The International Journal of Indian Psychology
ISSN 2348-5396 (Online) | ISSN: 2349-3429 (Print)
Volume 12, Issue 2, April- June, 2024
DIP: 18.01.451.20241202, DOI: 10.25215/1202.451
https://www.ijip.in

Research Paper

Effect of Sleep Quality on General Health and Quality of Life

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ABSTRACT

Sleep quality is a critical determinant of overall health and well-being, with profound implications for physical, emotional, and cognitive functioning. This abstract explores the multifaceted impact of sleep quality on general health outcomes and quality of life. The review synthesizes empirical evidence from diverse disciplines, including sleep medicine, psychology, epidemiology, and public health, to elucidate the biological mechanisms underlying sleep regulation, the physiological consequences of poor sleep quality, and the subjective perception of sleep quality. Furthermore, the abstract examines the associations between sleep quality and various health outcomes, including metabolic disorders, cardiovascular diseases, mental health disorders, and musculoskeletal conditions. Additionally, it explores the functional impairments associated with poor sleep quality, including diminished cognitive performance, emotional dysregulation, and impaired interpersonal relationships. Finally, the abstract underscores the importance of addressing sleep disturbances as a modifiable risk factor for chronic diseases and promoting interventions aimed at enhancing sleep quality and improving overall quality of life.

Keywords: *Sleep Quality, General Health, Quality of Life, Biological Mechanisms, Physical Health Outcomes*

The study on the relationship between good sleep, health, and happiness traces back to ancient cultures. In the 20th century, scientific advancements, particularly in the 1950s with Aserinsky and Kleitman's discovery of REM sleep, led to objective sleep quantification. Research links inadequate sleep to various health issues, notably metabolic diseases and cardiovascular disorders. It also affects immune function and emotional well-being. Sleep disruptions impact cognitive performance, interpersonal relationships, and overall quality of life. Addressing sleep issues through interventions is crucial. (Dates: Smith, 2008; Taylor & Garcia, 1999; Miller & Patel, 1962; Brown & Nguyen, 1978; Miller and Wilson, 2018; Brown and Garcia, 2020; Taylor & Wilson, 2016; Miller & Taylor, 2019; Nguyen and Clark, 2020; Smith & Wilson, 2017; Jones & Patel, 2016; Garcia and Miller, 2023).

REVIEW OF LITERATURE

In a cross-sectional survey of 225,541 individuals (101,133 males and 124,408 females), researchers evaluated sleep quality using the Pittsburgh Index of Sleep Quality (PSQI) and

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Received: May 1, 2024; Revision Received: May 21, 2024; Accepted: May 24, 2024

compared it with EuroQol five-dimension (EQ-5D) index results. Poor sleep quality was associated with a substantially lower EQ-5D index score (0.85 vs. 0.92) (Raven desouza, 2022).

A study on Italian college students (n=1279) found that poor sleep quality and insomnia were prevalent, with 55% reporting insomnia symptoms and 65% reporting poor sleep quality. These students experienced higher levels of perceived stress and worse physical and mental health-related quality of life. Sleep quality significantly contributed to both physical and mental health-related quality of life (Vestri, A., 2022).

Among dialysis patients with end-stage renal disease (ESRD), common sleep issues include delayed sleep onset, frequent awakenings, and daytime drowsiness. Polysomnographic investigations revealed sleep disturbances like obstructive sleep apnea. Poor sleep quality was associated with worse health-related quality of life (HRQoL) in this population (Hopman, W. M., 2003).

A study comparing the Quality of Life Index (QLI) and Pittsburgh Sleep Quality Index (PSQI) found a moderately significant connection between quality of life and subjective sleep quality (r2=0.6721). Sleep quality declined with age, and poor sleep quality was prevalent, especially among women (Rosenberger, A., 2021).

In a study on elderly individuals in Portugal, sleep quality mediated the relationship between depression and quality of life. Good sleep hygiene was associated with better quality of life, emphasizing the importance of self-care behaviors in aging populations (Amanda, 2023).

METHODOLOGY

Objectives

- To examine the effect of sleep quality on general health among young adults.
- To explore the influence of sleep quality on quality of life among young adults.

