Name: Mohammed Ambusaidi

Instructor name: Dr. Wood

Assignment: the final project of INFO-I 123

**Title: “How Daily Habits Affect Mood and Stress Levels”**

**The Abstract:**

The study aims to analyze the impact of daily life habits such as exercise, sleep duration, coffee consumption, studying time, screen time, and water intake on mood and stress levels over 28 days. Through this study, I included 2 studies by Berger and Owen (1988) and Lane and Lovejoy (2001). In my study I want to shed light on which daily habits might impact mood and stress levels over time.

**The introduction:**

How often do you feel like your day is more heavily influenced by stress and mood than you would like? Feeling under stress or having a bad mood can negatively affect your day, preventing you from living the happy life that you deserve. In our daily lives, the routine that we follow every day might affect our mental health. Factors like our exercise pattern, sleep duration, coffee consumption, study hours, screen time and hydration levels can significantly impact our mood and stress levels. For example, a study conducted by Berger and Owen (1988) shows the impact of different exercises on stress reduction and mood enhancement for college students. The experimenters in this study assigned college students, as this age group is exposed to many challenges that affect their mental health, such as academic pressure, social life, and financial stress. Berger and Owen chose four different exercises to measure whether those exercises impact students' stress and mood or not (1988). Berger and Owen (1988) inferred that the four exercises vary depending on the degree of stress levels and mood enhancement for college students. However, all four exercises showed a positive correlation with mood and stress, resulting in a noticeable decrease in depression, anger, fatigue, and confusion among college students. Adding to Berger and Owen's (1988) study, Lane and Lovejoy examined the relationship between exercising and mood changes, particularly whether being in a depressed mood before exercising makes a difference (2001). The results of this study are consistent with Berger and Owen’s study, as it infers that exercising has a positive impact on mood, especially for those who are in a depressed mood. Moreover, the study demonstrated that exercising reduces mood fluctuations, resulting in a better mood state. Inspired by the key findings of both studies, I was motivated to not just examine the relationship between exercise and its impact on mood and stress levels but to include more daily activities that might impact our mental health. To this purpose, I started collecting data about myself, tracking my daily activities, and measuring the levels of mood and stress over a period of 28 days. As we get deeper into the relationship between daily activities and mental health, my research aims to clarify how can specific activities impact our mental health.

**Methods:**

Theoretical construct:

For a period of 28 days, I have collected data about myself to examine the relationship between daily habits and their potential to affect stress and mood scales. My theoretical idea is that our daily activities and routine have a direct impact on our mood and stress levels. The two studies from Berger and Owen (1988) and Lane and Lovejoy (2001) support this theoretical idea by demonstrating the impact of exercise on mood and stress.

Operational definition:

The following operational definitions were used for the study:

The independent variables:

Exercise: I recorded any physical exercise I have done during the day, noting the amount of time I spent doing this exercise in minutes.

Sleep duration: the number of hours I spend sleeping that day.

Coffee consumption: I tracked the amount of coffee I consumed, measured in milliliters (ml).

Studying time: the time I spend on reading, writing, or engaging in any academic tasks (minutes).

Screen time: the time I spend in front of screens in minutes.

Water intake: how many bottles of water I consumed a day.

The dependent variables:

Mood: measured in an ordinal categorical scale (very negative, negative, neutral, positive, very positive).

Stress: measured in a scale from 1 (very low) to 5 (very high).

Data collection:

In 28 days, I collected data about my daily activities and feelings for this research. I used the notepad on my iPhone to track things like how I felt, what I did, how much I slept, and how much water and coffee I drank. Every time I study or use my devices, I set a timer to ensure that the data is accurate and not approximate. Moreover, I set up an alarm at 10 p.m. every day as a reminder to collect data to ensure consistency and avoid any bias. During this process, I found it hard to collect data especially when my day is busy. I tried to solve this problem by taking a quick note and checking them when it’s the time to input the data through excel. Furthermore, this process taught me a lot about how to collect data about myself and how important is the accuracy of the data. Overall, after collecting accurate and consistent data about myself, I plan to provide valuable insights to explore the complex relationships between my daily activities and my feelings.

**Results:**

Daily activities impact on stress:

Exercise: days with no exercise are linked to higher levels of stress. Less than 45 minutes of exercise reported stress levels of 4 and 5, while more than 45 minutes of exercise show a lower level of stress (1, 2, and 3), which demonstrates the positive effect of exercising on reducing stress levels. Given the line graph below, the x-axis shows the daily exercise in minutes, and the y-axis shows the average stress levels during that period. From this graph, it’s obvious that there is a decline in stress levels after 45 minutes of exercising which emphasizes the positive relationship between those two variables.

