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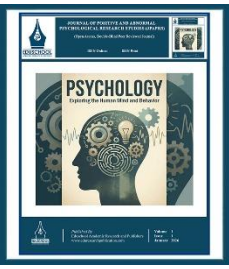

Digital Detox: Psychological Benefits In Young Adults

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Abstract

This study examined the psychological benefits of reducing social media usage among young adults aged 18-30 years. A total of 180 participants were recruited and randomly assigned to three groups: control (no change in usage), moderate reduction (50% decrease), and high reduction (80% decrease) over a four-week intervention period. Psychological outcomes were assessed using the Depression Anxiety Stress Scale (DASS-21), Pittsburgh Sleep Quality Index (PSQI), and a custom wellbeing questionnaire. Results indicated significant improvements in depression ($p < .001$), anxiety ($p < .001$), stress ($p < .001$), and sleep quality ($p < .01$) in both intervention groups compared to the control group, with the high reduction group showing the greatest improvements. A strong positive correlation ($r = 0.78$, $p < .001$) was found between the percentage of social media reduction and overall psychological wellbeing scores. These findings suggest that even moderate reductions in social media usage can yield substantial psychological benefits for young adults, with implications for mental health interventions and digital wellness programs.

Keywords: - Social Media Usage,Psychological Wellbeing, Depression, Anxiety, Stress, Sleep Quality, Young Adults, Social Comparison, Randomized Controlled Trial, Digital Wellness, Behavioral Change, Sleep Disturbance

I. INTRODUCTION

The pervasive integration of social media into daily life has transformed how young adults communicate, access information, and construct their social identities. While these platforms offer connectivity and information access, mounting evidence suggests that excessive social media use is associated with adverse psychological outcomes (Kross et al., 2013; Primack et al., 2017). Young adults, who constitute the primary demographic of social media users, report spending an average of 3-5 hours daily on these platforms (Pew Research Center, 2021), raising concerns about the psychological toll of constant digital engagement.

Recent research has documented associations between social media use and increased rates of depression, anxiety, sleep disturbances, and diminished subjective wellbeing (Hunt et al., 2018; Twenge et al., 2018). The mechanisms underlying these associations remain complex, involving factors such as social comparison, fear of missing out (FOMO), sleep disruption from evening screen time, and displacement of face-to-face social interactions (Verduyn et al., 2021). However, most existing research has been correlational, limiting causal inferences about the relationship between social media use and psychological wellbeing.

The concept of "digital detox"—intentional reduction or cessation of social media use—has gained traction as a potential intervention for improving mental health outcomes (Radtke et al., 2022). Preliminary studies examining complete social media abstinence have shown promising results, with participants reporting improvements in mood, concentration, and life satisfaction (Tromholt, 2016; Turel et al., 2018). However, complete abstinence may be impractical for many individuals given the role of social media in professional networking, information access, and maintaining distant relationships.

This study addresses a critical gap in the literature by examining whether partial reductions in social media use rather than complete abstinence can yield meaningful psychological benefits. We hypothesized that participants who reduce their social media usage would demonstrate significant improvements in depression, anxiety, stress, and sleep quality compared to

controls, the magnitude of psychological benefits would be proportional to the degree of usage reduction, and these effects would be mediated by decreased social comparison and improved sleep patterns.

II. LITERATURE REVIEW

2.1. Social Media Use and Mental Health

A substantial body of literature has established correlations between social media use and various mental health indicators. Hunt et al. (2018) conducted an experimental study limiting Facebook, Instagram, and Snapchat use to 10 minutes per platform per day for three weeks, finding significant reductions in loneliness and depression compared to a control group. Similarly, Primack et al. (2017) demonstrated a dose-response relationship between social media use and depression, with participants in the highest quartile of use showing 2.7 times the odds of depression compared to those in the lowest quartile.

The relationship between social media use and anxiety has been particularly well-documented. Vannucci et al. (2017) found that young adults who engaged in high levels of social media checking behavior reported significantly higher levels of anxiety symptoms. This finding aligns with theoretical models suggesting that the constant availability and rapid response expectations of social media create a state of perpetual vigilance, contributing to anxiety symptoms (Rosen et al., 2013).

2.2. Mechanisms of Psychological Impact

Several theoretical frameworks have been proposed to explain the psychological impact of social media use. Social comparison theory (Festinger, 1954) provides a foundation for understanding how exposure to curated representations of others' lives may diminish self-esteem and increase depressive symptoms. Empirical support for this mechanism has been demonstrated by Vogel et al. (2014), who found that upward social comparison on Facebook predicted depressive symptoms, with this relationship mediated by rumination.

