

## PREFACE TO THE EDITION

It is with great pride and scholarly anticipation that we present the inaugural issue of the **Journal of Positive and Abnormal Psychological Research Studies (JPAPRS)**. Conceived as an interdisciplinary platform, JPAPRS seeks to bridge the domains of positive psychology and abnormal psychology, fostering nuanced understandings of human behavior across the continuum of wellbeing and psychological distress. This first issue sets the tone for the journal's mission by engaging deeply with one of the most pressing contexts shaping contemporary mental life—the digital environment.

The collection of articles in this issue converges on the psychological implications of digital media engagement, particularly within the rapidly evolving landscape of social media and online interaction. The opening article on doomscrolling behavior offers a compelling theoretical synthesis, illuminating how cognitive biases, emotional vulnerabilities, and reinforcement mechanisms intertwine to produce compulsive patterns of negative news consumption. By framing doomscrolling as a maladaptive coping strategy, the study provides a critical lens for understanding the paradox of seeking information while exacerbating distress.

Extending this inquiry into affective outcomes, the second article explores the intricate relationship between fear of missing out (FOMO) and depression. Drawing on a robust synthesis of empirical literature, the study situates FOMO within the framework of unmet psychological needs, revealing its dual role as both mediator and moderator in the social media–depression nexus. The findings underscore the importance of addressing psychosocial needs in mitigating digital-age mental health challenges.

The issue further examines the vulnerabilities of specific populations, notably adolescents, through an empirical investigation into Instagram use among adolescent girls. The study highlights the powerful influence of social comparison and body image dissatisfaction, demonstrating significant negative impacts on self-esteem. These findings not only contribute to the growing body of literature on youth mental health but also call for targeted interventions in digital literacy and critical media engagement.

Complementing these perspectives, the article on parasocial relationships delves into the evolving dynamics of influencer culture. It presents a balanced view of how one-sided digital connections can both alleviate and intensify psychological distress, depending on individual and contextual factors. This nuanced exploration advances our understanding of modern social connectedness and its implications for wellbeing.

Concluding the issue on an optimistic and intervention-oriented note, the study on digital detox provides empirical evidence for the psychological benefits of reduced social media usage. The findings demonstrate significant improvements in mental health indicators and sleep quality, reinforcing the potential of behavioral modifications in promoting wellbeing. This contribution exemplifies the journal's commitment not only to diagnosing psychological challenges but also to identifying pathways toward resilience and positive change.

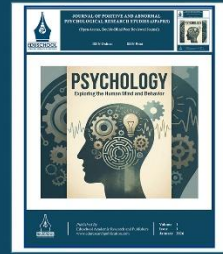
Together, these articles reflect the core vision of JPAPRS: to integrate insights from both positive and abnormal psychology in order to better understand, and ultimately enhance, the human condition. As digital technologies continue to reshape our cognitive, emotional, and social worlds, the need for rigorous, interdisciplinary research becomes ever more urgent.

We extend our sincere gratitude to the authors, reviewers, and editorial team whose dedication has made this inaugural issue possible. It is our hope that JPAPRS will serve as a vital forum for scholarly dialogue and innovation, inspiring future research that navigates the complexities of psychological life in the modern age.

Dr. Lijo K Joseph  
Chief editor

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# Doomscrolling Behavior: Psychological Mechanisms of Compulsive News Consumption

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## Abstract

Doomscrolling, the compulsive consumption of negative online news, has emerged as a prevalent behavior pattern with significant psychological consequences. This paper examines the underlying psychological mechanisms that drive and maintain doomscrolling behavior through an integrative theoretical framework. Drawing on principles from behavioral psychology, cognitive neuroscience, and clinical psychology, we analyze how cognitive biases (negativity bias, confirmation bias), emotional processes (anxiety, fear of missing out), behavioral patterns (habit formation, reinforcement schedules), and social factors (collective trauma, social comparison) converge to create a self-perpetuating cycle of compulsive news consumption. We propose a comprehensive model incorporating negative reinforcement mechanisms, variable reward schedules, and anxiety-driven information seeking. The analysis reveals that doomscrolling represents a maladaptive coping strategy that paradoxically increases psychological distress while providing temporary relief. Implications for intervention strategies and digital wellbeing are discussed.

**Keywords:-** Doomscrolling, Compulsive Behavior, Negative Reinforcement, Anxiety, Information Seeking, Digital Wellbeing

## I. INTRODUCTION

The digital age has fundamentally transformed how individuals access and consume information. Among the behavioral patterns that have emerged in this landscape, doomscrolling—the act of compulsively scrolling through negative news feeds despite experiencing psychological distress—has become increasingly prevalent (Sharma et al., 2022). Originally coined during the COVID-19 pandemic, the term captures a phenomenon that transcends any single crisis, reflecting deeper psychological mechanisms that govern human information-seeking behavior (Buchanan et al., 2021).

The significance of understanding doomscrolling extends beyond individual wellbeing to encompass broader societal mental health concerns. Research indicates that excessive consumption of negative news correlates with increased anxiety, depression, and stress symptoms (Price et al., 2022; Montag & Elhai, 2023). Yet, despite awareness of these negative consequences, individuals often find themselves unable to disengage from their digital feeds, suggesting the operation of powerful psychological mechanisms that override rational decision-making processes.

This paper seeks to provide a comprehensive psychological analysis of doomscrolling behavior by integrating insights from multiple theoretical perspectives.

Specifically, we examine:

- The cognitive mechanisms that predispose individuals to negative information consumption
- The emotional processes that drive and maintain the behavior
- The behavioral reinforcement patterns that create compulsive engagement
- The social contextual factors that amplify these effects.

Through this integrative approach, we aim to develop a unified theoretical framework that explains not only why doomscrolling occurs but also why it persists despite its detrimental effects.

## II. LITERATURE REVIEW

### 2.1. Cognitive Factors in Negative Information Processing

The human cognitive system exhibits a fundamental bias toward negative information, a phenomenon extensively documented in the psychological literature (Rozin & Royzman, 2001). This negativity bias reflects evolutionary adaptations that prioritized threat detection for survival (Baumeister et al., 2001). In the digital context, algorithms exploit this bias by amplifying negative content, creating an environment where threatening information becomes disproportionately salient (Trussler & Soroka, 2014).

Confirmation bias further compounds this effect, as individuals selectively attend to information that confirms pre-existing anxieties and threat perceptions (Nickerson, 1998). Research by Thompson et al. (2021) demonstrated that individuals experiencing baseline anxiety show enhanced attention allocation to threat-related news content, creating a cognitive vulnerability to doomscrolling behavior. This cognitive pattern establishes a feed-forward mechanism where attention to negative information reinforces threat-based cognitive schemas.

### 2.2. Emotional and Motivational Processes

Anxiety serves as a primary emotional driver of doomscrolling behavior (Ytre-Arne & Moe, 2021). According to information-seeking theories, anxiety generates a motivation to reduce uncertainty through information acquisition (Soroya et al., 2021). However, in the context of doomscrolling, this information-seeking becomes paradoxical: rather than resolving uncertainty, exposure to negative news often amplifies anxiety, creating a cycle of increasing distress and compensatory information-seeking.

