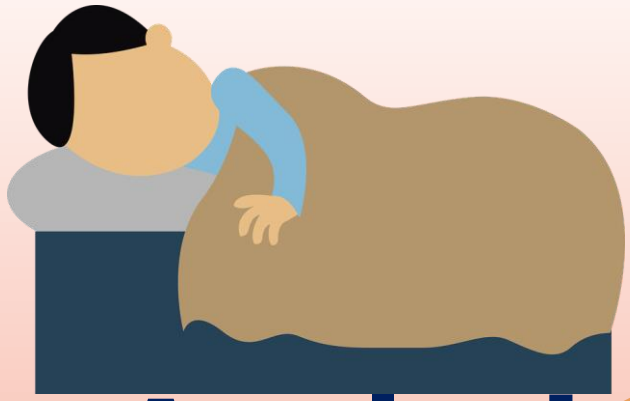


Sleep Disorder Analysis

By : Gaurav Vashist

Introduction

- Sleep disorders encompass a range of conditions disrupting normal sleep patterns, including **sleep apnea (pauses in breathing) and insomnia (difficulty falling or staying asleep).** Understanding these patterns is crucial for optimizing health and well-being due to their significant impact on overall wellness.

- Utilizing machine learning models and Bi tools analysis enhances healthcare analytics, enabling better understanding and optimization of sleep disorder management for improved outcomes.

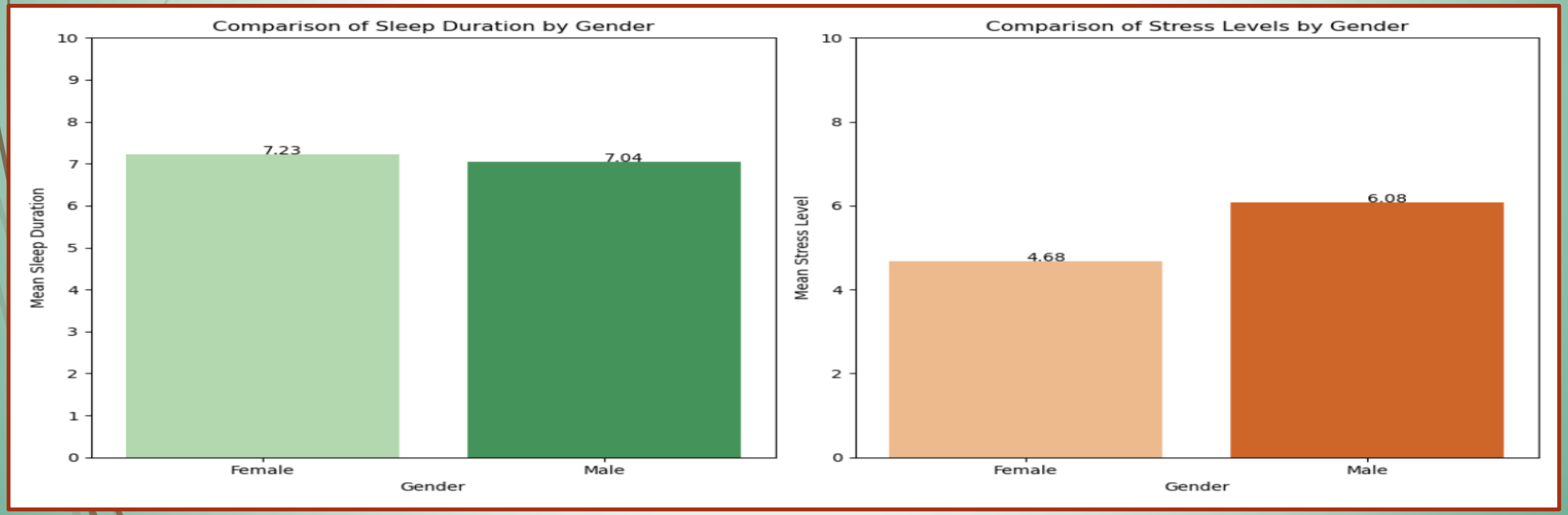
Important KPI's

Sleep Disorder Analysis by Gaurav Vashist

Average Daily Sleep 7.13	Count of Occupation 11	Average Daily Steps 6.82K	Average Sleep Quality 7.31	Count of Male 189
Count of Female 185	Count of Sleep Disorder 3	Average Sleep Quality 7.31	Count of Person ID 374	Count of Gender 374