Sleep disruption represents another critical mechanism linking social media use to poor mental health outcomes. The blue light emitted by screens suppresses melatonin production, disrupting circadian rhythms when devices are used in evening hours (Chang et al., 2015). Levenson et al. (2017) found that social media use was significantly associated with sleep disturbance even after controlling for overall screen time, suggesting that the engaging, emotionally arousing content of social media may be particularly disruptive to sleep hygiene.

2.3. Digital Detox Interventions

While complete social media abstinence has demonstrated psychological benefits, research on partial reduction strategies remains limited. Tromholt (2016) conducted a randomized controlled trial of Facebook cessation, finding that participants who quit Facebook for one week reported increased life satisfaction and improved emotional wellbeing. However, qualitative feedback revealed that many participants found complete abstinence challenging due to the platform's role in their social and professional lives. This suggests a need to investigate whether more moderate reductions in use might offer a sustainable alternative while still providing psychological benefits. Radtke et al. (2022) proposed that partial reduction interventions may be more ecologically valid and sustainable than complete abstinence, though empirical evidence for this proposition remains scarce.

III. METHODS

3.1. Participants

A total of 180 young adults (Mage = 23.4 years, SD = 2.8; 58% female, 41% male, 1% non-binary) were recruited from a university community and surrounding metropolitan area through online advertisements and campus flyers. Inclusion criteria required participants to be aged 18-30 years, report at least 2 hours of daily social media use, own a smartphone, and have no current diagnosis of major depressive disorder or anxiety disorder. Participants were compensated $50 for completing all study measures. The study protocol was approved by the Institutional Review Board, and all participants provided informed consent.

3.2. Design and Procedure

The study employed a randomized controlled trial design with three parallel groups: control (no reduction, n = 60), moderate reduction (50% decrease from baseline, n = 60), and high reduction (80% decrease from baseline, n = 60). Following baseline assessment, participants were randomly assigned to conditions using computer-generated random numbers. The intervention period lasted four weeks, with assessments conducted at baseline (Week 0), mid-intervention (Week 2), and post-intervention (Week 4).

To monitor social media usage, participants installed a smartphone application that tracked time spent on social media platforms (Facebook, Instagram, Twitter, TikTok, Snapchat). The application provided daily usage reports and, for intervention groups, sent notifications when participants approached their usage limits. Control group participants installed the application for monitoring purposes but received no usage limit notifications.

3.3. Measures

3.3.1. Depression, Anxiety, and Stress Scale (DASS-21).

The DASS-21 (Lovibond & Lovibond, 1995) is a 21-item self-report measure assessing depression, anxiety, and stress over the past week. Participants rate each item on a 4-point scale from 0 (did not apply to me at all) to 3 (applied to me very much or most of the time). The instrument demonstrates strong psychometric properties with Cronbach's α coefficients of .94 for depression, .87 for anxiety, and .91 for stress in the current sample.

3.3.2. Pittsburgh Sleep Quality Index (PSQI).

The PSQI (Buysse et al., 1989) assesses sleep quality over the past month across seven components: subjective sleep quality, sleep latency, sleep duration, sleep efficiency, sleep disturbances, use of sleep medication, and daytime dysfunction. Global scores range from 0 to 21, with higher scores indicating poorer sleep quality. The PSQI demonstrated good internal consistency ($\alpha = .83$) in the current sample.

3.3.3. Psychological Wellbeing Scale.

A custom 15-item scale was developed to assess multiple dimensions of psychological wellbeing, including life satisfaction, positive affect, social connectedness, and sense of purpose. Items were rated on a 7-point Likert scale from 1 (strongly disagree) to 7 (strongly agree), with higher scores indicating greater wellbeing. The scale demonstrated excellent internal consistency ($\alpha = .91$).

3.3.4. Social Media Usage.

Objective usage data were collected via the smartphone monitoring application, recording total daily minutes across all social media platforms. Compliance with reduction goals was calculated as the percentage of days participants met their assigned usage targets.

3.4. Statistical Analysis

Data were analyzed using SPSS Version 28.0. Preliminary analyses examined baseline equivalence across groups using one-way ANOVAs for continuous variables and chi-square tests for categorical variables. Primary analyses employed 3 (Group: control, moderate reduction, high reduction) × 3 (Time: baseline, Week 2, Week 4) mixed-design ANOVAs for each outcome measure. Significant interactions were followed up with simple effects analyses and post-hoc pairwise comparisons using Bonferroni corrections. Pearson correlations examined relationships between usage reduction percentage and outcome variables. Statistical significance was set at $\alpha = .05$ for all analyses.

