., & Alrashed, A. A. (2021). Perceived awareness of sleep paralysis phenomenon (Old Hag Syndrome) and its most common risk factors among people from Al-Ahsa, Saudi Arabia. *Saudi Medical Journal*, 42(12), 1365–1372. <https://doi.org/10.15537/smj.2021.42.12.20210641>
- Allport, G. W. (1937). *Personality: A psychological interpretation*. Henry Holt.
- American Psychiatric Association. (2022). *Diagnostic and statistical manual of mental disorders* (5th ed., text rev.; DSM-5-TR). American Psychiatric Association Publishing.
- Avidan, A. Y., & Zee, P. C. (Eds.). (2011). *Handbook of sleep medicine* (2nd ed.). Lippincott Williams & Wilkins.
- Benham, G. (2022). Sleep paralysis in college students. *Journal of American College Health*, 70(5), 1286–1291. <https://doi.org/10.1080/07448481.2020.1799807>
- Colombo, C., Sarlo, M., & Cellini, N. (2024). Lifetime prevalence and characteristics of sleep paralysis in Italian university students population. *Sleep Medicine*, 122, 106–112. <https://doi.org/10.1016/j.sleep.2024.08.013>
- Denis, D., & Poerio, G. L. (2017). Terror and bliss? Commonalities and distinctions between sleep paralysis, lucid dreaming, and their associations with waking life experiences. *Journal of Sleep Research*, 26(1), 38–47. <https://doi.org/10.1111/jsr.12441>
- Denis, D., French, C. C., & Gregory, A. M. (2018). A systematic review of variables associated with sleep paralysis. *Sleep Medicine Reviews*, 38, 141–157. <https://doi.org/10.1016/j.smrv.2017.05.005>
- Dias, B. G., Banerjee, S. B., Goodman, J. V., & Ressler, K. J. (2013). Towards new approaches to disorders of fear and anxiety. *Current Psychiatry Reports*, 15(10), Article 370. <https://doi.org/10.1007/s11920-013-0370-2>
- Goldberg, L. R. (1999). A broad-bandwidth, public-domain, personality inventory measuring the lower-level facets of several five-factor models. In I. Mervielde, I. Deary, F. De Fruyt, & F. Ostendorf (Eds.), *Personality psychology in Europe* (Vol. 7, pp. 7–28). Tilburg University Press.
- Hefnawy, M. T., Amer, B. E., Amer, S. A., Moghib, K., Khlidj, Y., Elfakharany, B., Mouffokes, A., Alazzeh, Z. J., Soni, N. P., Wael, M., & Elsayed, M. E. (2024). Prevalence and clinical characteristics of sleeping paralysis: A systematic review and meta-analysis. *Cureus*, 16(1), e53212. <https://doi.org/10.7759/cureus.53212>
- Hengstebeck, N. D. (2011). The occurrence of sleep paralysis in a college sample. *Creating Knowledge: The LA&S Student Research Journal*, 4, 66–71.
- Ijaz, A., Saeed, M. M., Aftab, R. K., Altaf, B., Ahmad, A., & Ali, F. (2021). Prevalence of sleep paralysis in the medical students of a local medical college. *MedERA – Journal of CMH LMC and IOD*, 3(2), 4–7. <https://doi.org/10.61982/medera.v3i2.63>
- Ikhlaq, A., Bint E Riaz, H., Bashir, I., Ijaz, F., & Aftab, R. K. (2021). Association of sleep paralysis with PTSD symptoms, pathological worry and perceived stress. *International Journal of Pulmonary & Respiratory Sciences*, 4(5), 96–99. <https://doi.org/10.19080/IJOPRS.2021.04.555648>
- Jalal, B., & Hinton, D. E. (2015). Sleep paralysis among Egyptian college students: Association with anxiety symptoms (PTSD, trait anxiety, pathological worry). *The Journal of Nervous and Mental Disease*, 203(11), 871–875. <https://doi.org/10.1097/NMD.0000000000000382>
- Lovibond, S. H., & Lovibond, P. F. (1995). *Depression Anxiety Stress Scales (DASS--21, DASS--42)* [Database record]. APA PsycTests. <https://doi.org/10.1037/t01004-000>
- Monroe, S. M., & Simons, A. D. (1991). Diathesis-stress theories in the context of life stress research: Implications for the depressive disorders. *Psychological Bulletin*, 110(3), 406–425. <https://doi.org/10.1037/0033-2909.110.3.406>

- Muzammil, M. A., Syed, A.-R., Farooq, M. H., Ahmed, S., Qazi, M. H., Patel, T., Khatri, M., Zaman, M. U., Nadeem, T., Tanveer, F., Kumar, U., Varrassi, G., & Shah, A. A. (2023). Frequency and factors of sleep paralysis among medical students of Karachi. *Cureus*, 15(7), e41722. <https://doi.org/10.7759/cureus.41722>
- Nair, D., et al. (2013). Isolated sleep paralysis and generalized anxiety disorder: A case report and review. *Case Reports in Psychiatry*, 2013, Article 987612. <https://doi.org/10.1155/2013/987612>
- Otto, M. W., Simon, N. M., Powers, M. B., Hinton, D., Zalta, A. K., & Pollack, M. H. (2006). Rates of isolated sleep paralysis in outpatients with anxiety disorders. *Journal of Anxiety Disorders*, 20(5), 687–693. <https://doi.org/10.1016/j.janxdis.2005.07.002>
- Paradis, C., Friedman, S., Hinton, D. E., McNally, R. J., Solomon, L. Z., & Lyons, K. A. (2009). The assessment of the phenomenology of sleep paralysis: The Unusual Sleep Experiences Questionnaire (USEQ). *CNS Neuroscience & Therapeutics*, 15(3), 220–226. <https://doi.org/10.1111/j.1755-5949.2009.00098.x>
- Ramsawh, H. J., Raffa, S. D., White, K. S., & Barlow, D. H. (2008). Risk factors for isolated sleep paralysis in an African American sample: A preliminary study. *Behavior Therapy*, 39(2), 178–184. <https://doi.org/10.1016/j.beth.2007.11.002>
- Sharpless, B. A., & Barber, J. P. (2011). Lifetime prevalence rates of sleep paralysis: A systematic review. *Sleep Medicine Reviews*, 15(5), 311–315. <https://doi.org/10.1016/j.smr.2011.01.007>
- Sharpless, B. A. (2016). A clinician's guide to recurrent isolated sleep paralysis. *Sleep Medicine Reviews*, 26, 94–101. <https://doi.org/10.1016/j.smr.2015.05.001>
- Spanos, N. P., McNulty, S. A., DuBreuil, S. C., Pires, M., & Burgess, M. F. (1995). The frequency and correlates of sleep paralysis in a university sample. *Sleep*, 18(7), 536–541. <https://doi.org/10.1093/sleep/18.7.536>
- Sudais, M., Saddar, A., & Khalid, M. A. (2022). Effects of sleep paralysis on human psychology. *Journal of Forensic Psychology*, 7(1), 203. <https://doi.org/10.35248/2475-319X.22.7.203>
- Szklo-Coxe, M., Young, T., Finn, L., & Mignot, E. (2007). Depression: Relationships to sleep paralysis and other sleep disturbances in a community sample. *Journal of Sleep Research*, 16(3), 297–312. <https://doi.org/10.1111/j.1365-2869.2007.00600.x>