The Effects of Social Media on Stress

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Abstract

The study we have conducted to see whether exposure to social media will affect the user's stress levels. Participants completed a pre-survey measuring stress, used their preferred social media app for ten minutes, and then completed a post-survey. The results showed a small decrease in stress levels after the treatment, though a T-test indicated that the difference was likely due to chance. While the immediate effects of social media appeared to slightly reduce stress, the findings suggest that short term use may not have a meaningful or consistent impact. Further research is needed to understand how different types of content and long-term usage patterns affect adolescent well-being.

Intro and Background

Social networking platforms have become a central part of adolescent life. What began as simple tools to connect people has evolved into complex, algorithm systems designed to maximize dopamine. As our slide deck says, “apps tailored towards advertisers and profit rather than the users well being… introduces the creation of algorithms to aid users watch time.” These algorithms take advantage of human connection and reward seeking, creating addictive patterns of use.

Adolescents experience both benefits and drawbacks from these platforms. On one hand, social media provides instant communication, helping friendships grow and giving teens a sense of belonging. On the other hand, it can disrupt sleep, increase stress in some ways, and create addiction like behaviors due to constant dopamine stimulation. Our slides note that social media “causes addiction-like symptoms… affecting the prefrontal cortex, leading to lack of self restraint.”

Well being, defined by Merriam-Webster as “the state of being happy, healthy, or prosperous,” becomes harder to maintain when adolescents are exposed to constant information, unpredictable rewards, and algorithm driven. These concerns make it important to study how social media affects stress and emotional health, even in the short term.

Research Question

How does Social Media affect stress levels in individual teenagers?

Hypothesis

We predicted that social networking platforms would decrease the emotional, psychological, and social well-being of adolescents by increasing stress levels.

Variables

Independent Variable: Use of social media platforms (TikTok, Instagram, YouTube, etc.)

Dependent Variable: Emotional, psychological, and social well-being, measured through stress related survey questions

Materials

- Participant provided laptops
- Participant provided mobile phones
- Human consent forms
- Writing utensils
- Pre-survey and post-survey questionnaires
- Excel spreadsheet for data collection
- Patience
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Survey Results

Participants answered three stress-related questions before and after the treatment. The Likert scale ranged from 1–5.

Average pre-survey score: 2.98

Average post-survey score: 2.69

This shows a small decrease of 0.29 points.

Statistical Test

Even though stress levels decreased slightly, the T-test suggests the change was likely random. External factors may have influenced participants' initial stress levels, as the slide mentions: "Data collected may be inaccurate due to stressors outside of parameters." Overall, the data suggests that short-term social media use may temporarily reduce stress, possibly due to dopamine-driven distraction, but the effect is not strong or reliable.

Conclusion

Claim:

Short-term social media use slightly reduced stress levels in adolescents, but the effect was minimal and likely due to chance.

Evidence:

The average stress score decreased from 2.98 to 2.69.The T-test result was 27.22%, indicating low statistical significance. The slide states: The stress levels had a lower stress score after the treatment. The T Test is at 27%, meaning the effect was mostly due to chance.

Reasoning:

Although the data shows a small decrease in stress, the low p value suggests the change was not caused by the treatment. This means the reduction could

be due to random variation or outside stressors rather than social media use itself. The results do not support the hypothesis that social media increases stress in the short term, but they also do not show strong evidence that it reduces stress in a meaningful way.

Future Research

This project identifies several areas worth exploring:

- Compare short-form vs. long-form content.
- Increase the number of participants for stronger statistical power.
- Add more survey questions to measure different aspects of well-being.
- Study long-term effects of daily social media use.
- Control for outside stressors before the experiment.

Bibliography

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