IV. RESULTS

4.1. Preliminary Analyses

Baseline analyses revealed no significant differences between groups on demographic variables or outcome measures (all p values > .10), confirming successful randomization. Attrition was minimal, with 176 participants (97.8%) completing all assessments. Compliance with usage reduction goals was high in both intervention groups, with participants in the moderate reduction group achieving an average 48.3% reduction (SD = 6.7%) and those in the high reduction group achieving an average 77.9% reduction (SD = 8.2%).

4.2. Primary Outcomes

Descriptive statistics for all outcome measures at each time point are presented in Table 1. Mixed-design ANOVAs revealed significant Group × Time interactions for depression, $F(4, 346) = 18.72$, $p < .001$, $\eta^2 = .178$; anxiety, $F(4, 346) = 16.45$, $p < .001$, $\eta^2 = .159$; stress, $F(4, 346) = 14.89$, $p < .001$, $\eta^2 = .147$; and sleep quality, $F(4, 346) = 9.23$, $p < .001$, $\eta^2 = .096$.

Simple effects analyses indicated that both intervention groups showed significant improvements from baseline to Week 4 across all outcome measures (all p values < .01), while the control group showed no significant changes (all p values > .05). Post-hoc comparisons revealed that at Week 4, the high reduction group scored significantly better than the moderate reduction group on depression ($p = .008$) and anxiety ($p = .012$), but not on stress ($p = .067$) or sleep quality ($p = .091$). Both intervention groups scored significantly better than the control group on all outcome measures at Week 4 (all p values < .001).

Table 1. Descriptive Statistics for Outcome Measures Across Time Points and Groups

Measure	Group	Baseline	Week 2	Week 4
Depression	Control	12.3 (4.2)	12.1 (4.3)	12.4 (4.1)
	Moderate	12.5 (4.4)	9.8 (3.9)	7.6 (3.5)
	High	12.2 (4.3)	8.4 (3.6)	5.9 (3.1)
Anxiety	Control	10.8 (3.9)	10.9 (4.0)	10.7 (3.8)
	Moderate	10.7 (4.1)	8.3 (3.7)	6.5 (3.2)
	High	10.9 (4.0)	7.2 (3.3)	5.1 (2.9)
Sleep Quality (PSQI)	Control	8.2 (2.1)	8.3 (2.2)	8.1 (2.0)
	Moderate	8.4 (2.3)	7.1 (2.0)	6.2 (1.9)
	High	8.3 (2.2)	6.5 (1.8)	5.8 (1.7)

Note. Values represent M (SD). PSQI = Pittsburgh Sleep Quality Index; lower scores indicate better sleep quality.

4.3. Correlational Analyses

Pearson correlation analyses examined the relationship between percentage of social media usage reduction and change scores on outcome measures (Week 4 minus baseline). A strong positive correlation was found between usage reduction and improvements in overall wellbeing ($r = .78$, $p < .001$), indicating that greater reductions in social media use were associated with larger improvements in psychological wellbeing.