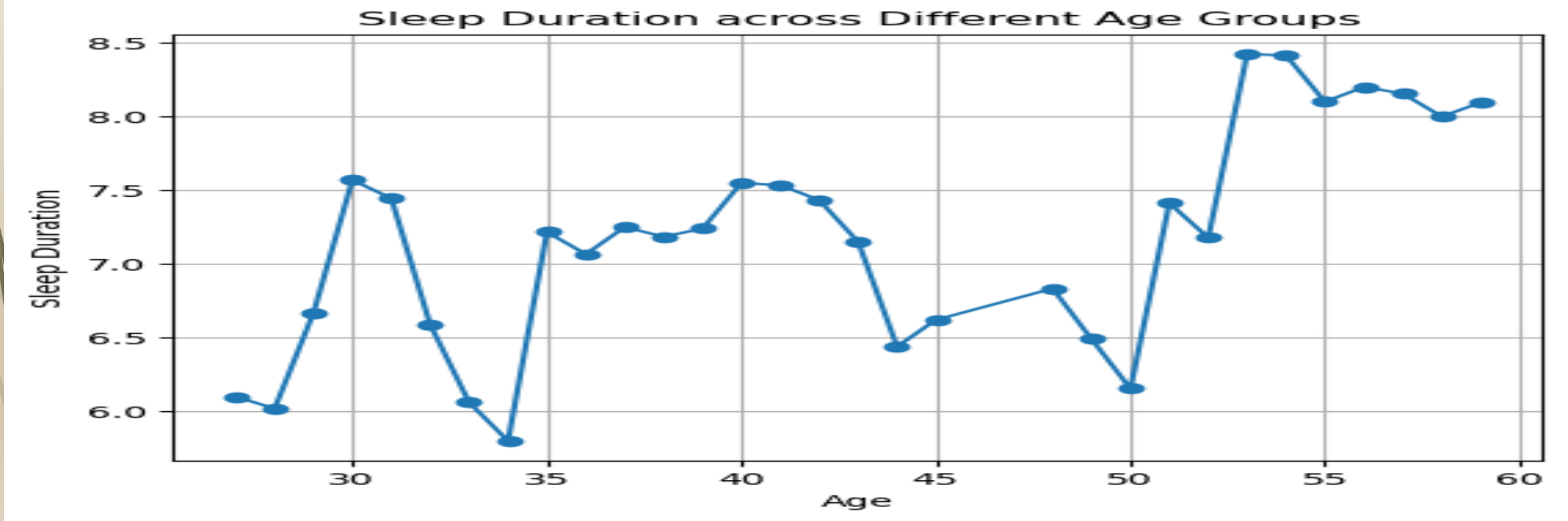
Sleep & Stress Comparison between Gender

- Females exhibit superior sleep patterns and lower stress levels compared to males, highlighting gender differences in well-being.