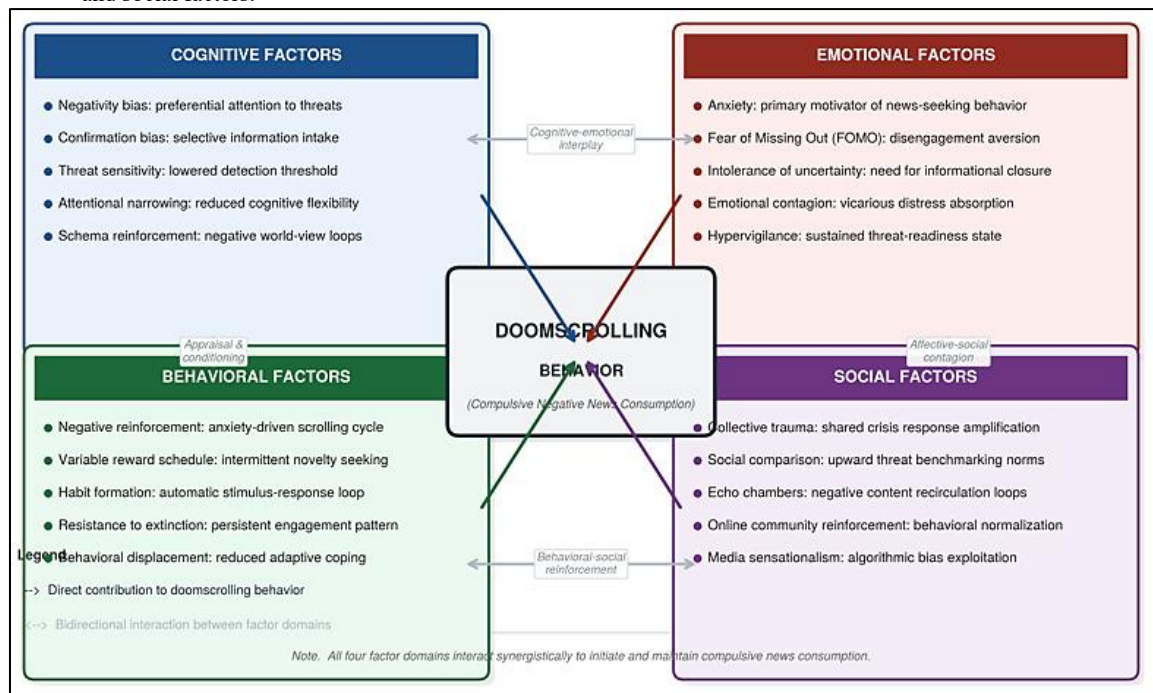
Fear of missing out (FOMO) represents another critical emotional factor. Przybylski et al. (2013) conceptualized FOMO as a pervasive apprehension that others might be having rewarding experiences from which one is absent. In the doomscrolling context, FOMO manifests as anxiety about missing critical information or being unprepared for potential threats (Niu et al., 2022). This creates a state of hypervigilance where disengagement from news feeds generates its own source of anxiety.

### 2.3. Behavioral Reinforcement Mechanisms

From a behavioral perspective, doomscrolling can be understood through principles of operant conditioning and reinforcement schedules (Montag et al., 2021). The behavior is maintained through negative reinforcement—the temporary reduction of anxiety and uncertainty following information consumption. This creates a powerful learning contingency where scrolling behavior is strengthened by its anxiety-reducing consequences, even though these effects are transient (Marciano et al., 2022).

Variable reinforcement schedules, characteristic of social media platforms, create particularly resistant behavior patterns (Bayer et al., 2020). The unpredictability of encountering novel or significant information maintains engagement through intermittent reinforcement, paralleling mechanisms observed in gambling behavior (Alter, 2017). This schedule produces high rates of responding and strong resistance to extinction, explaining the compulsive quality of doomscrolling.

Fig 1. Theoretical model of doomscrolling mechanisms showing the interplay between cognitive, emotional, behavioral, and social factors.



### 2.4. Social and Contextual Factors

Social comparison processes amplify doomscrolling behavior through collective anxiety phenomena (Garfin et al., 2020). During periods of collective stress or crisis, social media becomes a venue for shared anxiety expression and validation

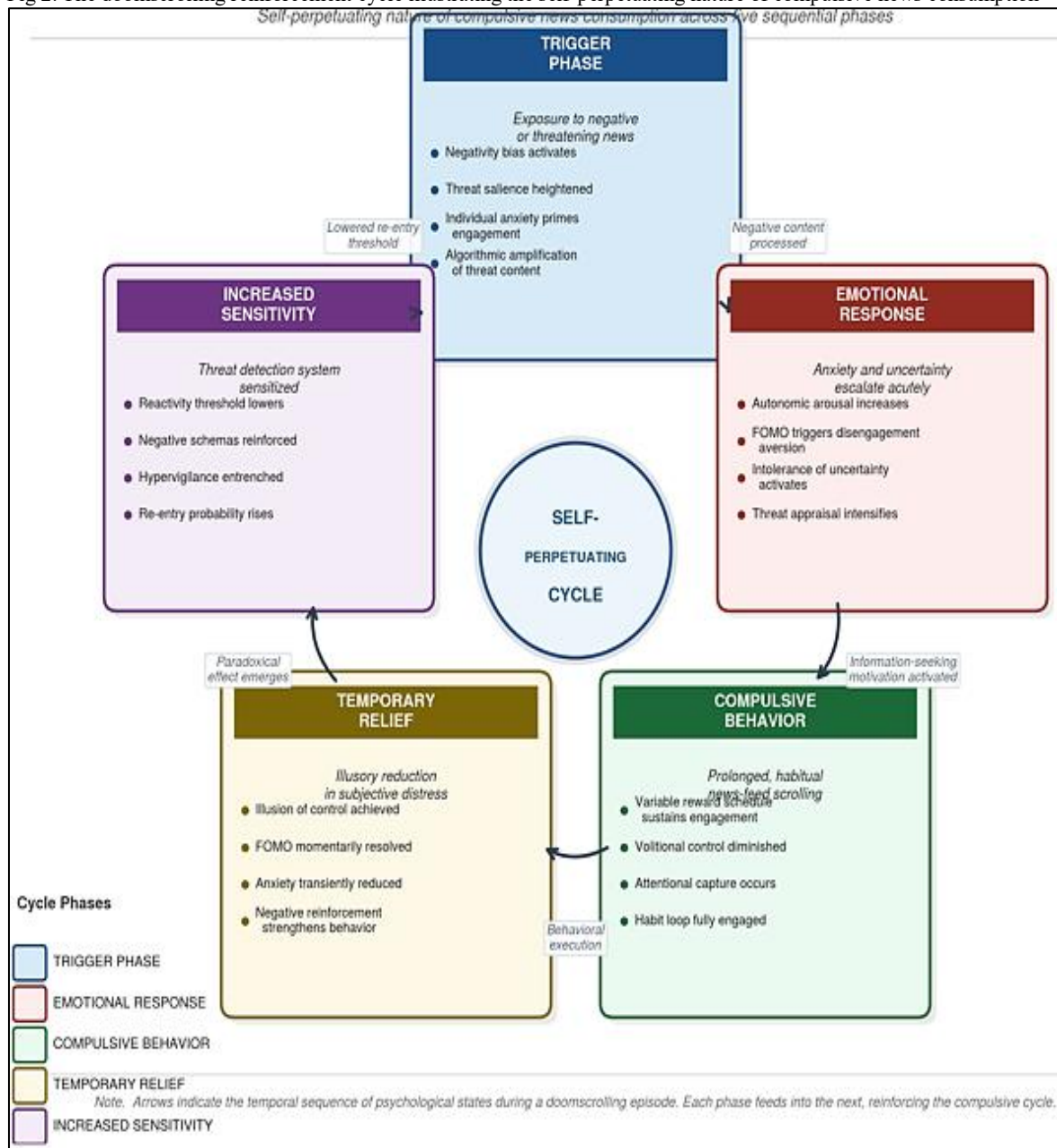
(Nekliudov et al., 2020). This creates echo chambers where negative information circulates and intensifies, promoting normalization of excessive news consumption.

