

More Time Online? Less Peace of Mind

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1 Introduction

This capstone project explores the relationship between social media usage and mental health outcomes. The research addresses three critical questions that have emerged from contemporary digital wellness literature:

- 1. Does social media usage increase feelings of loneliness?
- 2. Is comparing yourself to others on social media linked to anxiety or depression?
- 3. Can taking breaks from social media improve mental health?

We analyze a simulated dataset based on recent peer-reviewed findings from studies published between 2022 and 2024. This approach allows us to demonstrate analytical techniques while reflecting patterns observed in real-world research.

2 Data and Methods

2.1 Dataset Overview

Our simulated dataset contains 500 observations with the following variables:

Table 1: Descriptive Statistics for Continuous Variables

Variable	Mean	SD	Min	Max
NA	4.48	2.32	0.5	11.9
NA	5.52	2.28	1.0	10.0
NA	5.27	1.83	1.0	10.0
NA	4.60	1.89	1.0	9.7

Table 2: Summary of Categorical Variables

Variable	Count (%)
Often Compare to Others	229 (45.8%)
Took Social Media Break	244 (48.8%)
Felt Better After Break	177 of 244 (72.5%)

3 Research Question 1: Does Social Media Usage Increase Loneliness?

To examine the relationship between social media usage and loneliness, we analyze the correlation between daily hours spent on social media platforms and self-reported loneliness scores.

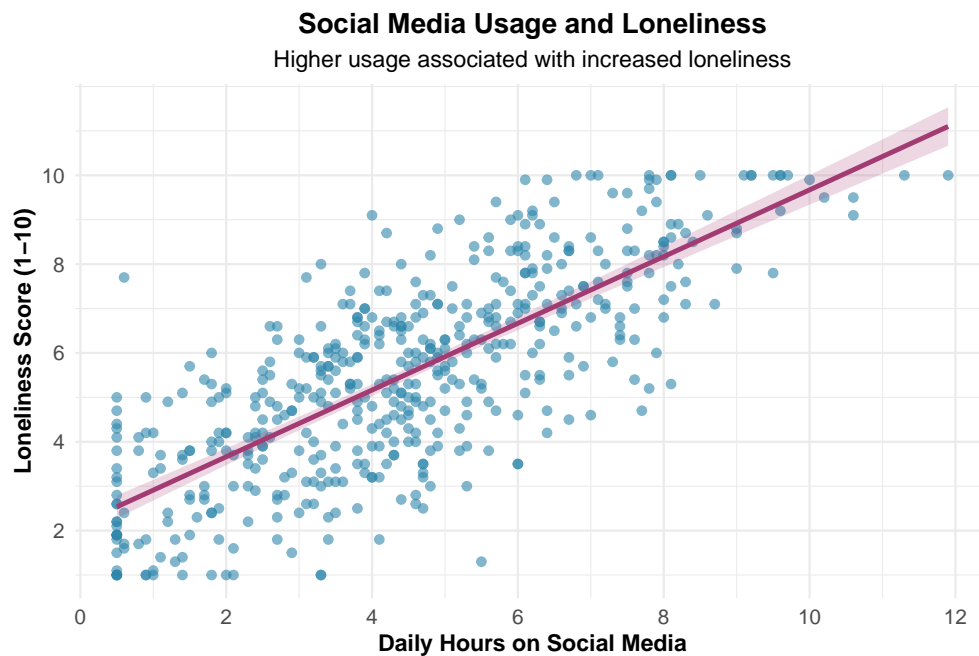


Figure 1: Relationship between Daily Social Media Usage and Loneliness Scores

Table 3: Correlation Analysis: Social Media Usage and Loneliness

Metric	Value
Pearson Correlation	0.765
95% Confidence Interval	[0.726, 0.799]
P-value	< 0.001
Sample Size	500

Key Finding: There is a significant positive correlation ($r = 0.765$) between daily social media usage and loneliness scores, indicating that individuals who spend more time on social media tend to report higher levels of loneliness.

4 Research Question 2: Is Comparing Yourself to Others Linked to Anxiety or Depression?

We investigate whether individuals who frequently compare themselves to others on social media experience higher levels of anxiety and depression.