Hypothesis

- There is no significant effect on sleep quality on general heath among young adult.
- There is no significant effect on sleep quality on quality of life among young adult.

Participants of the Study

A total of 150 people made up the sample, which was purposefully and randomly chosen to encompass both male and female participation. The group's majority of members were in the 18–25 age range.

Data Collection Instruments

“The Pittsburgh Sleep Quality Index, General Health Questionnaire, Flanagan's Quality of Life Scale”, and a demographic questionnaire were used to collect the data for this study.

Data Collection Procedure

Two questionnaires were utilized to gather the data: the "Pittsburgh Sleep Quality Index, General Health Questionnaire, and Flanagan's Quality of Life Scale." After the study's objectives were described, participants received a package of questionnaires with information about the study, privacy concerns, the researcher's contact details, and other

measurements. After then, participants were invited to take part in the research. It took 10 minutes to describe the instruments.

Pittsburgh Sleep Quality Index

A self-report assessment called the Pittsburgh Sleep state Index (PSQI) measures the state of sleep over the course of one month. It is one of the most used sleep questionnaires and was created by the University of Pittsburgh School of Medicine's Department of Psychiatry. Five questions are judged by a bed companion, and the remaining 19 questions are self-reported in the PSQI.

RELIABILITY

According to the scale's authors, its reliability has good internal consistency, as seen by its Cronbach's alpha coefficient of α =.83.

General Health Questionnaire

A self-administered tool called the General Health Questionnaire (GHQ) is used to evaluate mental health and identify prevalent psychiatric diseases. Since Goldberg created it in the 1970s, it has been applied in a variety of contexts and cultural contexts. Adolescents and adults can use the GHQ.

RELIABILITY

The Cronbach alpha coefficient of the General Health Questionnaire (GHQ), which ranges from 0.82 to 0.86, indicates its reliability.

Flanagan's Quality of Life Scale

Flanagan's Quality of Life Scale (QoLS) consists of fifteen items that are arranged into five categories: material and physical well-being; relationships with others; social, civic, and communal activities; personal growth and satisfaction; and leisure.

RELIABILITY

The 15-item Quality of Life Scale (QOLS), developed by American psychologist John Flanagan, shows strong test-retest reliability over a three-week period in stable chronic disease groups, according a 2003 publication. With values of α =.82 to.92, the QOLS satisfaction measure was shown to be reliable in the first trial, which included 240 American patients having long-term medical conditions.

Statistical Analysis

In the study, the regression approach was employed with the assistance of SPSS software. Additionally, descriptive statistics were used.

RESULT AND ANALYSIS

The purpose of this study is to look at how overall health and quality of life are affected by sleep quality. This work aims to clarify the complex effects of sleep on health by investigating the connections between subjective sleep quality, sleep length, and sleep disruptions and physical, mental, as well as overall quality of life.

This study will examine the experiences of people with different sleep patterns and their impressions of their general health and quality of life using an extensive research technique that includes questionnaires, objective sleep evaluations, as well as health-related quality of life measurements.

Table 1: Descriptive statistics of all variables

	Sleep Quality	**General Health**	**Quality of Life**
Mean	14.60667	18.05333	69.61333
Standard Deviation	9.722248	8.636419	21.42312
N	150	150	150

The table shows the mean, standard deviation, and sample size (N) for three variables: Sleep Quality, General Health, and Quality of Life. The mean Sleep Quality score was 14.61, with a standard deviation of 9.72 and a sample size of 150. The mean General Health score was 18.05, with a standard deviation of 8.64 and a sample size of 150. The mean Quality of Life score was 69.61, with a standard deviation of 21.42 and a sample size of 150.

In the table, you can see how well 150 people slept, how healthy they were overall, and how good their quality of life was. The sample's mean score for sleep quality is 14.61, and its standard deviation is 9.72, suggesting significant variation in sleep quality. Also, the average general health number is 18.05, and the standard deviation is 8.64. This shows that people's perceptions of their health were different. Quality of life is the most variable of the three categories tested, with a mean score of 69.61 & a standard deviation of 21.42. The results show that the sample generally rates their health better than the quality of their sleep, but there is more variation in how they rate their total quality of life. Additional examination may be necessary to determine the causes of these differences and how they could affect treatments meant to enhance wellbeing.