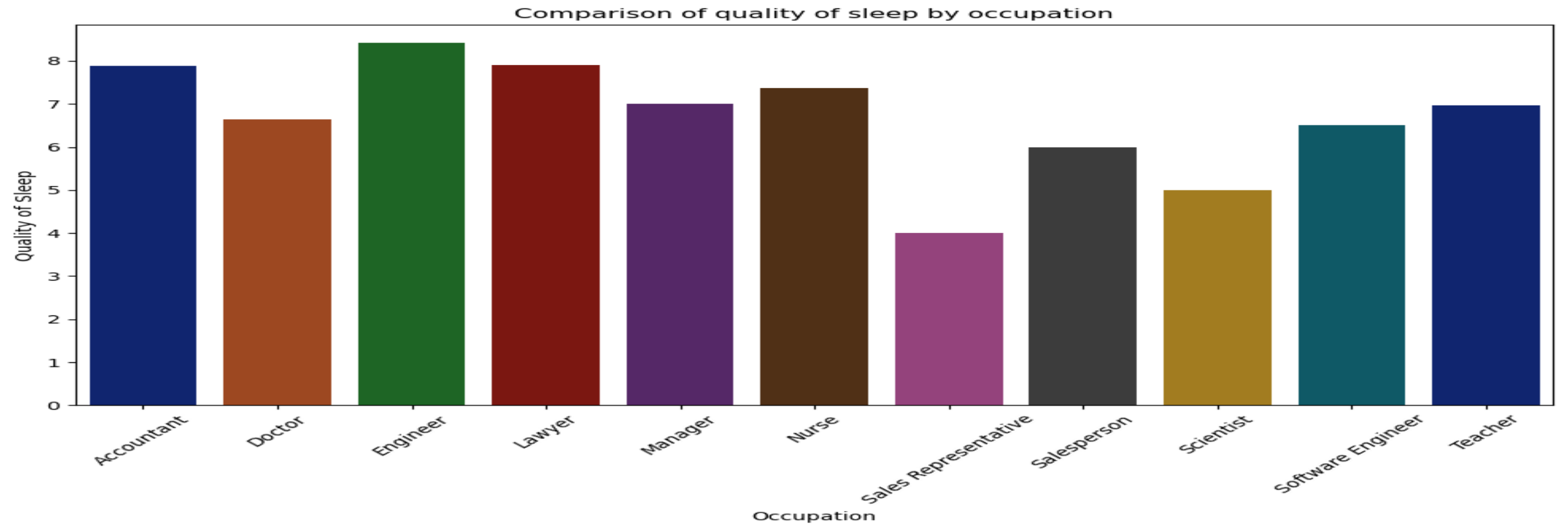
Stress Relationship with Age

- Individuals under 30 typically experience lower stress levels, while those over 50 often face higher stress levels.



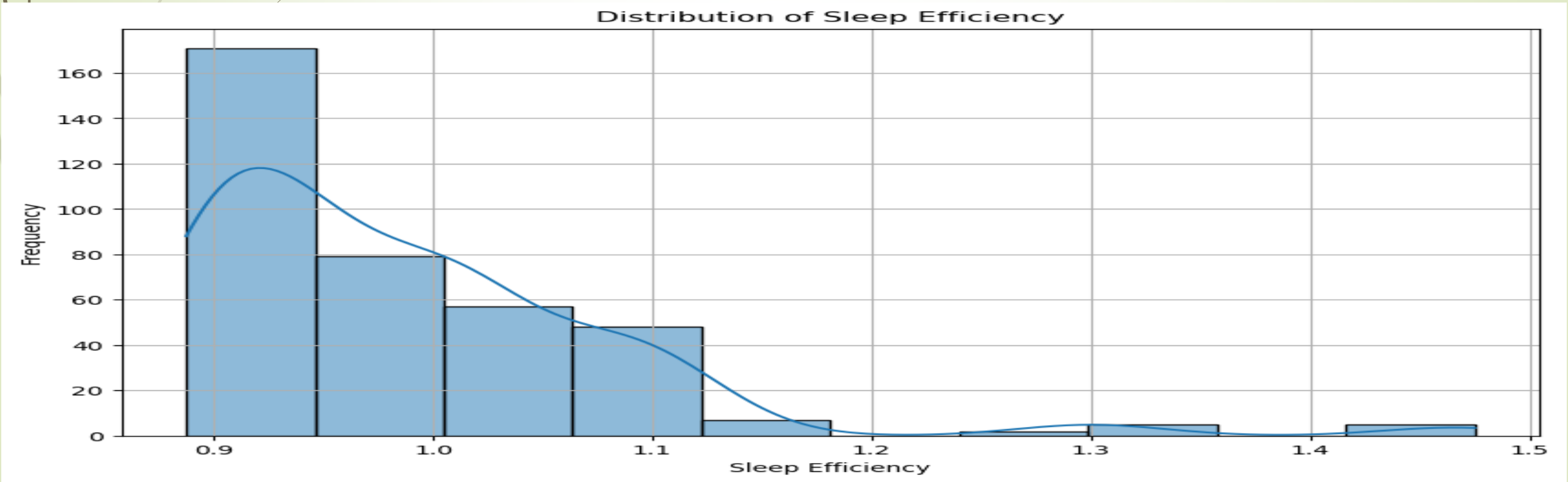
Stress Level by Occupation

Stress levels and sleep patterns are directly proportional, indicating that increased stress often correlates with disrupted or poorer quality sleep.