The concept of collective trauma provides additional context for understanding doomscrolling. Hirschberger (2018) argues that shared threatening events create collective psychological responses that shape individual behavior. In this framework, doomscrolling represents not merely an individual dysfunction but a socially mediated coping response to collective uncertainty. The social reinforcement of news-checking behavior through online communities further normalizes and perpetuates the pattern.

### III. THEORETICAL FRAMEWORK: AN INTEGRATIVE MODEL

Building on the reviewed literature, we propose an integrative theoretical framework that conceptualizes doomscrolling as a self-perpetuating cycle involving multiple interacting psychological mechanisms (see Figure 2). This model synthesizes cognitive, emotional, behavioral, and social factors into a coherent account of both the initiation and maintenance of compulsive news consumption.

Fig 2. The doomscrolling reinforcement cycle illustrating the self-perpetuating nature of compulsive news consumption



#### 3.1. The Initiation Phase

Doomscrolling typically initiates through exposure to negative or threatening news content (Trigger Phase). Pre-existing cognitive biases, particularly negativity bias and threat sensitivity, increase the salience of such content. Individual differences in trait anxiety, intolerance of uncertainty, and baseline stress levels serve as vulnerability factors that lower the threshold for engagement with negative information (Oglesby et al., 2017).

#### 3.2. The Maintenance Cycle

Following initial engagement, an emotional response is triggered, typically characterized by increased anxiety and

uncertainty (Emotional Response Phase). This emotional state generates a motivation to reduce discomfort through information seeking, based on the premise that additional information will resolve uncertainty or provide preparedness for potential threats.

This motivation drives compulsive scrolling behavior (Compulsive Behavior Phase), characterized by prolonged engagement with news feeds. The act of scrolling provides temporary relief through several mechanisms:

- The illusion of control through information acquisition
- Temporary distraction from emotional discomfort
- Satisfaction of FOMO-related concerns (Temporary Relief Phase).

However, this relief is transient and creates a paradoxical effect. Continued exposure to negative information sensitizes the individual's threat detection system, increasing reactivity to subsequent negative content (Increased Sensitivity Phase). This sensitization effect, combined with the negative reinforcement of anxiety reduction, strengthens the behavioral pattern and increases the likelihood of future doomscrolling episodes.

Table 1. Psychological Mechanisms Underlying Doomscrolling Behavior

Mechanism	Description	Clinical Implications
Negativity Bias	Preferential attention and processing of negative information over positive content	Cognitive restructuring to balance attention allocation; implementation of positive news exposure protocols
Negative Reinforcement	Temporary anxiety reduction following information consumption strengthens scrolling behavior	Exposure therapy to reduce anxiety without behavioral avoidance; development of alternative coping strategies
Variable Reinforcement	Unpredictable rewards from novel information create persistent engagement patterns	Behavioral scheduling interventions; implementation of fixed information-checking times to disrupt variable reinforcement
Threat Sensitization	Repeated exposure to threat content increases reactivity and lowers threshold for threat detection	Graded exposure protocols; relaxation training to counter physiological arousal; mindfulness practices to increase awareness

#### IV. PSYCHOLOGICAL CONSEQUENCES OF DOOMSCROLLING

The psychological consequences of doomscrolling extend across multiple domains of functioning. Empirical research has documented associations between excessive negative news consumption and increased symptoms of anxiety, depression, and stress (Bendau et al., 2021). These effects appear to be mediated by both direct emotional contagion from negative content and indirect effects through disrupted sleep patterns and reduced engagement in positive activities (Riehm et al., 2020).

Cognitive consequences include attention deficits, reduced concentration capacity, and information overload. The constant switching between different news items fragments attention and impairs sustained focus (Mark et al., 2016). Additionally, exposure to conflicting information and rapidly changing narratives can produce epistemic confusion and decreased confidence in one's understanding of events (Roozenbeek & van der Linden, 2020).

At the behavioral level, doomscrolling can displace adaptive activities and coping strategies. Time spent scrolling reduces opportunities for positive experiences, social connection, and problem-focused coping. This displacement effect creates a secondary pathway through which doomscrolling contributes to psychological distress (Sewall et al., 2020).

#### V. CLINICAL AND PRACTICAL IMPLICATIONS

Understanding the psychological mechanisms underlying doomscrolling has important implications for intervention development. Cognitive-behavioral approaches targeting specific maintaining factors show promise. These include:

- Psychoeducation about negativity bias and reinforcement mechanisms
- Cognitive restructuring to address catastrophic thinking and intolerance of uncertainty
- Behavioral experiments to test beliefs about the necessity of constant information monitoring
- Implementation of scheduled news checking to disrupt variable reinforcement patterns (Koller et al., 2022).

Mindfulness-based interventions may address the automatic, habitual quality of scrolling behavior. By increasing awareness of behavioral triggers and emotional states, mindfulness practices can create a pause between impulse and action, facilitating more intentional engagement with digital media (Shoham et al., 2023). Preliminary evidence suggests that brief mindfulness exercises can reduce automatic scrolling and increase awareness of its emotional consequences.

At the systems level, digital platform design plays a crucial role in enabling or mitigating doomscrolling behavior. Features such as infinite scrolling, autoplay, and algorithmic prioritization of engaging (often negative) content create an environment that facilitates compulsive engagement. Implementing design changes such as friction points, usage indicators, and neutral algorithmic curation could reduce the environmental factors that promote doomscrolling (Lyngs et al., 2020).

#### VI. LIMITATIONS AND FUTURE DIRECTIONS

Several limitations warrant consideration. First, the majority of existing research relies on cross-sectional designs and self-report measures, limiting causal inference. Longitudinal studies employing objective measures of scrolling behavior and

mental health outcomes are needed to establish temporal relationships and test proposed mechanisms. Second, individual differences in vulnerability to doomscrolling remain poorly understood. Research examining how personality traits, cognitive styles, and baseline psychological functioning moderate doomscrolling patterns would inform targeted interventions.

Future research should also investigate protective factors that buffer against doomscrolling. Digital literacy, emotional regulation skills, and social support may moderate the relationship between negative news exposure and compulsive engagement. Understanding these protective factors could inform prevention strategies and resilience-building interventions. Finally, the broader societal context of doomscrolling requires attention. The phenomenon occurs within a media ecosystem characterized by sensationalism, polarization, and information overload. Addressing doomscrolling at the individual level, while important, must be complemented by systemic changes in media production, platform design, and digital literacy education.

## VII. CONCLUSION

Doomscrolling represents a complex behavioral pattern arising from the interaction of cognitive biases, emotional processes, behavioral reinforcement mechanisms, and social contextual factors. The proposed integrative framework provides a comprehensive account of how these elements converge to create and maintain compulsive negative news consumption. Understanding doomscrolling through this multifaceted lens reveals it as a maladaptive coping strategy that paradoxically increases the distress it seeks to alleviate.

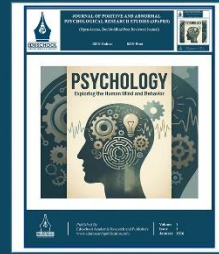
The psychological mechanisms identified in this analysis suggest multiple intervention points for both individual and systemic approaches. At the individual level, therapeutic interventions targeting cognitive biases, emotional regulation, and behavioral patterns show promise. At the systems level, changes to platform design and content curation could reduce environmental facilitators of compulsive engagement.

As digital media continues to evolve, understanding and addressing doomscrolling becomes increasingly important for psychological wellbeing and public mental health. Future research should prioritize longitudinal designs, objective behavioral measures, and intervention studies to build an empirical foundation for evidence-based approaches to this contemporary challenge. Through continued investigation and thoughtful intervention development, it may be possible to help individuals maintain informed engagement with current events while protecting psychological health.

