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# The Effect of Stress on Sleep among Adulthood

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## **Abstract**

This research study investigates the intricate relationship between stress and sleep disturbances among adults. Sleep is a fundamental aspect of human well-being, and its disruption can have profound effects on physical and mental health. Stress, a prevalent facet of modern life, has been linked to sleep problems, but the specific mechanisms and their impact on different age groups within adulthood remain less explored. Tools used for this research are the Perceived Stress Scale (PSS) and Sleep Quality Scale (SQS). There is a negative correlation between sleep and stress was proved to be significant. The results revealed a significant correlation between stress levels and sleep disturbances, with higher stress levels consistently associated with poorer sleep quality.

Keywords: stress, sleep, adulthood

## Introduction:

# Adulthood:

Adulthood refers to the stage of life when an individual has reached physical and psychological maturity, typically characterized by the assumption of adult roles and responsibilities. While the specific age at which someone is considered an adult can vary across cultures and legal systems, it is generally associated with the attainment of legal age, often marked by 18 or 21 years in many societies. Physical and biological markers of adulthood include the completion of puberty and the attainment of full physical growth. Psychologically, adulthood is often marked by increased independence, self-reliance, and the ability to make decisions and take responsibility for one's actions. The transition to adulthood is an important period in life that links development in childhood and adolescence with development in adulthood (McLeod and Almazan, 2003; Settersten, 2007). In the United States, the young adult period begins for most with high school graduation around age 18 and can last into the late 20s and early 30s. How young adults move from ages 18 to 30 has potentially important implications for health, well-being, and quality of life in later adulthood (Arnett, 2000; George, 1993; Hogan and Astone, 1986; Macmillan and Eliason, 2003; Shanahan, 2000). ccc However, transition periods also can function as turning points, providing opportunities for change from negative to more positive life pathways, but

also the reverse, interrupting and disrupting healthy trajectories (Elder, 1985, 1998; Feinstein and Bynner, 2004; Maughan and Rutter, 1998; Nagin et al, 2003; Rutter, 1996; Schulenberg and Maggs, 2002; Schulenberg et al., 2003; Wheaton, 1990).

# Stress:

Stress is a common part of life for many adults. Emerging adulthood is a critical period of life that entails many life transitions in living arrangements, relationships, education, and employment, which can generate stress and psychological distress in the emerging adult. The important changes of this period generated stability uncertainty and a significant mental health risk. Epidemiological studies in the USA show that the 12-month prevalence of any psychiatric disorder is greater than 40% in people aged 18-29 years, and is higher in people of any age range, especially for mood disorders, anxiety disorders, and substance misuse. It has been observed that, in the USA, the rates of major depressive episodes in the last year among people aged 18-25 years increased from 8.1% to 13.2% between 2005-2017, and serious psychological distress in the last month increased among young adults ages 18 to 25 between 2008 and 2017, which is a period increase larger among women than among men. Mood disorders and anxiety disorders were also the most prevalent psychiatric disorders in people aged 20-34 years in Japan. Further, according to the WHO World Mental Health International College Student project, 31.4% of firstyear students in 19 colleges across 8 countries (Australia, Belgium, Germany, Mexico, Northern Ireland, South Africa, Spain, United States) screened positive for at least 1 common DSM-IV anxiety, mood, or substance disorder in the last 12 months. Although not all emerging adults experience difficulties during the transitions typical of this stage of life, life transitions can generate distress for emerging adults, and the distress accompanying such transitions poses a considerable threat to the well-being of emerging adults. Psychological distress is also an important mental health problem among university students and is highly associated with suicidal behaviour, which is more frequent in female than in male university students. Emerging adulthood involves major transitions in social roles and high levels of stress, which may affect health in later life. Stress is considered one of the most impactful psychological phenomena regarding its consequences for mental and physical health, and distress has been regarded as a maladaptive internal response to stressors. (Stress and Psychological Distress in Emerging Adulthood: A Gender Analysis- M. Pilar Matud, Amelia Diaz, Juan Manuel Bethencourt and Ignacio Ibanez 2020)

# Sleep:

Sleep is a vital physiological process for overall health. It is divided into REM (rapid eye movement) and non-REM stages. Adults typically need 7-9 hours of sleep per night. Lack of sleep can impact cognitive function, mood, and physical health. Establishing a consistent sleep routine and creating a conducive sleep environment are important for quality sleep. Sleep is crucial for memory consolidation, immune function, and emotional well-being.