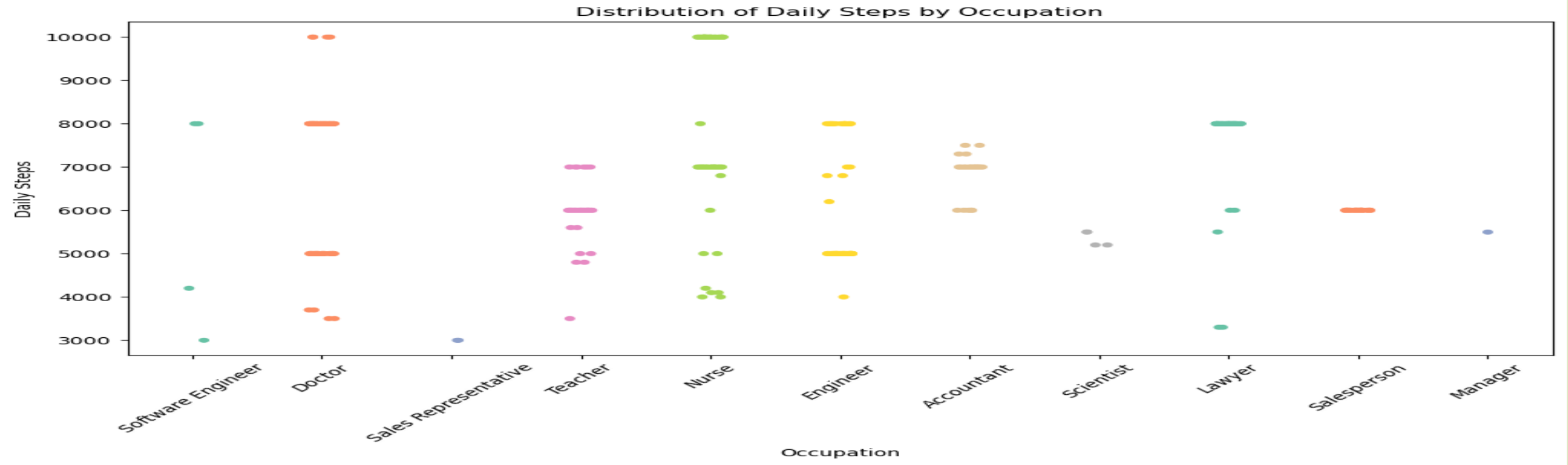
Sleep Efficiency

This graph illustrates the distribution of "Sleep Efficiency," calculated as the ratio of "Sleep Duration" to "Quality of Sleep," with higher values indicating superior efficiency.



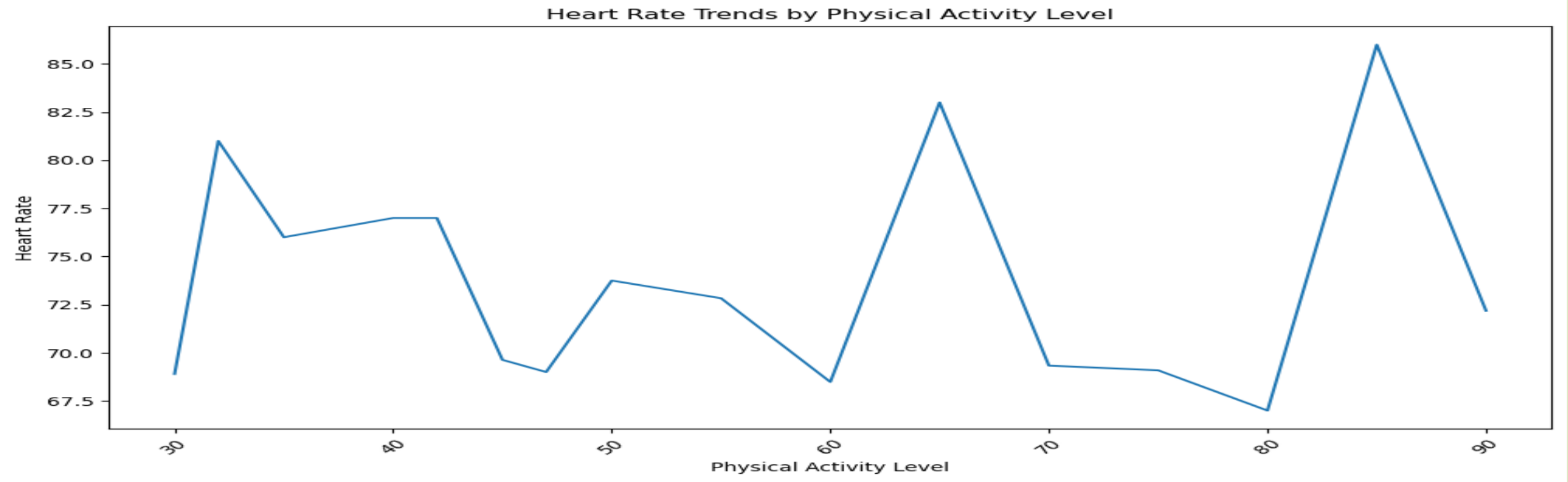
Steps Relationship

Higher daily steps in the sleep disorder dataset suggest a potential correlation with improved sleep quality or overall physical activity levels, indicating a possible link between exercise and better sleep outcomes in individuals with sleep disorders.