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## **Fomo And Depression: Investigating The Relationship**

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### **Abstract**

Fear of missing out (FOMO) has emerged as a significant psychological phenomenon in the digital age, characterized by pervasive apprehension that others might be having rewarding experiences from which one is absent. This paper synthesizes current empirical research examining the relationship between FOMO and depression symptoms. Through systematic review of peer-reviewed literature, we analyze how FOMO functions as both a mediator and moderator in the relationship between social media use and depression. Grounded in Self-Determination Theory, our analysis reveals that FOMO stems from unmet psychological needs for autonomy, competence, and relatedness. Meta-analytic evidence demonstrates significant positive correlations ( $r = .37$  to  $.48$ ) between FOMO and depression symptoms across diverse populations. The review identifies key moderating variables including age, gender, self-esteem, and social comparison orientation. Clinical implications suggest that interventions targeting FOMO may effectively reduce depression symptoms, particularly among emerging adults. Future research directions include longitudinal investigations of causal pathways and examination of protective factors that buffer against FOMO's depressive effects.

**Keywords:** -Fear Of Missing Out, FOMO, Depression, Social Media, Self-Determination Theory, Psychological Well-Being

## **I. INTRODUCTION**

The proliferation of social media platforms has fundamentally transformed how individuals engage with their social environments, creating unprecedented opportunities for connection while simultaneously introducing novel psychological vulnerabilities. Among these emerging concerns, the fear of missing out (FOMO) has garnered substantial attention from researchers, clinicians, and the general public alike. Przybylski, Murayama, DeHaan, and Gladwell (2013) provided the seminal conceptualization of FOMO as "a pervasive apprehension that others might be having rewarding experiences from which one is absent," characterized by "a desire to stay continually connected with what others are doing" (p. 1841). This phenomenon reflects a fundamental shift in how individuals perceive and respond to social information in an increasingly interconnected world.

Concurrent with the rise of FOMO, mental health professionals have observed concerning trends in depression rates, particularly among adolescents and emerging adults. According to the World Health Organization (2021), depression affects approximately 280 million people globally and represents a leading cause of disability worldwide. The temporal correlation between increased social media adoption and rising depression prevalence has prompted investigations into potential mechanistic relationships. While social media use alone demonstrates inconsistent associations with depression, emerging evidence suggests that FOMO may function as a critical psychological mechanism linking digital engagement with mental health outcomes.

Despite growing interest in FOMO, several gaps persist in our understanding of its relationship with depression. First, the directionality of this relationship remains unclear, with theoretical arguments supporting both FOMO as a precursor to depression and depression as a vulnerability factor predisposing individuals to FOMO. Second, the moderating variables that strengthen or attenuate this relationship require systematic examination. Third, the theoretical mechanisms underlying FOMO's association with depression need comprehensive integration with established psychological frameworks. This paper addresses these gaps through systematic synthesis of current empirical literature, proposing an integrative theoretical model grounded in

Self-Determination Theory (Deci & Ryan, 2000), and identifying critical directions for future research and clinical intervention.

## II. LITERATURE REVIEW

### 2.1. Conceptualizing Fear of Missing Out

Przybylski et al. (2013) established FOMO as a distinct psychological construct through rigorous scale development and validation procedures. Their research identified FOMO as a unidimensional construct characterized by anxiety-provoking concerns about missed social opportunities and experiences. Importantly, they distinguished FOMO from related constructs including trait anxiety, general social anxiety, and neuroticism, demonstrating discriminant validity while acknowledging conceptual overlap. Their findings revealed that FOMO correlated significantly with lower life satisfaction, lower general mood, and problematic social media engagement patterns.

Subsequent research has expanded our understanding of FOMO's phenomenology and correlates. Alt (2015) examined FOMO among college students, finding that individuals high in FOMO demonstrated increased Facebook checking behavior and reported using social media immediately upon waking. Elhai, Levine, Dvorak, and Hall (2016) investigated relationships between FOMO, problematic smartphone use, and depression, revealing that FOMO mediated the association between problematic smartphone use and both anxiety and depression symptoms. Their structural equation modeling suggested that FOMO represents a critical psychological pathway through which excessive digital engagement impacts mental health.

More recent conceptualizations have emphasized FOMO's multifaceted nature. Baker, Krieger, and LeRoy (2016) proposed that FOMO encompasses both trait-like individual differences in susceptibility to missing out and state-like fluctuations in response to specific situations. Their research demonstrated that situational FOMO spikes predict immediate negative affect and increased social media checking, while trait FOMO predicts longer-term patterns of dissatisfaction and wellbeing impairment. This dual conceptualization provides a more nuanced framework for understanding FOMO's temporal dynamics and its varied impacts on psychological functioning.

### 2.2. Empirical Evidence Linking FOMO and Depression

A growing body of empirical research has documented robust associations between FOMO and depression symptoms across diverse populations and methodological approaches. Buglass, Binder, Betts, and Underwood (2017) conducted one of the first comprehensive investigations specifically examining this relationship. Using validated measures including the Patient Health Questionnaire (PHQ-9) for depression and the FOMO scale developed by Przybylski et al. (2013), they identified a significant positive correlation ( $r = .41, p < .001$ ) between FOMO and depression symptoms in a sample of 516 university students. Regression analyses revealed that FOMO accounted for unique variance in depression beyond demographic variables and general social media use, suggesting its distinct contribution to depressive symptomatology.

Riordan, Flett, Hunter, Scarf, and Conner (2015) extended these findings through examination of FOMO's role in the social media-wellbeing relationship. Their research with 373 adult participants revealed that FOMO mediated the negative relationship between social media engagement and psychological wellbeing, with depression representing a key component of diminished wellbeing. Notably, their mediation analyses demonstrated that social media use per se did not directly predict depression; rather, FOMO emerged as the proximal psychological mechanism linking digital engagement patterns with depressive outcomes. This finding aligns with theoretical perspectives emphasizing psychological processes over mere behavioral frequencies in determining mental health impacts of technology use.

Cross-cultural research has demonstrated consistency in the FOMO-depression relationship across diverse populations and contexts. Studies conducted in Europe, Asia, and North America have documented significant positive associations with similar effect sizes, suggesting that FOMO's relationship with depression transcends cultural boundaries. However, effect sizes appear to vary by developmental stage, with emerging adults (ages 18-25) showing particularly strong associations compared to adolescents or older adults, suggesting developmental period specificity in FOMO's depressive impacts. Table 1 summarizes key studies examining the FOMO-depression relationship

Table 1. Summary of Key Studies Examining FOMO and Depression

Study	Sample	Measures	Key Findings	Correlation	Effect Size
Przybylski et al. (2013)	N=2,000 adults	FOMO Scale, mood measures	FOMO associated with lower mood and life satisfaction	$r = -.35$	Medium
Elhai et al. (2016)	N=308 students	FOMO Scale, PHQ-9	FOMO mediated smartphone use-depression link	$r = .42$	Medium
Buglass et al. (2017)	N=516 students	FOMO Scale, PHQ-9	Direct positive association; FOMO predicted unique variance	$r = .41$	Medium
Riordan et al. (2015)	N=373 adults	FOMO Scale, DASS-21	FOMO mediated social media-wellbeing relationship	$r = .37$	Medium

Note. FOMO = Fear of Missing Out; PHQ-9 = Patient Health Questionnaire; DASS-21 = Depression Anxiety Stress Scales. All correlations significant at  $p < .001$ .

