An Analysis on Stress Levels, Quality of Sleep, & Duration of Sleep

At first glance the evidence had seemed strong for the implication that stress levels greatly impact quality of sleep and duration of sleep. However, when testing the hypothesis the high p-values said otherwise, meaning that we fail to reject the null hypothesis, and it is based on random chance rather than caused by a real impact by stress levels. This can be due to the sample size of the data, as it can be more difficult to attain a reasonable p-value. Both the visual interpretations, the Pearson’s Correlation, and the covariances seem to point at how higher stress levels negatively impacted quality of sleep and duration of sleep. Although we briefly touched on non-linear relationships with this analysis, it would have been helpful to further investigate the implications using nonlinear regression methods, machine learning algorithms such as decision trees, or further parametric testing.

Variables such as age, or even diet could have further broadened the analysis and could help uncover any underlying factors that can affect quality of sleep and duration of sleep. Age could count for any differences that may appear in sleep needs and responses to stress. Caffeine intake and even the time when one drinks coffee, or tea can play a factor in the quality of sleep and duration of sleep. The assumption on the linear relationship between stress levels vs sleep duration and quality of sleep was made and affected how I approached the analysis. The challenge appeared to be with the discovery that stress levels could have played a part in a nonlinear way, and determining the correct methods of testing given how many potential relationships there could have been. Overall, this requires further deepening of knowledge and in depth testing of all assumptions.