

Gender-Based Comparative Study of Sleep Quality: Insights from the Pittsburgh Sleep Quality Index (PSQI)

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Abstract: *This research paper presents a comparative study of sleep quality between male and female participants, utilizing the Pittsburgh Sleep Quality Index (PSQI) to assess various sleep-related variables. The study explores differences in sleep duration, latency, efficiency, disturbances, medication use, and daytime dysfunction across genders. The results reveal distinct trends in sleep patterns, with females reporting slightly better sleep efficiency but higher sleep disturbances and medication use. These findings can aid in tailoring gender-specific interventions to improve sleep quality.*

Keywords: *Pittsburgh Sleep Quality Index*

I. INTRODUCTION

Sleep is a crucial aspect of health, affecting cognitive function, emotional regulation, and physical well-being. Poor sleep quality has been linked to a range of health issues, including increased risk for cardiovascular disease, depression, and reduced immune function. As sleep patterns and habits often differ between individuals, understanding these differences by gender can provide valuable insights for personalized sleep interventions. The Pittsburgh Sleep Quality Index (PSQI) is a widely used tool to assess subjective sleep quality and sleep disturbances. This paper aims to compare male and female sleep quality based on PSQI data, providing a clear picture of gender-based differences.

Materials and Methods

The dataset used in this study consists of responses from 165 participants who completed the PSQI. The participants were divided into two groups: males and females. Each participant's sleep quality was assessed across the following dimensions:

Sleep Duration: Amount of sleep the individual gets.

Sleep Latency: The amount of time it takes to fall asleep.

Sleep Efficiency: The ratio of time spent asleep to time spent in bed.

Sleep Disturbances: The frequency of disruptions to sleep.

Sleep Medication Use: The extent of reliance on medication to aid sleep.

Daytime Dysfunction: The level of daytime impairment due to sleep-related issues.

Data analysis was conducted by grouping participants based on gender and calculating the mean scores for each of these dimensions.

Results: The results of the gender-based comparison are presented below:

Sleep Quality Indicator	Female (Mean)	Male (Mean)
Sleep Duration Score	1.85	1.84
Sleep Latency Score	1.66	1.42
Sleep Efficiency Score	2.11	1.86
Sleep Disturbances Score	0.30	0.38



Sleep Medication Use Score	0.60	0.83
Daytime Dysfunction Score	0.71	0.76

Sleep Duration: Both males and females reported similar average sleep durations, with females slightly higher (1.85 vs. 1.84).

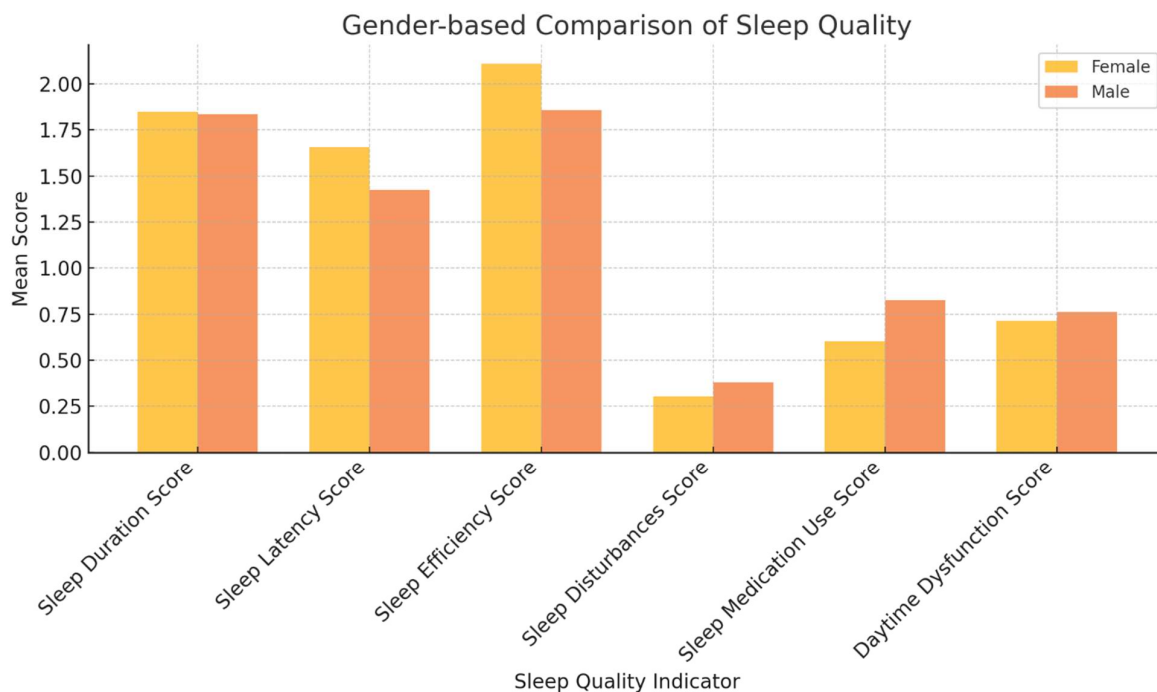
Sleep Latency: Females took longer to fall asleep on average (1.66) compared to males (1.42).

Sleep Efficiency: Females exhibited better sleep efficiency (2.11) than males (1.86).

Sleep Disturbances: Females reported fewer disturbances (0.30) than males (0.38).

Sleep Medication Use: Males relied more on medication for sleep (0.83) compared to females (0.60).

Daytime Dysfunction: Daytime dysfunction scores were similar, with males reporting slightly higher daytime impairment (0.76 vs. 0.71).



Discussion

The comparative analysis between males and females reveals notable gender differences in sleep quality. Although both genders reported similar sleep durations, females experienced slightly better sleep efficiency, indicating that their sleep was of higher quality. However, females reported greater difficulty in falling asleep and experienced fewer disturbances during the night compared to males. The higher reliance on sleep medication among males suggests a higher prevalence of sleep-related issues in this group.

One possible explanation for these gender differences could be hormonal fluctuations in females, particularly related to the menstrual cycle, pregnancy, and menopause, which can influence sleep patterns. On the other hand, higher medication use in males may be attributed to greater reluctance to adopt behavioral sleep interventions or a higher prevalence of sleep disorders such as insomnia.

Limitations

This study is limited by its cross-sectional design, and the results are based on self-reported data, which may be influenced by social desirability bias or subjective interpretation. The sample size and diversity of the population also limit the



generalizability of the findings to the broader population. Further research with larger, more diverse samples and objective sleep measurements would provide more comprehensive insights into gender-based sleep patterns.

II. CONCLUSION

This study highlights important gender-based differences in sleep quality. Females tend to experience better sleep efficiency but face more challenges with sleep latency, while males report higher reliance on sleep medications. These findings underscore the importance of considering gender differences when developing sleep interventions and health policies aimed at improving sleep quality. Future research should investigate the underlying causes of these differences, focusing on hormonal, behavioral, and psychological factors that may contribute to distinct sleep patterns in men and women.

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