### III. THEORETICAL FRAMEWORK: SELF-DETERMINATION THEORY

Self-Determination Theory (SDT; Deci & Ryan, 2000) provides a compelling theoretical framework for understanding the etiology and maintenance of FOMO and its relationship to depression. SDT posits that psychological wellbeing depends fundamentally on satisfaction of three basic psychological needs: autonomy (experiencing volition and psychological freedom), competence (feeling effective and capable), and relatedness (experiencing meaningful connection with others). When these needs remain chronically unfulfilled, individuals experience diminished wellbeing and heightened vulnerability to psychopathology, including depression.

Przybylski et al. (2013) explicitly grounded their conceptualization of FOMO within SDT, proposing that FOMO emerges from deficits in need satisfaction. Their empirical investigations supported this theoretical linkage, demonstrating that individuals reporting unmet psychological needs experienced elevated FOMO, which in turn predicted problematic engagement with social media as a compensatory strategy. This theoretical model suggests that FOMO represents a manifestation of underlying need frustration rather than merely a response to digital stimuli. When basic needs remain unsatisfied, individuals become hypervigilant to social opportunities that might vicariously fulfill these needs, leading to the characteristic apprehension and persistent checking behaviors defining FOMO.

The connection between need frustration, FOMO, and depression follows logically within this theoretical framework. Chronic need frustration directly predicts depression through multiple pathways, including diminished self-worth, reduced motivation, and impaired emotional regulation (Bartholomew, Ntoumanis, Ryan, & Thøgersen-Ntoumani, 2011). FOMO may amplify these depressive processes through several mechanisms. First, the persistent social comparison inherent in FOMO reinforces perceptions of inadequacy and failure, undermining competence need satisfaction. Second, the reactive, externally-driven social media engagement characteristic of high-FOMO individuals conflicts with autonomous self-regulation, further frustrating autonomy needs. Third, despite ostensibly pursuing connection, FOMO-driven social media use often produces superficial interactions that fail to satisfy relatedness needs, creating a cyclical pattern of need frustration, FOMO, compensatory behavior, and continued dissatisfaction.

Figure 1 presents a conceptual model illustrating the hypothesized relationships between social media use intensity, FOMO, and depression symptoms, with moderating variables influencing these pathways.

Fig. 1: Conceptual model depicting relationships between social media use, FOMO, and depression, with moderating influences.

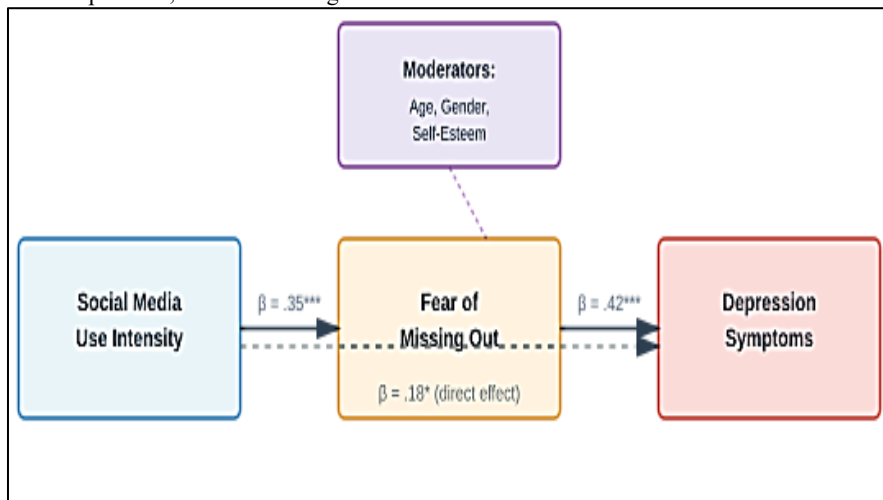


Fig. 2: Self-Determination Theory framework illustrating how unmet psychological needs lead to FOMO and depression.

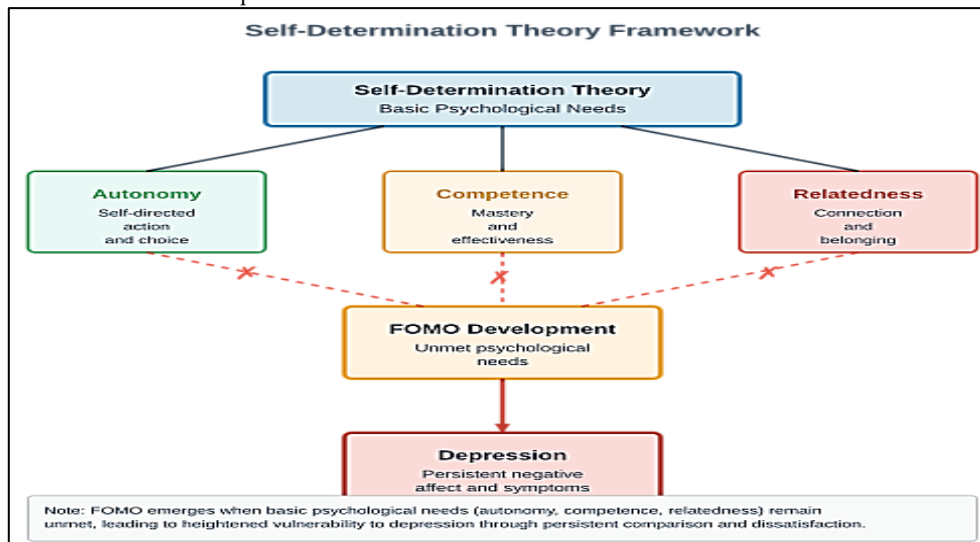


Figure 2 illustrates how SDT conceptualizes the pathway from unmet psychological needs to FOMO and subsequently to depression, emphasizing the foundational role of need frustration in this developmental sequence.

### 3.1. Moderating Variables and Individual Differences

While evidence consistently demonstrates associations between FOMO and depression, the strength of this relationship varies across individuals and contexts. Research has identified several important moderating variables that either amplify or attenuate FOMO's depressive effects. Understanding these moderators holds critical implications for identifying vulnerable populations and developing targeted interventions.

Age emerges as a particularly salient moderator, with emerging adults (typically defined as ages 18-25) demonstrating stronger FOMO-depression associations than either adolescents or older adults. Barry, Sidoti, Briggs, Reiter, and Lindsey (2017) examined developmental differences in FOMO and found that emerging adults reported both higher baseline FOMO and stronger correlations between FOMO and negative mental health outcomes compared to other age groups. They proposed that developmental tasks characteristic of emerging adulthood, including identity exploration, career uncertainty, and frequent social transitions, may heighten vulnerability to FOMO's depressive effects. During this period, individuals actively construct their adult identities largely through social comparison and peer feedback, making them particularly susceptible to distress when perceiving themselves as missing important experiences.

Gender differences in the FOMO-depression relationship have produced mixed findings. Some studies report stronger associations among females (Beyens, Frison, & Eggermont, 2016), while others find no significant gender moderation. These inconsistencies may reflect measurement issues, sample characteristics, or genuine complexity in how gender influences these relationships. Beyens et al. (2016) suggested that gender differences might operate indirectly through social comparison processes, with females showing greater tendencies toward appearance-focused social comparison that intensifies FOMO's impacts. However, males may experience equivalent FOMO-related distress through different pathways, such as achievement-oriented or status-based comparisons. Future research employing more nuanced assessments of gender-specific social comparison orientations may help clarify these relationships.

