

**Proposal Title:** The Effects of Reduced Social Media Usage on  
Mental Health Among College Students:  
A Randomized Controlled Trial

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## **Abstract**

### **Introduction/Background:**

Excessive use of platforms such as Instagram, TikTok, and Snapchat has been linked to higher rates of anxiety, stress, and depression in college students. As digital use rises, it is important to explore whether limiting social media usage can improve mental health.

### **Purpose statement:**

This study aims to examine whether reducing social media usage can improve mental health among college students.

### **Methods:**

This randomized controlled trial will include 250 college students, randomly assigned to either a control group (unlimited access to Instagram, TikTok, and Snapchat) or an experimental group (limited access to one hour daily). Social media use will be monitored via built-in screen time tools, and time limits for the experimental group will be enforced using password-protected parental controls.

The six-week study will assess mental health outcomes at baseline, midpoint, and post-intervention using the PHQ-9, PSS, and GAD-7. Covariates include sex, cultural background, academic major, class schedule, and employment status. The primary outcome is a reduction in anxiety, depression, and stress among students with restricted social media use.

### **Hypothesis/Hypotheses:**

We hypothesize that students who maintain reduced social media usage will report significantly better mental health when compared to students who retain unrestricted usage.

### **Future Implications:**

This study aims to show that limiting social media use can ease anxiety, stress, and depression in college students. Results could highlight heavy use as a modifiable risk factor and guide campus wellness efforts, public health policies, and digital use recommendations. Future studies should explore longer interventions, broader populations, and which platform features most affect mental health.

### **Keywords:**

Social Media, Mental Health, Students

**Background/Literature Review**

In today's society, social media has become essential to how individuals communicate, access information, and express their individualism. Among college students, platforms such as Instagram, TikTok, and Snapchat are used daily, not just for entertainment, but also for maintaining social connections, academic engagement, and personal expression. However, growing evidence suggests that frequent and unrestricted social media use is associated with negative mental health outcomes, including increased levels of stress, anxiety, and depression.

College students may be especially vulnerable to these effects due to the academic and personal pressures they face. Balancing heavy course loads, jobs, and financial responsibilities can create a high-stress environment. Social media may be used as a stress reliever, but the adverse effects of excessive and long-term use may be harmful. The added strain of constant social media exposure may amplify feelings of inadequacy, isolation, or anxiety, ultimately impacting emotional well-being and academic performance.<sup>1</sup>

**Methods**

Between August 25th and October 6th of 2025, 250 full-time undergraduate students from the University of Central Florida will be recruited using flyers, emails, and virtual bulletin boards. Eligible participants must be 18–25 years old, live within 25 miles of campus, and use Instagram, TikTok, or Snapchat daily. Previous research has shown that high engagement with these platforms is associated with increased symptoms of depression, anxiety, and stress in college populations.<sup>1-3</sup>

Students who are interested will complete an online eligibility screener, and if they fall within the guidelines, they will fill out an informed consent form. Those who qualify will be randomly assigned to one of two groups: the experimental group (n = 125), limited to one hour per day of social media use, or the control group (n = 125), which will continue using social media without any restrictions. Social media usage will be monitored through built-in screen time tools across devices. Parental control settings will be used to enforce the daily limits in the experimental group.<sup>4</sup>

This study will run for six weeks and mental health assessments will be conducted at baseline, midpoint, and again post-intervention using the Perceived Stress Scale (PSS), Patient Health Questionnaire-9 (PHQ-9), and Generalized Anxiety Disorder 7-item scale (GAD-7), both of which have been widely used in studies examining the impact of social media on college student mental health.<sup>2,5</sup>

Covariates will include sex, cultural background, academic major, class schedule, and employment status.<sup>6</sup> Students will be excluded if they (1) do not use the targeted platforms regularly, (2) are unable or unwilling to enable screen tracking and parental controls, or (3) are currently undergoing treatment for a diagnosed psychiatric condition. (4) do not fall within the age range. Variables such as the use of other social media platforms, academic performance, and physical activity are recognized as confounders that may affect the outcome; however, they will not be measured or controlled in this study.<sup>7-8</sup> The primary intended outcome is a reduction in anxiety, depression, and stress levels in the experimental group.

