

STAT 614 APPLIED STATISTICS
PROJECT PROPOSAL
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Dataset - Sleep Health and Lifestyle

Dataset Overview:

The Sleep Health and Lifestyle Dataset has **374 observations and 13 variables** related to sleep and daily habits. These variables include gender (binomial - male/female), age (continuous - years), occupation (categorical), sleep duration (continuous - hours), quality of sleep (continuous - scale of 1-10), physical activity level (continuous - minutes), stress levels (continuous - scale of 1-10), BMI category (categorical - underweight/ normal/ overweight), blood pressure (binomial - systolic/diastolic) , heart rate (continuous - bpm), daily steps (continuous), and sleep disorder (categorical - normal, insomnia, sleep apnea)

Questions :

- 1. Is the mean Quality of sleep different for males and females ?**
Statistical Analysis - Two sample t - Test for means
Response variable - Quality of Sleep | Predictor variable - Gender
- 2. Is there a significant difference in the mean sleep duration for the people in the 3 BMI categories (underweight, normal, and overweight) ?**
Statistical Analysis - One way ANOVA
Response variable - Sleep Duration | Predictor variable - BMI category
- 3. Is the Quality of Sleep associated with Stress Level ?**
Statistical analysis - Simple Linear Regression
Response variable - Quality of Sleep | Predictor variable - Stress Level
- 4. Is there a relationship between the Duration of Sleep with Physical Activity and Daily Step Count ?**
Statistical Analysis - Multiple Linear Regression
Response variable - Duration of sleep
Predictor variables - Physical Activity and Daily Steps

Objective:

Objective of this study is to assess if sleep is related to various factors like physical activity, daily steps, BMI, gender, and stress level, and recommend actions based on these results.