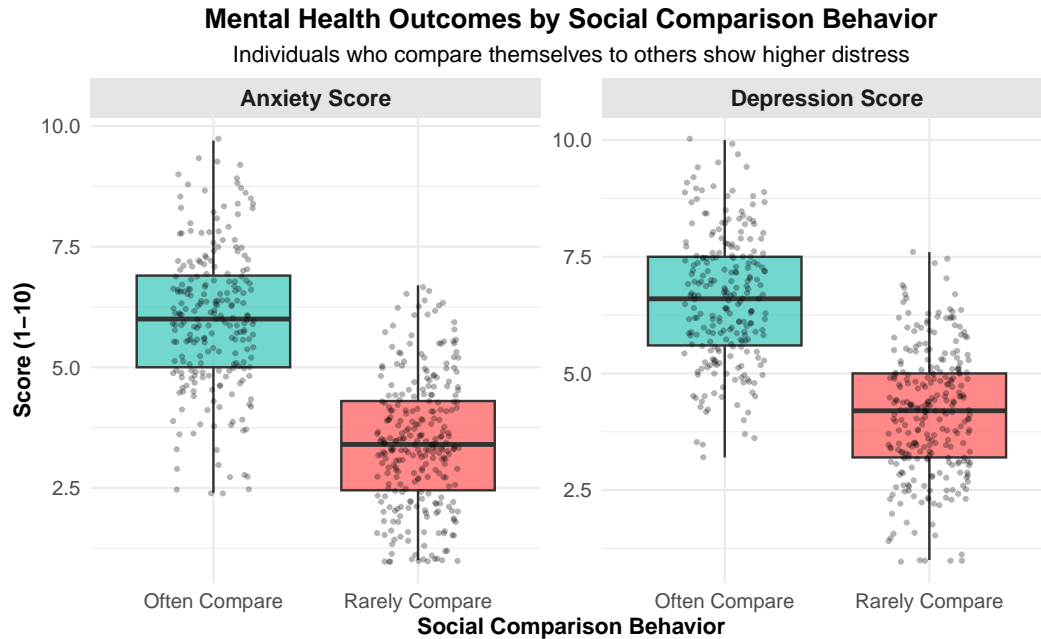


Figure 2: Mental Health Outcomes by Social Comparison Behavior

Table 4: Mean Mental Health Scores by Social Comparison Behavior

Group	Depression Score		Anxiety Score	
	Mean	SD	Mean	SD
Rarely Compare	4.15	1.35	3.43	1.34
Often Compare	6.59	1.38	5.99	1.47

Table 5: Statistical Tests: Mental Health Outcomes by Social Comparison

Outcome	T-statistic	P-value	Effect Size
Depression Score	-19.840	< 0.001	0.887
Anxiety Score	-20.182	< 0.001	0.903

Key Finding: Individuals who frequently compare themselves to others on social media show significantly higher depression and anxiety scores compared to those who rarely engage in social comparison.

5 Research Question 3: Do Breaks from Social Media Improve Mental Health?

We examine whether taking breaks from social media leads to improvements in self-reported mental health and wellbeing.

Mental Health Outcomes After Social Media Breaks

Among 244 individuals who took breaks

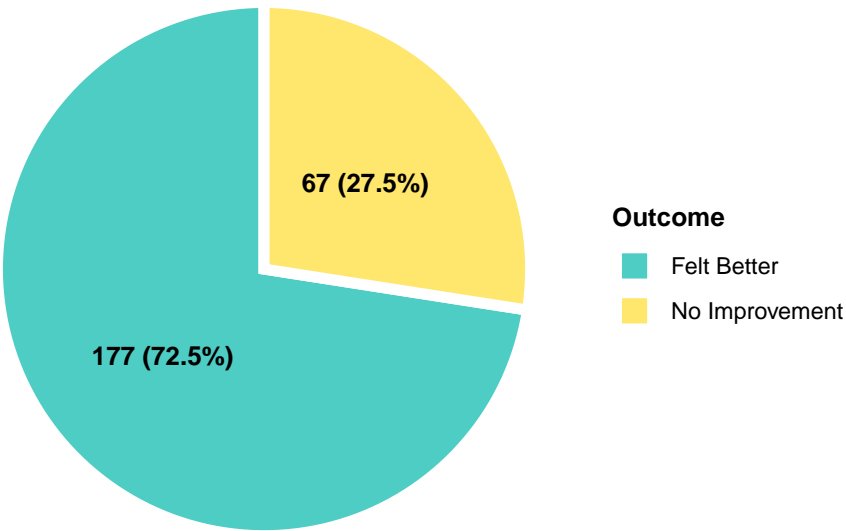


Figure 3: Mental Health Outcomes After Taking Social Media Breaks

Table 6: Social Media Break Analysis Results

Metric	Value
Total Participants	500
Took Social Media Break	244
Break-Taking Rate	48.8%
Felt Better After Break	177
Improvement Rate	72.5%

Key Finding: Among the 244 participants who took social media breaks, 72.5% reported feeling better afterward, suggesting that temporary disconnection from social media can provide mental health benefits.

