SLEEP EFFICIENCY ANALYSIS

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INTRODUCTION

Sleep is a vital component of human health, serving restorative functions and affecting our cognitive abilities, mood, and overall well-being. However, various lifestyle choices can significantly impact the quality of sleep, including the consumption of substances like nicotine and alcohol and exercise rate This report delves into the effects of these 3 on sleep patterns and efficiency

HYPOTHESIS

We are trying to reject these 3 Null hypothesis:
Smoking
Null Hypothesis (H_0): Smoking has no effect on sleep efficiency or the duration of light and deep sleep stages.
Alcohol
Null Hypothesis (H_0): Alcohol consumption has no effect on sleep efficiency or the duration of light and deep sleep stages.
Exercise
Null Hypothesis (H_0): Exercise frequency has no effect on sleep efficiency or the duration of light and deep sleep stages.

CONCLUSION

We proved the 3 alternative hypothesis and rejected the null and here's the conclusion:

1. Non-Smokers' Sleep Quality: Non-smokers enjoy superior sleep quality compared to smokers.
2. Alcohol's Impact: Drinking alcohol significantly diminishes rest quality and deep sleep.
3. Regular exercise and adequate rest lead to enhanced deep sleep and improved sleep efficiency

ANALYSIS 1

Analysis of Smoking Impact on Sleep Quality;

- The first graph represents that Non-smokers outnumber smokers.
- The second graph shows Box plots show non-smokers have better sleep quality.
- Data suggests smoking may reduce sleep efficiency.
- Findings support the hypothesis that smoking impacts sleep negatively

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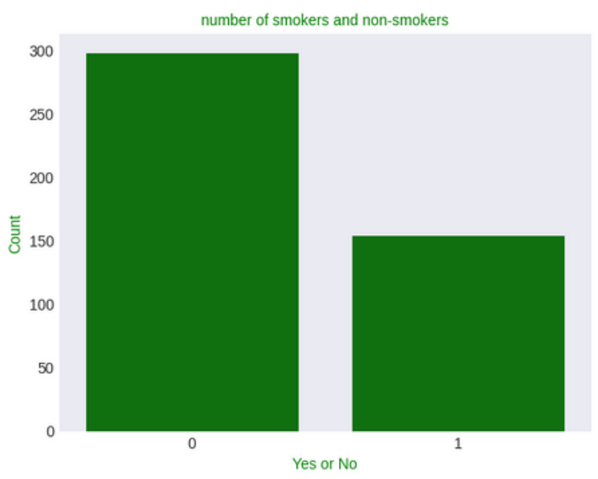
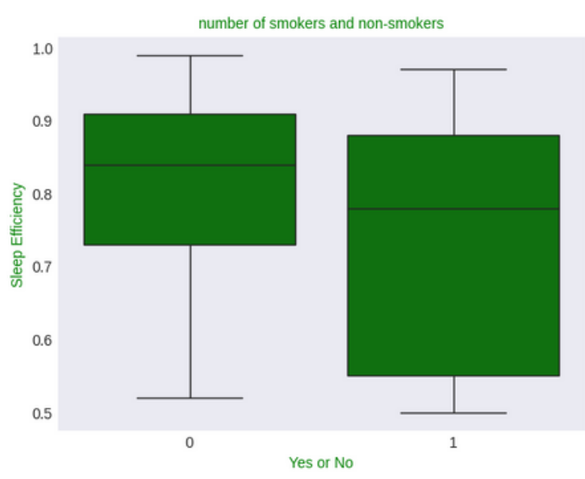


Graph 1



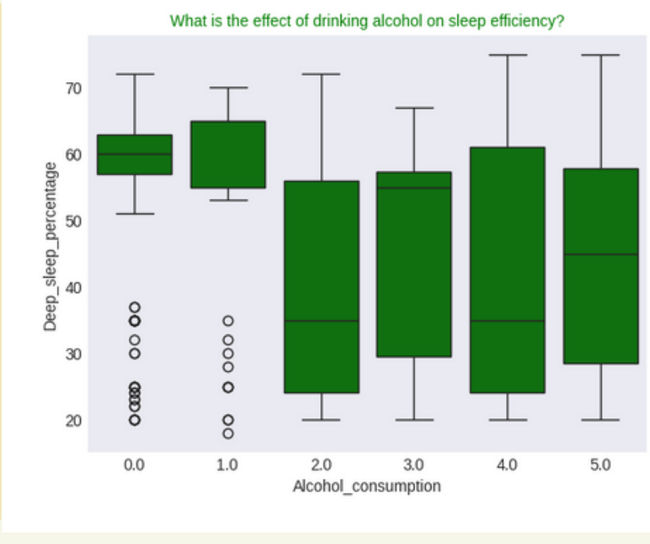
Graph 2

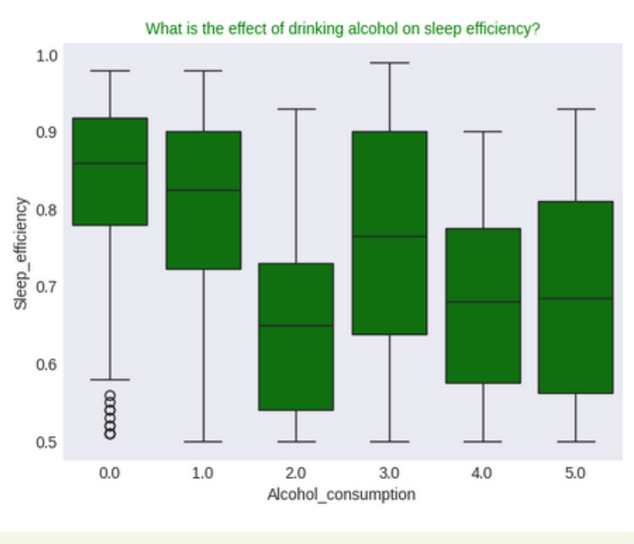
ANALYSIS 2

Analysis of the Impact of Alcohol on Sleep
This Analysis underscores the importance of avoiding alcohol to maintain high sleep. Alcohol consumption is counterproductive for quality sleep. Which reveals the following:

- Easier Sleep Onset: Alcohol may help initiate sleep.
- Reduced Sleep Quality: Overall sleep quality is compromised with alcohol consumption.
- Deep Sleep: Non-drinkers achieve more deep sleep, essential for restorative rest.
- Visual Data: Charts show that abstaining from alcohol leads to better sleep.

P value of this analysis is 1.5151001199864567e-05





ANALYSIS 3

Exercise's Role in Sleep Efficiency and Deep Sleep
Our analysis confirms that regular exercise improves sleep efficiency and increases deep sleep. Data shows:

- Optimal sleep efficiency with exercise 4-5 times/week.
- Highest deep sleep and least light sleep with 2+ weekly workouts.
- Graphs validate exercise's positive impact on sleep.
- P value of this analysis is 3.0751582149379786e-05