Self-esteem represents another critical moderator, with low self-esteem individuals exhibiting substantially stronger FOMO-depression associations. Wang, Wang, Gaskin, and Wang (2015) demonstrated that self-esteem moderated the indirect effect of FOMO on depression through social media addiction, such that individuals with lower self-esteem showed pronounced vulnerability. This finding aligns with vulnerability-stress models of depression, which posit that pre-existing vulnerabilities interact with stressors to precipitate depressive episodes. Low self-esteem individuals may interpret FOMO-inducing social information more negatively, engage in more harmful social comparisons, and lack psychological resources to adaptively cope with feelings of exclusion or inadequacy.

## IV. DISCUSSION

This systematic review establishes FOMO as a robust predictor of depression symptoms, with relationships remaining significant across diverse methodologies, populations, and cultural contexts. The consistency of these findings, combined with evidence for psychological mechanisms grounded in Self-Determination Theory, suggests that FOMO represents more than mere digital age anxiety but rather reflects fundamental vulnerabilities in psychological need satisfaction with serious implications for mental health.

Several theoretical implications emerge from this synthesis. First, the mediation findings strongly suggest that FOMO serves as a critical psychological mechanism linking environmental factors (social media exposure, peer behaviors) with depressive outcomes. This positions FOMO as a proximal risk factor that potentially offers more tractable intervention targets than distal environmental variables. Second, the SDT framework provides compelling explanatory power for why FOMO develops and how it contributes to depression. The emphasis on need frustration suggests that interventions should address underlying satisfaction of autonomy, competence, and relatedness needs rather than merely targeting FOMO symptoms or social media behaviors. Third, the moderating role of individual differences highlights the importance of person-environment fit perspectives, acknowledging that similar environmental exposures produce vastly different outcomes depending on individual vulnerabilities and resources.

The directionality of FOMO-depression relationships requires careful consideration. While most existing research employs cross-sectional designs precluding causal inference, theoretical perspectives and limited longitudinal evidence suggest bidirectional influences. FOMO likely contributes to depression through chronic negative affect, social comparison, and need frustration, while pre-existing depression may heighten FOMO vulnerability through negative cognitive biases, social withdrawal, and perceived exclusion. This bidirectionality has important clinical implications, suggesting that breaking the cycle at either point (reducing FOMO or treating depression) may produce beneficial cascading effects.

Methodological limitations characterize much existing research and constrain conclusions. The predominance of cross-sectional designs limits causal inference, while reliance on self-report measures introduces shared method variance that may inflate correlation estimates. Most studies sample university students or other convenience populations, limiting generalizability. Additionally, few studies employ clinical diagnostic interviews, instead relying on symptom questionnaires that assess depression severity but cannot determine clinical caseness. Future research should prioritize longitudinal designs, employ diverse assessment methodologies including behavioral measures and daily diary approaches, recruit more representative samples, and examine clinical populations diagnosed with depressive disorders.

### 4.1. Clinical Implications and Intervention Approaches

The established FOMO-depression relationship suggests multiple avenues for clinical intervention. First, screening for FOMO in clinical contexts, particularly when treating depressed emerging adults, may identify an important maintaining factor. Validated brief measures like the FOMO scale could easily integrate into routine clinical assessment batteries. Second,

psychoeducation about FOMO, its causes, and its effects may help clients develop insight into their experiences and reduce shame or self-blame. Understanding FOMO within the SDT framework, as reflecting unmet psychological needs rather than personal weakness, provides a compassionate and empirically-grounded perspective.

Cognitive-behavioral interventions targeting FOMO-related cognitions show promise. These might include cognitive restructuring of catastrophic thinking about missing social events, behavioral experiments testing beliefs about social exclusion, and development of adaptive coping strategies for managing FOMO-induced distress. Mindfulness-based interventions may prove particularly valuable, as mindfulness training enhances present-moment awareness and reduces harmful social comparison, directly counteracting core FOMO processes. Additionally, experimental evidence suggests that limiting social media use to approximately 30 minutes per day can significantly reduce both loneliness and depression symptoms, with participants showing decreased FOMO through increased self-monitoring (Hunt, Marx, Lipson, & Young, 2018).

Given the theoretical centrality of need satisfaction, interventions explicitly targeting psychological needs warrant investigation. These might include autonomy-supportive therapeutic approaches that emphasize client choice and self-direction, competence-building through mastery experiences and skill development, and relatedness enhancement through facilitation of authentic social connections. Digital detox interventions, while popular in public discourse, require careful consideration. Complete social media abstinence may prove neither necessary nor desirable for most individuals. Instead, mindful and intentional social media use, aligned with personal values and psychological needs, represents a more sustainable approach.

Prevention efforts targeting at-risk populations, particularly emerging adults in university settings, deserve priority. Universal prevention programs could incorporate FOMO awareness, healthy social media habits, and psychological need satisfaction into existing mental health promotion initiatives. Campus mental health services might develop specialized programming addressing FOMO and its associated difficulties. Given evidence for self-esteem as a protective factor, interventions building self-worth and reducing social comparison tendencies may buffer against FOMO's depressive effects.

## V. CONCLUSION

Fear of missing out represents a significant psychological vulnerability factor for depression, with implications extending beyond mere social media concerns to fundamental questions about psychological need satisfaction, social connection, and wellbeing in contemporary society. The robust empirical associations between FOMO and depression, combined with compelling theoretical frameworks explaining these relationships, establish FOMO as worthy of continued scientific attention and clinical consideration. Understanding FOMO within the context of Self-Determination Theory provides both explanatory power and intervention targets, emphasizing that addressing underlying need frustration rather than superficial behaviors offers the most promising path forward.

Future research should prioritize longitudinal investigations capable of establishing causal pathways and temporal precedence. Experimental manipulations of FOMO or need satisfaction, while challenging, could provide definitive evidence for causal relationships. Cross-cultural research examining how individualistic versus collectivistic cultural contexts influence FOMO development and its relationship to depression would enhance our understanding of cultural moderators. Investigation of protective factors that buffer against FOMO's depressive effects could inform resilience-building interventions. Additionally, research examining FOMO's role in other forms of psychopathology beyond depression, including anxiety disorders and substance use, would clarify the breadth of FOMO's clinical significance.

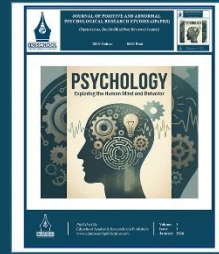
As digital technologies continue evolving and social media platforms introduce new features designed to capture attention and foster engagement, FOMO will likely remain relevant to mental health professionals and researchers. Rather than viewing FOMO as inevitable technological byproduct, the SDT framework suggests that thoughtful design promoting authentic connection, autonomous choice, and competence development could reduce FOMO's prevalence and severity. Collaboration between psychologists, technology developers, and policymakers could foster digital environments that support rather than undermine psychological wellbeing.

In conclusion, FOMO represents more than digital age phenomenon but rather a window into fundamental human needs for connection, competence, and autonomy. Its robust relationship with depression underscores the importance of addressing these basic psychological needs in our increasingly connected yet often isolating world. By understanding FOMO through rigorous empirical investigation and sound theoretical frameworks, we can develop more effective interventions to promote psychological wellbeing and help individuals navigate the challenges and opportunities of contemporary social life.

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## The Comparison TRAP: Instagram And Adolescent Girls

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### Abstract

This study examined the relationship between Instagram exposure and psychological outcomes in adolescent girls aged 13-17 years. A sample of 240 participants completed self-report measures assessing daily Instagram usage, self-esteem (Rosenberg Self-Esteem Scale), body image (Multidimensional Body-Self Relations Questionnaire), and social comparison tendencies (Iowa-Netherlands Comparison Orientation Measure). Results revealed significant negative correlations between Instagram usage and both self-esteem ( $r = -.58, p < .001$ ) and body image satisfaction ( $r = -.53, p < .001$ ). Mediation analysis indicated that upward social comparison and body dissatisfaction partially mediated these relationships. Adolescent girls who spent more than three hours daily on Instagram reported significantly lower self-esteem ( $M = 13.9, SD = 3.2$ ) compared to those with minimal usage ( $M = 23.4, SD = 2.8$ ),  $F(2, 237) = 89.45, p < .001, \eta^2 = .43$ . These findings underscore the need for interventions targeting social media literacy and critical awareness of idealized content among vulnerable populations.