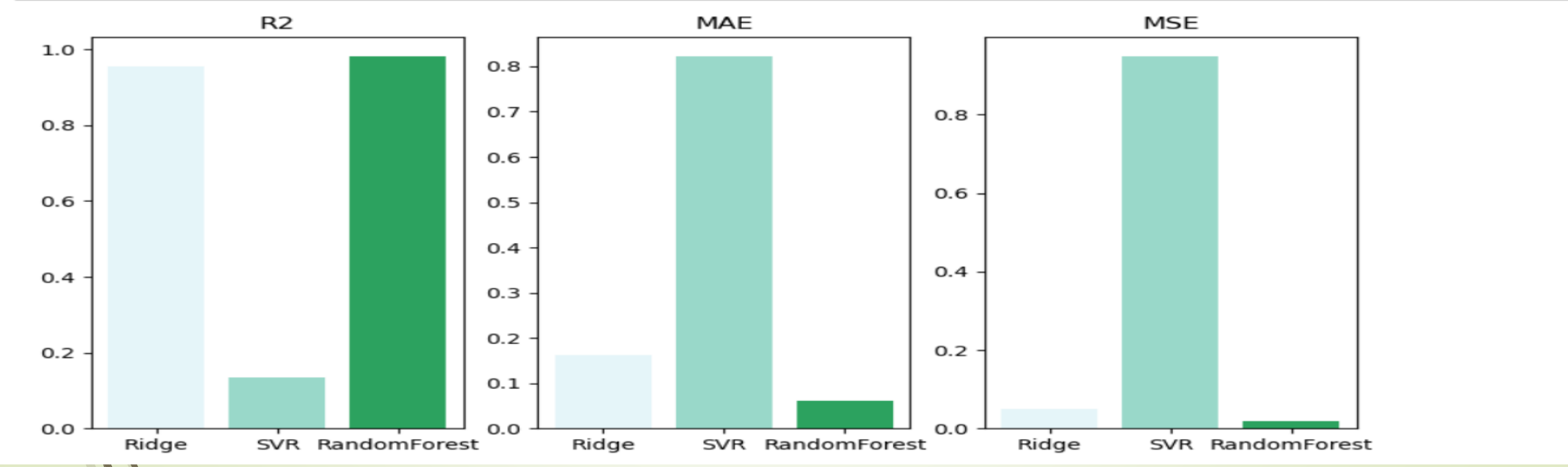
Physical Activity Importance

Regular physical activity increases heart rate, improving blood circulation, maintaining BMI, and potentially alleviating insomnia and sleep apnea symptoms, promoting better overall sleep and health.



Modelling Technique

In this analysis, Random Forest emerged as the optimal modeling technique, exhibiting high accuracy and minimal errors, demonstrating its effectiveness for the task.



Summary

Sleep Duration and Quality: There is a moderate positive correlation between sleep duration and quality of sleep. Individuals who have longer sleep durations tend to report higher sleep quality.

Stress Level and Sleep Quality: There is a negative correlation between stress level and sleep quality. Higher stress levels are associated with lower sleep quality.

Physical Activity Level and Sleep Duration: There is a weak positive correlation between physical activity level and sleep duration. Individuals who engage in higher levels of physical activity tend to have slightly longer sleep durations.

Blood Pressure and Sleep Duration: There is no significant correlation between blood pressure and sleep duration. Blood pressure levels do not appear to have a direct impact on sleep duration.

Recommendations for Improved Sleep, Health, and Lifestyle

Sleep Routine: Establish consistent bedtime and wake-up times to regulate your body clock for better sleep quality.

Stress Management: Practice techniques like meditation to reduce stress and improve sleep.

Regular Physical Activity: Aim for 150 minutes of moderate exercise weekly for better sleep and health.

Maintain Healthy Weight: Monitor BMI and consult healthcare professionals for guidance.

Blood Pressure Management: Monitor and manage blood pressure for overall health.

Monitor Heart Rate: Stay vigilant for irregularities and consult healthcare professionals.
Daily Steps: Aim for a minimum number of steps daily for improved sleep and health.

Seek Professional Help: Consult with healthcare professionals for persistent sleep issues or health concerns.

thank you

GAURAV VASHIST