A graph of a line

Description automatically generated

Sleep duration: The relationship between sleep duration and stress is complex. While longer sleep durations, especially around 10 hours, resulted in lower stress levels, there are some inconsistencies that affect this correlation.

Coffee consumption: coffee consumption on days with more than 250 ml is associated with higher levels of stress than days with less than 250 ml of coffee consumption. The line graph below demonstrates the amount of coffee consumed (ml) on the x-axis and the average stress levels on the y-axis. Moreover, following this line graph, it’s clear that after 250 ml of coffee consumption, there is an increase in average stress levels.

A graph of a line with a blue line

Description automatically generated

Screen time: screen time lasting more than 300 minutes shows an increase in stress levels. Given the scatter plot below, the x-axis shows the screen time in minutes and the y-axis shows the average stress levels. Following this scatterplot, the trendline shows a positive relationship between those two variables, emphasizing that positive correlation.

A graph with blue dots

Description automatically generated

Daily activities impact on mood:

To visualize this data effectively, I added an additional column to convert the ordinal scale to a numeric scale from 1 to 5 (Very Negative: 1, Negative: 2, Neutral: 3, Positive: 4, Very Positive: 5).

Exercise: Days with more than 60 minutes of exercise are associated with a positive mood, and that’s demonstrate the positive correlation between exercising and better moods. The bar graph below shows this correlation given x-axis is daily exercise in minutes and y axis is the average mood enhancement:

A graph of blue bars

Description automatically generated

Sleep duration:

Sleep duration again shows a complex relationship with mood. Some days with longer sleep hours reported a positive mood, while others reported a negative mood. And that shows that mood and stress are more associated with other activities than sleep duration.

Coffee consumption: more than 250 ml of coffee consumption results in a negative mood (less than 3), which means that coffee consumption affects mood negatively. To better understand this correlation, the line graph below demonstrates the decline in mood enhancement average after 250 ml of coffee consumption.

A graph with a line and a line

Description automatically generated

Screen time: more than 400 minutes of screen time resulted in a negative mood. However, less screen time leads to being in a better mood. The scatterplot below shows a declining trendline which emphasizes this negative correlation between screen time and mood.

A graph with blue dots

Description automatically generated

**Discussion:**

The results of this study emphasize the complex relationship between daily habits and their impact on mood and stress levels. Exercise in particular shows a positive correlation with reducing stress levels and enhancing mood. This corresponds with Berger and Owen's (1988) and Lane and Lovejoy's (2001) reports, which highlighted the positive effect of exercising on mood and stress levels. In terms of sleep duration, the results show that sleeping is undoubtedly important. However, it may not be the determining factor in mood and stress levels. Other factors, like exercising and screen time, can moderate the effects of sleep on mood and stress. Therefore, it’s important to not just focus on the quality of sleep to reduce stress and enhance mood. Factors like exercise and screen time may be more important to consider for mood enhancement and lowering stress levels. When it comes to coffee consumption, the study indicates that high coffee consumption leads to increase stress levels, resulting in very negative moods. Moreover, spending more hours in front of a screen seems to be negatively correlated with mood. This may be attributed to reducing the amount of exercise, which leads to an increase in stress levels and ruins the mood. While the study provides valuable insights about the correlation between daily life activities and mood and stress, it’s important to provide an analysis of the limitations and weaknesses of the study. Firstly, the sample size of the study is small, and this could make the results inaccurate and not reflect a broader population. Moreover, the duration of the study is only 28 days, which may not be enough time to understand the complex relationship between daily activities and their impact on stress and mood, especially in the long term.

In conclusion, the study offers valuable insights about which daily habits impact mood and stress levels over the course of 28 days. It emphasizes the importance of positive habits like exercising and its positive correlation with reducing stress and enhancing mood. Moreover, the study encourages people to give up bad habits like excessive coffee consumption and screen time, as it shows the negative correlation between those habits and their impact on mood and stress levels. While people’s body responses to those habits may vary, the study provides a valuable pattern that explains a basic understanding of what habits can impact mood and stress levels. Thus, this can help people make informed decisions regarding their daily routine. Moreover, as this study relies on self-reported data, this research could benefit from more objective measurements and a larger sample size to get better and more accurate results about the relationship between daily habits and their effects on mood and stress levels.

**References:**

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Lane, A. M., & Lovejoy, D. J. (2001). The effects of exercise on mood changes: The moderating effect of depressed mood. Journal of sports medicine and physical fitness, 41(4), 539-545.