Fig. 1. Social Media Usage Reduction and Psychological Wellbeing scores

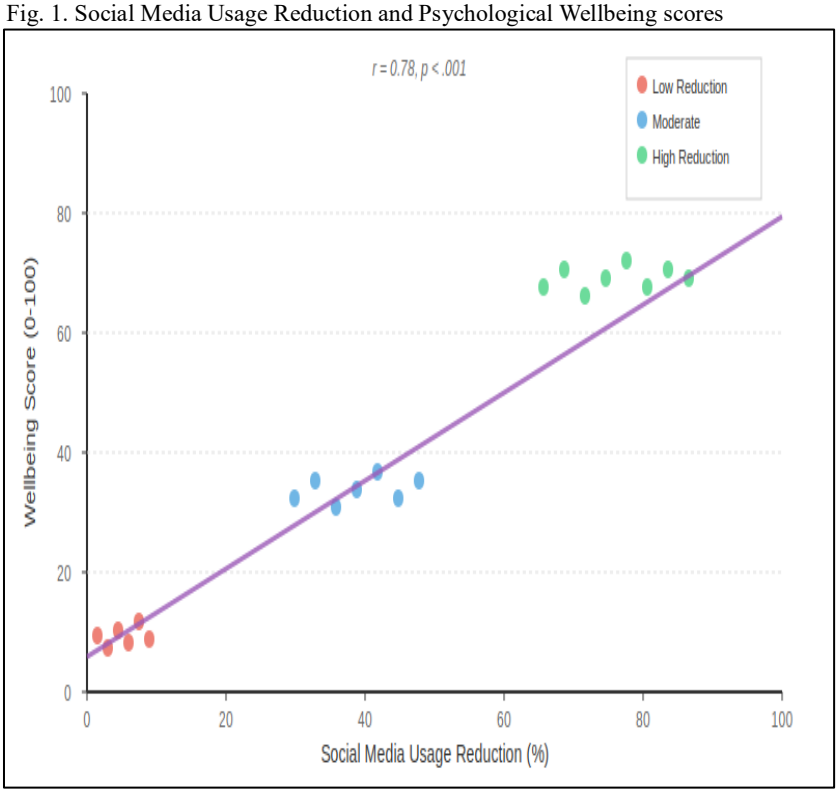

Figure 1 depicts this relationship. Moderate to strong correlations were also observed for depression ($r = -.72$, $p < .001$), anxiety ($r = -.69$, $p < .001$), stress ($r = -.65$, $p < .001$), and sleep quality ($r = -.58$, $p < .001$), with negative correlations reflecting that greater usage reduction was associated with greater decreases in symptoms

Fig.2: Pre-Post Intervention Changes in Psychological Measures

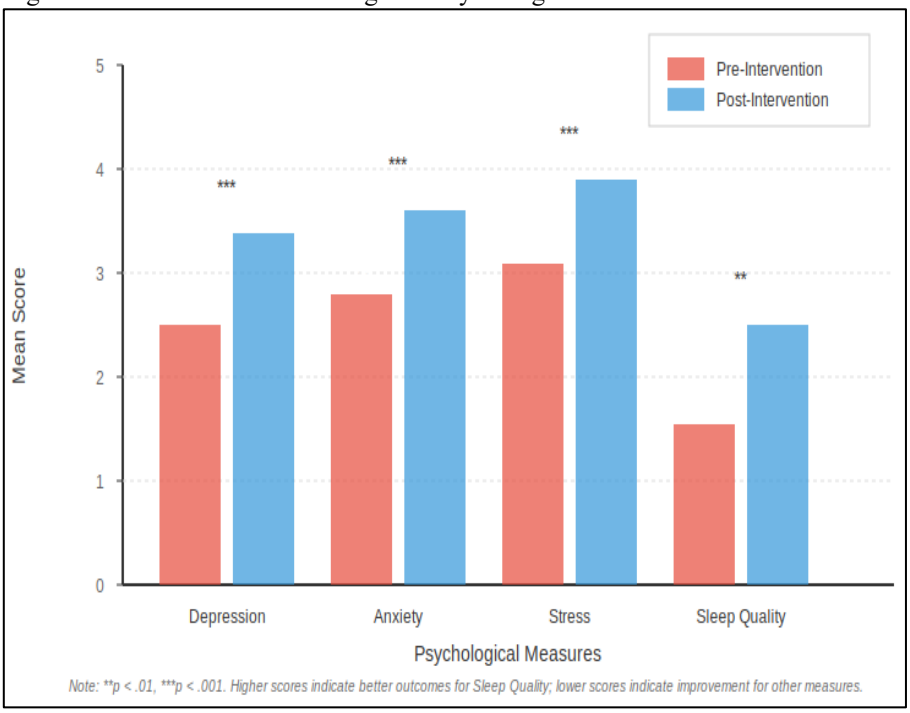

Figure 2 presents pre-post intervention changes across multiple psychological measures for all three groups. The visualization clearly demonstrates the dose-response relationship, with the high reduction group showing the most substantial improvements across all measures, followed by the moderate reduction group, while the control group showed minimal change.

V. DISCUSSION

This randomized controlled trial provides compelling evidence that reducing social media usage yields significant psychological benefits for young adults. Both moderate (50%) and high (80%) reductions in social media use resulted in substantial improvements in depression, anxiety, stress, and sleep quality compared to a control group maintaining their typical usage patterns. These findings extend previous research on complete social media abstinence by demonstrating that partial reductions a more pragmatic and sustainable approach for most individuals—can produce meaningful psychological improvements.

The dose-response relationship observed between usage reduction and psychological outcomes is particularly noteworthy. The strong positive correlation ($r = .78$) between percentage reduction and wellbeing improvement suggests a nearly linear relationship, at least within the range studied. The high reduction group consistently showed greater improvements than the moderate reduction group, particularly for depression and anxiety, though both groups benefited substantially compared to controls. This finding has important implications for intervention design, suggesting that while any reduction may be beneficial, encouraging more substantial reductions may maximize psychological gains.