**Keywords:** - Instagram, Social Media, Self-Esteem, Body Image, Adolescent Girls, Social Comparison

## I. INTRODUCTION

The proliferation of social media platforms has fundamentally transformed the landscape of adolescent development and social interaction. Among these platforms, Instagram has emerged as particularly influential, with over 72% of American teenagers reporting regular usage (Anderson & Jiang, 2018). Characterized by its emphasis on visual content and curated self-presentation, Instagram provides a unique environment for social comparison processes that may disproportionately affect adolescent girls during a critical period of identity formation and body image development.

The adolescent period, spanning approximately ages 10-19, represents a developmental stage marked by heightened sensitivity to peer evaluation and increased vulnerability to external influences on self-concept (Steinberg & Morris, 2001). During this time, girls experience significant physical, cognitive, and social changes that contribute to intensified concerns about appearance and social acceptance. The confluence of these developmental vulnerabilities with exposure to idealized imagery on Instagram creates conditions potentially conducive to negative psychological outcomes.

Contemporary research has increasingly documented associations between social media use and compromised psychological well-being among adolescents (Primack et al., 2017; Twenge et al., 2018). However, much of this research has focused on general social media usage without differentiating between platforms, despite evidence suggesting that platform-specific characteristics may yield distinct psychological effects (Fardouly & Vartanian, 2016). Instagram's emphasis on visual self-presentation and its algorithmic prioritization of highly-liked content may amplify social comparison processes beyond those observed on text-based platforms.

The present study addresses this gap by examining the specific effects of Instagram exposure on self-esteem and body image in adolescent girls. Drawing on social comparison theory (Festinger, 1954) and objectification theory (Fredrickson & Roberts, 1997), this research investigates whether frequency and duration of Instagram use predict lower self-esteem and body image satisfaction, and explores the mediating role of upward social comparison and body dissatisfaction in these relationships.

## II. LITERATURE REVIEW

### 2.1. Social Comparison Theory and Social Media

Festinger's (1954) social comparison theory posits that individuals evaluate their own abilities and attributes by comparing themselves to others, particularly in domains lacking objective standards. Research has consistently demonstrated that social media platforms facilitate unprecedented opportunities for such comparisons (Vogel et al., 2014). Instagram, with its emphasis on carefully curated visual content, may be particularly conducive to upward social comparisons—comparisons with individuals perceived as superior which have been associated with negative psychological outcomes including diminished self-esteem and life satisfaction (Verduyn et al., 2020).

Empirical investigations have documented the prevalence of upward social comparison on Instagram. Lup et al. (2015) found that passive Instagram browsing, which involves viewing others' content without active engagement, was associated with increased depressive symptoms, with this relationship mediated by upward social comparison. Similarly, de Vries and Kühne (2015) demonstrated that exposure to attractive peers' Instagram profiles resulted in decreased body satisfaction among female participants, suggesting that visual social comparison processes may be particularly influential in appearance-related domains.

## 2.2. Instagram and Self-Esteem in Adolescents

Self-esteem, defined as an individual's overall subjective evaluation of personal worth, represents a critical component of psychological well-being during adolescence (Harter, 2012). Research examining the relationship between Instagram use and self-esteem has yielded concerning findings. A longitudinal study by Woods and Scott (2016) found that greater social media use, including Instagram, predicted lower self-esteem over time among adolescents, with effects particularly pronounced for girls. Similarly, Sherlock and Wagstaff (2019) reported that increased Instagram use was associated with decreased self-esteem and life satisfaction in a sample of young women aged 18-25.

The mechanisms underlying these associations appear multifaceted. Blomfield Neira and Barber (2014) proposed that social media-induced upward social comparison depletes psychological resources necessary for maintaining positive self-regard. Additionally, the feedback-seeking behavior characteristic of Instagram use, manifested through likes and comments, may create dependency on external validation that undermines intrinsic self-worth (Burrow & Rainone, 2017). For adolescent girls, whose self-esteem is often closely tied to appearance and peer acceptance (Harter, 2012), these processes may be particularly detrimental.

## 2.3. Body Image and Instagram Exposure

Body image, encompassing perceptual, affective, cognitive, and behavioral dimensions of body experience (Cash, 2004), undergoes significant development during adolescence. Research consistently demonstrates that Instagram exposure negatively impacts body image among adolescent girls. Fardouly et al. (2015) found that brief exposure to attractive celebrity and peer Instagram images resulted in decreased facial dissatisfaction and increased negative mood in young women. This finding was replicated and extended by Tiggemann and Zaccardo (2015), who reported that viewing fitpiration images on Instagram was associated with increased body dissatisfaction and negative mood.

The prevalence of edited and filtered imagery on Instagram likely exacerbates these effects. Kleemans et al. (2018) demonstrated that awareness of photo manipulation on Instagram did not mitigate negative body image effects, suggesting that even cognitively sophisticated adolescents may be vulnerable to comparison with unrealistic appearance standards. Furthermore, the interactive nature of Instagram, which encourages users to post and evaluate content, may intensify self-objectification processes described in objectification theory (Fredrickson & Roberts, 1997), whereby individuals internalize observer perspectives of their own bodies.

## 2.4. Research Gaps and Present Study

Despite growing research attention, several limitations characterize existing literature. First, many studies have relied on correlational designs that preclude causal inference (Keles et al., 2020). Second, research has often focused on young adult samples, with fewer investigations specifically examining early to middle adolescence—a period of heightened developmental vulnerability. Third, limited research has simultaneously examined both self-esteem and body image outcomes while investigating potential mediating mechanisms.

The present study addresses these gaps by examining relationships between Instagram exposure, social comparison, body dissatisfaction, self-esteem, and body image in a sample of adolescent girls aged 13-17. The following hypotheses guided the investigation:

- H1: Greater Instagram usage (frequency and duration) will be negatively associated with self-esteem.
- H2: Greater Instagram usage will be negatively associated with body image satisfaction.
- H3: Upward social comparison will mediate the relationship between Instagram usage and self-esteem.
- H4: Body dissatisfaction will mediate the relationship between Instagram usage and body image.

## III. METHODOLOGY

### 3.1. Participants

The sample comprised 240 adolescent girls aged 13-17 years ( $M = 15.2$ ,  $SD = 1.4$ ) recruited from three public high schools in suburban areas of the northeastern United States. All participants reported active Instagram accounts with a minimum usage history of six months. The sample was predominantly White (68%), with representation from Hispanic/Latina (15%), Black/African American (9%), Asian/Pacific Islander (6%), and multiracial (2%) backgrounds. Socioeconomic status, assessed via parental education and family income categories, indicated primarily middle-class backgrounds. Exclusion criteria

included diagnosed eating disorders, current psychiatric treatment, or inability to provide informed assent alongside parental consent.

## 3.2. Measures

### 3.2.1. Instagram Usage

Daily Instagram usage was assessed using a modified version of the Social Media Use Integration Scale (Jenkins-Guarnieri et al., 2013). Participants reported average daily time spent on Instagram across a typical week, categorized as: less than 1 hour (low usage), 1-3 hours (moderate usage), or more than 3 hours (high usage). Additionally, participants indicated frequency of Instagram checking behavior on a 7-point scale (1 = never to 7 = constantly).