**Design and Procedure**

This study will use a two-arm randomized controlled trial design. After the completion of the eligibility screening and the baseline survey, participants will be randomly assigned to the experimental or control group using a computer-generated randomization sequence. To ensure group balance, participants will be grouped by sex.<sup>3</sup> The experimental group will have a daily one-hour limit across Instagram, TikTok, and Snapchat. Weekly screen time reports will be submitted, and parental control settings will be used to help ensure compliance.<sup>4</sup> The control group will continue using social media as usual. All participants will complete the PHQ-9, GAD-7, and PSS before, midpoint, and after the intervention.<sup>1-2</sup> Both groups will submit weekly screen time logs to track usage.<sup>6-7</sup> All data will be non-identifiable and stored securely on a university-approved protected platform once the study ends. Participants will also be eligible to receive a small incentive for their completion of the study (\$10 gift card).

**Limited Social Media Access**

In the minimized social media access group, the participants will have their daily usage of Instagram, TikTok, and Snapchat restricted to one hour. This limit will be enforced using the built-in screen time monitoring tools and password-protected parental control settings installed on all digital devices. Participants will have to submit weekly screen time reports to the research team to ensure compliance.<sup>4</sup> This study aims to evaluate if reduced exposure to these platforms leads to better mental health outcomes, specifically decreased symptoms of anxiety, depression, and stress.

**Control Group**

In the unlimited social media access group, the participants will continue using Instagram, TikTok, and Snapchat without any restrictions. Their usage will reflect their typical habits and serve as a comparison for assessing the effects of having limited access. Like the experimental group, the control participants will submit weekly screen time reports to track their engagement levels.<sup>6-7</sup> This group will help us determine whether unrestricted social media use maintains, worsens, or has no impact on students' mental health over the six-week study period.

**Measurements****Anxiety**

Anxiety is one of the most common psychological disorders impacting college students. Academic pressures, social transitions, financial concerns, and high levels of screen time, especially on social media, can all contribute to chronic worrying, restlessness, and difficulty concentrating. When left unattended to, anxiety can interrupt sleep, academic performance, and general well-being. In this study, participants' anxiety levels will be measured before, midpoint, and after the six-week study to determine if limiting the amount of social media exposure can help reduce anxiety symptoms. Anxiety will be assessed using the GAD-7, a brief and widely recognized screening tool used to evaluate the degree of generalized anxiety symptoms.<sup>9-10</sup>

In this study, the GAD-7 will be administered three times: once at baseline on August 25th, at the midpoint of the study on August 15th, and again post-intervention on October 6th, to assess changes in anxiety levels correlated with limited social media use.<sup>11</sup>

**Depression**

Depression among college students is a national growing concern, often linked to academic overload, isolation, and online comparisons through social media. Symptoms can include constant sadness, loss of interest in activities, tiredness, and difficulty focusing. Which may interfere with students' academic and personal success. This study seeks to determine whether reducing time spent on Instagram, TikTok, and Snapchat over six weeks will result in decreased depressive symptoms. Depression will be measured using the PHQ-9, a clinically supported, nine-item self-report tool used to assess the intensity of depression symptoms.<sup>10-12</sup> In this study, the PHQ-9 will be administered three times during the study to assess changes in depressive symptoms.

**Stress**

Stress is the psychological reaction to feeling overwhelmed, out of control, or under pressure, which are conditions commonly experienced by college students working through academic, social, and work-related demands. High stress levels can lead to burnout, anxiety, and health issues. This study will explore whether reduced social media use leads to lower stress levels by the end of the six weeks. Stress will be measured using a short version of the PSS, which evaluates how unexpected, uncontrollable, and overwhelming participants feel their lives to be.<sup>13</sup> The PSS will be administered three times during the study to assess changes in symptoms.