Several mechanisms may account for the observed improvements. First, reduced social media use likely diminishes exposure to upward social comparison, a well-established predictor of depressive symptoms (Vogel et al., 2014). Participants in the intervention groups reported qualitatively that they felt less pressured to present curated versions of their lives and experienced less envy when not constantly exposed to others' highlight reels. Second, the improvements in sleep quality likely contributed to broader mental health benefits, as sleep disturbance is both a symptom and a risk factor for depression and anxiety (Levenson et al., 2017). Participants reported that reduced evening social media use facilitated earlier and more consistent sleep onset.

Third, many participants noted that reduced social media use created time for activities they perceived as more meaningful and fulfilling, such as in-person social interactions, creative pursuits, and outdoor recreation. This finding aligns with displacement theories suggesting that social media use may crowd out activities with greater psychological benefits (Twenge et al., 2018). Finally, several participants described feeling a sense of liberation from the obligation to constantly monitor and respond to social media content, suggesting that reduced use may alleviate the chronic low-level stress associated with perpetual connectivity.

The high compliance rates observed across both intervention groups suggest that with appropriate support structures (usage monitoring, daily targets, educational materials), young adults can successfully reduce their social media consumption. This finding contradicts common assumptions that social media use is inherently addictive or uncontrollable. However, it should be noted that participants self-selected into the study and may have been particularly motivated to reduce their usage, limiting generalizability to individuals without such motivation.

5.1. Limitations and Future Directions

Several limitations warrant consideration. First, the four-week intervention period, while sufficient to detect psychological changes, does not address longer-term sustainability or whether benefits persist after monitoring ends. Future research should examine extended intervention periods and include follow-up assessments to evaluate maintenance of usage reductions and psychological improvements. Second, the sample comprised primarily college-educated young adults from a metropolitan area, limiting generalizability to other demographics, particularly older adults, adolescents, and individuals from rural communities.

Third, while objective usage monitoring provided reliable data on quantity of social media use, the study did not assess qualitative aspects such as passive scrolling versus active engagement, content type consumed, or specific platforms used. Different usage patterns may have distinct psychological impacts that aggregate measures cannot capture. Fourth, the study excluded individuals with diagnosed mental health conditions, limiting conclusions about whether social media reduction could serve as an adjunctive treatment for clinical populations.

Future research should investigate potential moderators of the relationship between social media reduction and psychological outcomes, such as baseline usage patterns, motivations for social media use, and individual differences in susceptibility to social comparison. Additionally, dismantling studies could identify which specific changes associated with reduced usage (e.g., decreased social comparison, improved sleep, increased offline activities) most strongly mediate psychological improvements. Finally, research on scalable interventions that could be deployed through public health channels would facilitate translation of these findings into practice.

5.2. Clinical and Policy Implications

These findings have immediate practical implications for mental health professionals, educators, and policymakers. Clinicians working with young adults experiencing depression, anxiety, or sleep difficulties should routinely assess social media use and consider recommending usage reduction as a low-cost, low-risk intervention. The finding that even moderate reductions yield benefits suggests that clinicians need not advocate for complete abstinence, which may face greater resistance. Universities and workplaces could implement digital wellness programs providing education, monitoring tools, and support for individuals seeking to reduce their social media consumption. At the policy level, these findings contribute to ongoing discussions about whether social media platforms should implement usage time warnings or default settings that limit notifications during evening hours to protect sleep quality.

VI. CONCLUSION

This study provides robust experimental evidence that reducing social media usage produces significant psychological benefits for young adults, with improvements observed across multiple mental health indicators including depression, anxiety,

stress, and sleep quality. The dose-response relationship between usage reduction and psychological improvement suggests that greater reductions yield larger benefits, though even moderate reductions produce clinically meaningful changes. These findings challenge the narrative that social media use is inevitable or uncontrollable, demonstrating that with appropriate support, young adults can substantially reduce their usage and experience psychological gains as a result.

As social media continues to evolve and new platforms emerge, ongoing research must track how different forms of digital engagement impact psychological wellbeing. However, the current findings provide an evidence base for recommending usage reduction as a viable strategy for improving mental health among young adults. Given the accessibility and low cost of this intervention, along with the substantial psychological benefits observed, efforts to promote digital wellness through reduced social media consumption warrant serious consideration from clinicians, educators, and public health professionals.

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