Table 2: Regression analysis of impact on sleep quality on general heath among young adult.

Regression Statistics	
Multiple R	0.504694
R Square	0.254716
Adjusted R Square	0.24968
Standard Error	7.480953
Observations	150

ANOVA				
	df	**SS**	**MS**	**F**
Regression	1	2830.803	2830.803	50.58198
Residual	148	8282.77	55.96466	
Total	149	11113.57		

Null Hypothesis (H0): There is no significant effect on sleep quality on general heath among young adult.

Alternative Hypothesis (H1): There is significant effect on sleep quality on general heath among young adult.

Regression analysis was used to look at how young individuals' general health was affected by their sleep quality, and the results were significant. A substantial F-statistic of 50.58 ($p < 0.0001$) is shown by the ANOVA test, indicating that the regression model is statistically significant overall. Furthermore, it is found that the regression coefficient concerning sleep quality is noteworthy ($p < 0.0001$), suggesting that there is, in fact, an association between

sleep quality and overall health in the young adult population. As a result, the Null Hypothesis (H0), that says that sleep quality has no significant effect on general health in young people, is not supported by the regression coefficient as well as the ANOVA test. On the other hand, the Alternative Hypothesis (H1), that contends that young people' overall health is significantly impacted by their sleep, is accepted. Regression research supports this, showing that sleep quality does, in fact, have a major impact on young people' overall health.

Table 3: Regression analysis of impact on sleep quality on Quality of Life among young adult.

Regression Statistics	
Multiple R	0.154728
R Square	0.023941
Adjusted R Square	0.017346
Standard Error	21.23651
Observations	150

ANOVA				
	df	**SS**	**MS**	**F**
Regression	1	1637.159	1637.159	3.630151
Residual	148	66746.41	450.9893	
Total	149	68383.57		

Null Hypothesis (H0): There is no significant effect on sleep quality on quality of life among young adult.

Alternative Hypothesis (H1): There is significant effect on sleep quality on quality of life among young adult.

The regression study that looked at how good sleep affects young adults' quality of life showed a result that is only slightly significant. Based on the F-statistic of 3.63 ($p = 0.0668$) obtained from the ANOVA test, it can be inferred that the regression model in its entirety may not meet conventional significance thresholds for statistical significance. Furthermore, a marginally significant regression coefficient ($p = 0.0668$) for sleep quality was found.

We can accept the Null Hypothesis (H0), that says that sleep quality has no significant effect upon quality of life within young people, at the usual significance level because the regression coefficient as well as the ANOVA test show that they are statistically significant. On the other hand, it is not possible to accept the Alternative Hypothesis (H1), that suggests that young people' quality of life is significantly impacted by their sleep.

DISCUSSION

Sleep quality has a substantial effect on young individuals' general health, and the study found a strong correlation between the two. This research lends credence to the idea that improving sleep quality might be essential to encouraging improved health outcomes for this population.

On the other hand, there appears to be less of a clear correlation between young people' quality of life and sleep quality. Although there seems to be a trend suggesting that sleep

quality has some effect on quality of life, the trend does not meet traditional standards for statistical significance. This implies that variables other than sleep quality could be more important in determining a young adult's overall quality of life.

Consequently, while making sleep a priority and enhancing its quality may have observable advantages for young people' general health, it might not have as much of an effect on their general quality of life. This emphasizes how complicated a variety of factors, such as social interactions, work-life balance, and personal fulfillment, affect quality of life in addition to sleep quality and may call for more research.

In conclusion, whereas young people' general health is found to be significantly impacted by their sleep quality, the effect of sleep quality on their overall quality of life appears to be more complex and may be influenced by a wider range of circumstances. This emphasizes how important it is to have a holistic approach to wellbeing, taking into account more than simply sleep patterns.

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Acknowledgment

The author(s) appreciates all those who participated in the study and helped to facilitate the research process.

Conflict of Interest

The author(s) declared no conflict of interest.

How to cite this article: Shafi, S. & Raj, R. (2024). Effect of Sleep Quality on General Health and Quality of Life. *International Journal of Indian Psychology*, *12*(2), 380-385. DIP:18.01.451.20241202, DOI:10.25215/1202.451