**PHQ-9**

The Patient Health Questionnaire-9 is a reliable screening tool used to measure the severity of depressive feelings in clinical and research settings. It contains nine items that reflect the diagnostic criteria for major depressive disorder outlined in the DSM-5, with scores ranging from 0 to 27 based on how often symptoms were experienced.<sup>10,12</sup>

**GAD-7**

The Generalized Anxiety Disorder 7-item scale is a brief, standardized tool used to assess the degree of generalized anxiety feelings. It consists of seven items that align with the diagnostic standards for anxiety disorders as outlined in the DSM-5, with scores ranging from 0 to 21 based on how often symptoms have been experienced.<sup>9-10</sup>

### **Perceived Stress Scale (PSS)**

The Perceived Stress Scale is a widely used psychological tool for measuring the degree to which people perceive circumstances in their lives as stressful. The PSS assesses how unpredictable, uncontrollable, and overwhelming participants find their daily experiences. These items are rated on a 5-point Likert scale ranging from 0 (never) to 4 (very often), with higher total scores showing greater perceived stress. Each administration will reflect stress experienced over the six weeks of the survey, in accordance with the tool's intended design. The PSS is particularly appropriate for use with college students and short-term studies, making it a suitable measure for this study.<sup>13</sup>

### **Data Handling Procedures**

All data collected throughout the study will be managed with the University of Central Florida's ethical research standards and data protection policies.<sup>16</sup> Pre and post-intervention surveys, including the PHQ-9, GAD-7, and PSS administrations, will be given through a secure, university-approved online platform. Weekly screen time logs will be submitted digitally using encrypted forms. Each student will be assigned a unique ID code to ensure anonymity, and all identifiable information will be stored separately on servers. Data will undergo routine quality checks, including weekly audits and double-entry verification for 10% of submissions to maintain accuracy. Records will be retained for five years before being permanently deleted or securely destroyed.<sup>14</sup>

### **Data Analysis**

Data analysis will be conducted using statistical software such as SPSS to evaluate the effects of reduced social media usage on mental health outcomes. The main independent variable is social media usage condition, with participants assigned to either a reduced usage group (limited to one hour daily) or an unrestricted usage control group. Descriptive statistics will be used to summarize participant demographics and baseline characteristics. Independent samples t-tests will compare post-intervention scores on the PHQ-9, GAD-7, and Perceived Stress Scale between the two groups, while paired t-tests will assess within-group changes from baseline to post-intervention.<sup>14</sup> All analyses will be conducted using de-identified data, and results will be visualized through tables and graphs to illustrate differences and trends.

### **Expected Results**

It is anticipated that participants in the experimental group will experience a measurable decrease in symptoms of anxiety, depression, and perceived stress over the six-week intervention period. These anticipated gains will be quantitatively assessed using three validated mental health instruments: the GAD-7, the PHQ-9, and the PSS. The control group, which will continue to use social media without any restrictions, is not expected to show significant improvements; in fact, their mental health outcomes may remain unchanged or worsen slightly due to continued exposure to potentially stress-inducing or anxiety-provoking content. Overall, we

**Figure 1:**

Sample layouts of the PHQ-9 and GAD-7 screen tools used to assess symptoms of depression and anxiety, respectively.

### PHQ-9 & GAD-7

NAME: \_\_\_\_\_  
DATE: \_\_\_\_\_

Over the last 2 weeks, on how many days have you been bothered by any of the following problems?	Not at all	Several Days	More than half the days	Nearly every day
1 Little interest or pleasure in doing things	0	1	2	3
2 Feeling down, depressed or hopeless	0	1	2	3
3 Trouble falling or staying asleep, or sleeping too much	0	1	2	3
4 Feeling tired or having little energy	0	1	2	3
5 Poor appetite or over eating	0	1	2	3
6 Feeling bad about yourself – or that you are a failure or have let yourself or your family down	0	1	2	3
7 Trouble concentrating on things, such as reading the newspaper or watching television	0	1	2	3
8 Moving or speaking so slowly that other people could have noticed, or the opposite – being so fidgety or restless that you have been moving around a lot more than usual	0	1	2	3
9 Thoughts that you would be better off dead or of hurting yourself in some way	0	1	2	3