There is a strong bidirectional relationship between sleep and mental health. Poor sleep can contribute to mental health issues, and mental health problems can lead to sleep disturbances (Alvaro et al., 2013). Sleep deprivation can have adverse effects on cognitive function, mood, and physical health (Walker, 2008).

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# Significance of the study:

Sleep disturbances caused by stress can have a detrimental effect on physical and mental health. Chronic sleep problems are associated with an increased risk of various health conditions, including cardiovascular diseases, diabetes, and mental health disorders. Sleep is so crucial that even slight sleep deprivation or poor sleep can affect memory, judgment and mood. In addition to feelings of listlessness, chronic sleep deprivation can contribute to health problems, from obesity and high blood pressure to safety risks while driving (American Psychological Association). Stress and sleep are closely linked. Stress can adversely affect sleep quality and duration, while insufficient sleep can increase stress levels. Both stress and a lack of sleep can lead to lasting physical and mental health problems. Jon Johnson (2018). Stress can create a vicious cycle of sleep disturbances. High-stress levels lead to poor sleep, and poor sleep can exacerbate stress, creating a self-perpetuating problem. Mind Well Leeds. (2023, October 6). Stress often impacts sleep quality and duration. Stress and a lack of sleep can both have a severe impact on physical and mental health. Experts recommend that people aim for 7–9 hours of sleep a night, depending on their age and other factors. Productivity and Safety While work schedules and stress can affect sleep, the opposite is true as well. Sleep deprivation can leave you feeling tired, less creative, and make it more difficult to stay focused on important projects. Sacrificing sleep for work, then working more to make up for lost productivity, can become an exhausting cycle. Rob Newsom, Heather Wright, Jon Johnson (2018). Sleep-related issues due to stress can result in increased healthcare costs, absenteeism, and decreased work performance, impacting the economy. The findings of this study suggest that insufficient sleep can result in large economic costs in terms of lost GDP and lower labor productivity. Marco Hafner, Martin Stepanek. Jirka Taylor, Wendy M. Troxel. And Christian van Stolk (2017)

### Statement of the Problem:

To examine how stress affects sleep disturbances in adulthood.

# Objective of the study:

This study aims to investigate the long-term relationship between stress and sleep disturbances among adults.

### **Hypothesis:**

There is a negative correlation between sleep and stress.

# **Sampling:**

To investigate the relationship between stress and sleep disturbances, we utilized a random sampling method to select a representative sample of participants from the target population. The target population for this study comprised adults aged 18 to 65 living in urban and rural areas of Maharashtra. By adopting this random sampling approach, we minimized selection bias and aimed to create a sample that accurately represents the diversity of the adult population in urban areas and rural areas of Maharashtra. We believe this methodology will enable us to make generalizable conclusions about the relationship between stress and sleep disturbances in the broader population of adults in this region. Random sampling ensures that our findings are less likely to be influenced

by confounding factors related to the selection process, allowing for more conclusions regarding the impact of stress on sleep disturbances.

#### Tools:

1. Stress Assessment: Stress levels were assessed using a standardized psychological scale, including the Perceived Stress Scale (PSS)

The Perceived Stress Scale (PSS) is a classic stress assessment instrument. The tool, while originally developed in 1983, remains a popular choice for helping us understand how different situations affect our feelings and our perceived stress. The questions in this scale ask about your feelings and thoughts during the last month. In each case, you will be asked to indicate how often you felt or thought a certain way. Although some of the questions are similar, there are differences between them and you should treat each one as a separate question. The best approach is to answer fairly quickly.

2. Sleep Disturbances Assessment: Sleep disturbances were evaluated using a validated sleep questionnaire, such as the sleep quality scale (SQS).

An initial psychometric evaluation conducted by Yi and colleagues found an internal consistency of 92 and a test-retest reliability of 81. The SQS is strongly correlated with results obtained on the Pittsburgh Sleep Quality Index. Scores achieved by the insomnia sample were significantly higher than those of controls, indicating good construct validity.