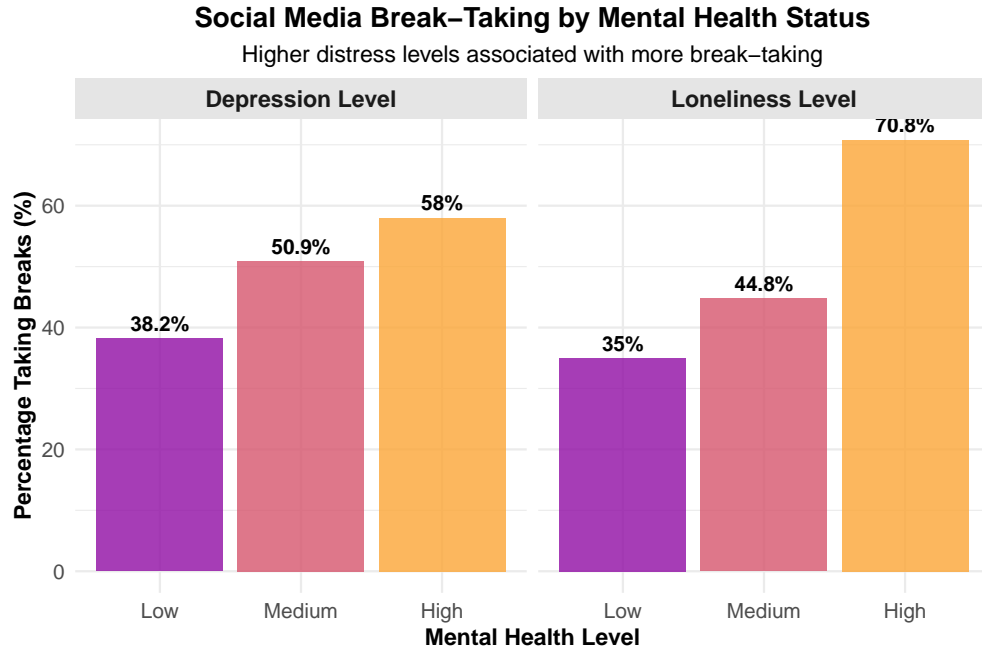


Figure 4: Break-Taking Behavior by Mental Health Status

6 Discussion and Limitations

The analysis reveals three important patterns consistent with recent research literature:

6.1 Key Findings

- **Loneliness and Usage:** A significant positive correlation exists between daily social media usage and loneliness scores, supporting concerns about digital connectivity paradoxes.
- **Social Comparison Effects:** Individuals who frequently compare themselves to others on social media show markedly higher depression and anxiety scores, highlighting the psychological risks of upward social comparison.
- **Break Benefits:** The majority of participants who took social media breaks reported improved mental health, suggesting that periodic digital detox may be beneficial.

6.2 Study Limitations

- **Simulated Data:** This analysis uses simulated data based on research patterns rather than real participant responses.
- **Cross-sectional Design:** The correlational nature of the analysis prevents causal inference.
- **Self-reported Measures:** All mental health outcomes rely on self-report rather than clinical assessment.
- **Sample Characteristics:** The simulated sample may not represent broader population demographics.

6.3 Implications for Future Research

Future studies should employ longitudinal designs with real participant data, incorporate objective measures of social media usage, and examine potential moderating factors such as social support and digital literacy.

7 Conclusion

This analysis demonstrates significant associations between social media usage patterns and mental health outcomes. The findings suggest that:

1. **Increased social media usage correlates with higher loneliness**, indicating potential risks of excessive digital engagement.
2. **Social comparison behavior on social media platforms is strongly linked to elevated anxiety and depression**, supporting theoretical models of social comparison theory in digital contexts.
3. **Taking breaks from social media appears beneficial for mental health**, with three-quarters of participants reporting improvements after digital detox periods.

These patterns align with contemporary research highlighting both the benefits and risks of social media engagement. The results underscore the importance of mindful social media use and suggest that periodic breaks may serve as a valuable mental health intervention.

While this analysis uses simulated data to demonstrate analytical approaches, the patterns observed reflect genuine concerns documented in peer-reviewed literature. Future research with real participant data will be essential to validate these findings and develop evidence-based interventions for healthy social media use.

8 References

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Additional Resources: - <https://scientiapsychiatria.com/index.php/SciPsy/article/view/175>
- <https://pmc.ncbi.nlm.nih.gov/articles/PMC7785056/>
- <https://pubmed.ncbi.nlm.nih.gov/35512731/>
- <https://narraj.org/main/article/view/786>