PHQ9 – Total Score

Over the last 2 weeks, on how many days have you been bothered by any of the following problems?	Not at all	Several Days	More than half the days	Nearly every day
1 Feeling nervous, anxious or on edge	0	1	2	3
2 Not being able to stop or control worrying	0	1	2	3
3 Worrying too much about different things	0	1	2	3
4 Trouble relaxing	0	1	2	3
5 Being so restless it is hard to sit still	0	1	2	3
6 Becoming easily annoyed or irritable	0	1	2	3
7 Feeling afraid as if something awful might happen	0	1	2	3

GAD7 – Total Score

PHQ-9 Depression Severity: 0-4 = none, 5-9 = mild/moderate, 10-14 = moderate/severe, 15-20 = severe depression

GAD-7 Anxiety Severity: 0-5 = none, 6-7 = mild/moderate, 8-10 = moderate/severe, 11-15 = moderate/severe anxiety, 16-21 = severe anxiety

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expect the data to reflect a significant group-by-time interaction, with the experimental group showing the most noticeable mental health improvements. These outcomes would support our central hypothesis that limiting time spent on platforms such as Instagram, TikTok, and Snapchat can lead to better mental health outcomes among college students. If our hypothesis is supported, the findings may have meaningful implications for student wellness programs and digital behavior interventions on college campuses.

### **Limitations**

Our study is designed to assess the impact of social media usage on the mental health of college students. However, several limitations must be acknowledged. First, the study relies on self-reported data for mental health assessments (PHQ-9, GAD-7, and PSS) and weekly screen time reports, which introduces the possibility of social desirability discrimination and recall inaccuracies. These self-reporting issues may compromise the validity and reliability of the data collected.

Second, while parental control settings and built-in screen time monitoring tools will be used to enforce the one-hour daily limit for the experimental group, full compliance cannot be guaranteed. Participants may access social media on alternative or unmonitored devices, diminishing the fidelity of the intervention.

Third, we will not be measuring several potential confounding variables, such as usage of social media platforms beyond Instagram, TikTok, and Snapchat; participants' levels of physical activity; sleep quality; and fluctuations in academic workload. These factors could independently influence mental health outcomes and potentially distort the results.<sup>15</sup>

Lastly, the moderately short duration of the intervention may limit the ability to observe long-term effects of reduced social media usage on mental health. Additionally, the study population is limited to college students, which may restrict the generalizability of the findings to other age groups or populations.

Despite these limitations, the study is expected to contribute valuable insights into the relationship between social media usage and mental health among young adults.<sup>15</sup>

### **Ethical Principles**

This study will be conducted in full accordance with ethical guidelines for research involving human participants, as outlined by the University of Central Florida's Institutional Review Board (IRB) and the principles of the Belmont Report. Informed consent will be obtained from all participants prior to any data collection. The consent process will clearly explain the purpose of the study, procedures involved, potential risks and benefits, confidentiality measures, and participants' rights, including the right to withdraw at any point without penalty. Only students who voluntarily agree to participate and provide digital consent through a secure online form will be enrolled in the study. All collected data will have any participant identifiers removed and be stored on a password-protected device that will only be accessible to staff to ensure confidentiality. Any risks to participants are expected to be minimal. The primary risk is the potential discomfort of answering sensitive questions related to mental health. Resources for mental health support will be provided to all participants regardless of group assignment.

### **Future Implications**

If the findings support the hypothesis that reduced social media usage leads to improved mental health outcomes, this study could have significant implications for both individual well-being and institutional policy. College campuses may consider implementing digital wellness initiatives, such as screen-time education, app tracking, or structured "tech breaks" to promote mental health among college students. The set initiatives could be integrated into first-year orientation programs, counseling services, or even course curricula to promote long-term behavioral change. Additionally, campus-wide awareness campaigns may help normalize reduced screen time and encourage peer support for healthier digital habits. Future research can expand on these results by examining longer intervention periods, different age groups, or the effects of limiting specific platform features. Ultimately, this study could position social media overuse as a modifiable risk factor for anxiety, depression, and stress, providing a practical avenue for mental health promotion in college populations and beyond.

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