# **Descriptive statistics**

Table 1:- Descriptive Statistics

	Stress	sleep
Valid	67	67
Missing	40	40
Mean	18.403	38.612
Std. Deviation	4.008	8.711
Shapiro-Wilk	0.976	0.969
P-value of Shapiro-Wilk	0.228	0.098
Minimum	6.000	20.000
Maximum	28.000	64.000

Correlation

Table 1 shows the mean score and standard deviations of stress and sleep. The mean score of stress is 18.403 Whereas sleep is 38.612. The standard deviation of stress is 4.008 and sleep is 8.711. The above chart shows the P- P-value of the Shapiro-Wilk stress variable on the Shapiro-Wilk test of distribution of normality. According to the results, P- the value of stress is 0.228, and P value of Shapiro -Wilk of sleep is 0.098. The minimum score on stress is 6, which is closer to the lower end of a low occupational stress level according to the scoring of the test. Also, the minimum score of sleep on the scale is 20, and the maximum score is 64. For "stress," the score

is 0.976. For "sleep," the score is 0.969. Both of these scores are relatively close to 1, which suggests that the data for both "stress" and "sleep" may be approximately normally distributed. However, it's important to note that the interpretation of these scores can be influenced by the sample size. Small sample sizes may yield less reliable results, so it's essential to consider the context of your data and the specific research question you're addressing.

A "valid score" is a data point or observation that is complete, accurate, and relevant to the analysis at hand. Valid scores are those that have been collected and recorded properly, without errors or omissions. They are essential for conducting meaningful statistical analyses and drawing accurate conclusions about a dataset. Here a valid score of stress and sleep is 67.

A "missing score" refers to a data point that is not available or is incomplete in the dataset. Missing scores can occur for various reasons, such as non-responses in surveys, data entry errors, or the absence of data for a particular variable in some observations. Dealing with missing data is an important aspect of data analysis, and statisticians employ various techniques to handle missing scores, including imputation methods to estimate or fill in missing values. Here missing score of stress and sleep is 40.

The Pearson product-moment correlation coefficient (Pearson's correlation, for short) is a measure of the strength and direction of association that exists between two variables measured on at least an interval scale. The correlation coefficient can take values between -1 through 0 to +1. The sign + or – of the correlation affects its interpretation such that when the correlation is positive (r>0), as the value of one variable increases, so does the other. If the correlation is negative (r<0), as the value of one variable increases, the other decreases.

Table 2:- Pearson Product Moment Correlation of stress and sleep

# 13CR Pearson's Correlations Variable Stress sleep 1. Stress Pearson's r p-value 2. sleep Pearson's r 0.475 \* < .001 value \* p < .05, \*\* p < .01, \*\*\* p < .001

Table 2 shows that there is a significant negative correlation between Stress and Sleep as the Pearson correlation value is r 0.475 with the significance value of VS-MPR which indicates that the correlation is significant at the 0.001 level. From the above discussion, it was confirmed that the hypothesis that there is a negative correlation between stress and sleep was accepted. In support of the above result, the following literature can be taken into consideration.

Hence, the above hypothesis that there is a negative correlation between stress and sleep is accepted. Considering the stress factor among adults, it is obvious that more stressed people get less sleep compared to low-stress people. The reason is that stress and sleep are negatively correlated. Also, his/her abilities and coping strategies

may reduce stress and improve sleep quality., On the other hand, those who don't know coping strategies can't get enough sleep. Stress effects on sleep.

Stress and anxiety often lead to insomnia and sleep problems. Insomnia symptoms may begin to dissipate once the stressful situation ends and the stress subsides. However, some people fall into a cyclical pattern of sleep loss and daytime anxiety that can contribute to stress. Suni, E., & Suni, E. (2023, October 20).

# **Conclusion:**

The conducted research hypothesis based on which the tests were performed and the results were obtained. With a weak correlation value, a significant negative correlation was observed between stress and sleep.

### Limitation:

- 1)The sample collected for the research study consisted of a low number of participants. The number of female participants was considerably higher than that of the male counterparts, which may have affected the variables under study.
- 2)Geographical limitations were faced during the data collection phase of the research. As a result, a limited number of resources were attempted to be utilized to collect Data.
- 3)An online mode of data collection was implemented through a Google form. Although it helped for a greater reach to the population, many of the members of the population either ignored it considering the study as not important; causing a lesser number of people submitting the responses. Similarly, for those who have submitted their response, instances of expectancy bias may have occurred on the participant's end.

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