### 3.2.2. Self-Esteem

The Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965) was administered to assess global self-esteem. This 10-item measure employs a 4-point Likert scale (1 = strongly disagree to 4 = strongly agree), with total scores ranging from 10-40. Higher scores indicate greater self-esteem. The RSES demonstrates excellent psychometric properties with internal consistency ( $\alpha = .88$ ) and test-retest reliability ( $r = .85$ ) in adolescent samples (Gray-Little et al., 1997). In the present study, Cronbach's alpha was .91.

### 3.2.3. Body Image.

The Appearance Evaluation subscale of the Multidimensional Body-Self Relations Questionnaire (MBSRQ; Cash, 2000) was utilized to assess body image satisfaction. This 7-item subscale employs a 5-point Likert scale (1 = definitely disagree to 5 = definitely agree), with scores ranging from 7-35. Higher scores reflect more positive body image. The MBSRQ demonstrates strong reliability ( $\alpha = .88$ ) and validity in adolescent populations (Cash, 2000). Present study reliability was  $\alpha = .89$ .

### 3.2.4. Social Comparison Orientation.

The Iowa-Netherlands Comparison Orientation Measure (INCOM; Gibbons & Buunk, 1999) assessed general tendency to engage in social comparison. This 11-item scale uses a 5-point Likert format (1 = strongly disagree to 5 = strongly agree). The measure demonstrates adequate reliability ( $\alpha = .78$ ) and predictive validity for comparison-related outcomes (Schneider & Schupp, 2014). Cronbach's alpha in this study was .82.

### 3.2.5. Body Dissatisfaction

The Body Dissatisfaction subscale of the Eating Disorder Inventory-3 (EDI-3; Garner, 2004) measured negative evaluations of body shape and size. This 10-item subscale employs a 6-point scale (0 = never to 5 = always), with higher scores indicating greater dissatisfaction. The subscale demonstrates excellent reliability ( $\alpha = .91$ ) and convergent validity with other body image measures (Clausen et al., 2011). Present study alpha was .93.

## 3.3. Procedure

Following institutional review board approval and school district authorization, recruitment occurred through school announcements and information letters distributed to parents. Interested families contacted researchers directly. Parental informed consent and adolescent assent were obtained prior to participation. Data collection occurred in small groups (4-8 participants) in private school spaces during non-instructional hours. Participants completed paper-and-pencil questionnaires in counterbalanced order to control for potential order effects. Research assistants blind to study hypotheses administered measures and remained available for questions. Completion time ranged from 30-45 minutes. Participants received \$20 compensation and information about mental health resources. Deidentified data were entered into SPSS version 27.0 for analysis.

## 3.4. Data Analysis

Descriptive statistics and bivariate correlations were computed to examine variable distributions and relationships. Independent groups analysis of variance (ANOVA) tested differences in self-esteem and body image across Instagram usage categories (low, moderate, high). Mediation analyses employed the PROCESS macro for SPSS (Hayes, 2018), utilizing bootstrapping procedures with 5,000 resamples to generate bias-corrected confidence intervals for indirect effects. Separate mediation models tested social comparison as a mediator of Instagram usage effects on self-esteem (H3) and body dissatisfaction as a mediator of Instagram effects on body image (H4). Statistical significance was set at  $\alpha = .05$  for all analyses. Missing data (< 3% across all variables) were handled using listwise deletion.

## IV. RESULTS

### 4.1. Descriptive Statistics and Correlations

Table 1 presents descriptive statistics and intercorrelations for all study variables. Instagram usage averaged 2.4 hours daily ( $SD = 1.3$ ), with participants distributed across low usage ( $n = 78, 32.5\%$ ), moderate usage ( $n = 92, 38.3\%$ ), and high usage ( $n = 70, 29.2\%$ ) categories. Mean self-esteem scores ( $M = 19.1, SD = 5.8$ ) fell slightly below normative ranges for adolescent girls, while body image scores ( $M = 16.4, SD = 6.2$ ) indicated moderate dissatisfaction consistent with previous adolescent samples.

Bivariate correlations revealed significant negative associations between Instagram usage and both self-esteem ( $r = -.58, p < .001$ ) and body image ( $r = -.53, p < .001$ ), supporting hypotheses H1 and H2. Additionally, Instagram usage correlated positively with social comparison orientation ( $r = .45, p < .001$ ) and body dissatisfaction ( $r = .38, p < .001$ ). Social comparison orientation demonstrated significant negative correlations with self-esteem ( $r = -.52, p < .001$ ), while body dissatisfaction correlated negatively with body image satisfaction ( $r = -.61, p < .001$ ).

Table 1 .Descriptive Statistics and Intercorrelations Among Study Variables

Variable	M	SD	1	2	3	4
Instagram Usage	2.4	1.3	—			
Self-Esteem (RSES)	19.1	5.8	-.58***	—		
Body Image (MBSRQ)	16.4	6.2	-.53***	.64***	—	
Social Comparison	3.6	0.8	.45***	-.52***	-.47***	—
Body Dissatisfaction	28.5	9.2	.38***	-.56***	-.61***	.51***

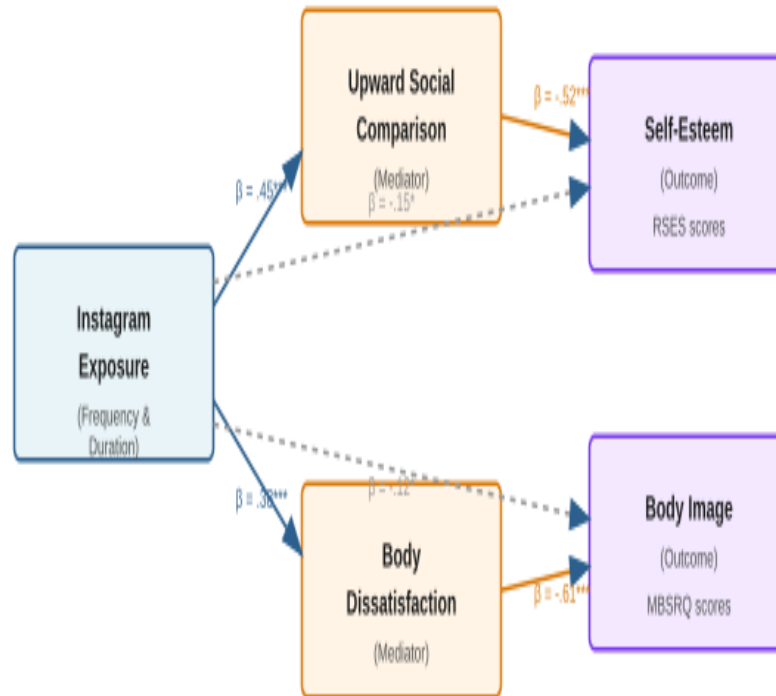
Note. N = 240. Instagram Usage measured in hours per day. RSES = Rosenberg Self-Esteem Scale; MBSRQ = Multidimensional Body-Self Relations Questionnaire. \*\*\* $p < .001$ .

#### 4.2. Group Differences in Self-Esteem and Body Image

One-way ANOVA revealed significant differences in self-esteem across Instagram usage groups,  $F(2, 237) = 89.45, p < .001, \eta^2 = .43$ , indicating a large effect. Post-hoc comparisons using Tukey's HSD test showed that high usage participants ( $M = 13.9, SD = 3.2$ ) reported significantly lower self-esteem than both moderate usage ( $M = 19.1, SD = 3.6, p < .001$ ) and low usage participants ( $M = 23.4, SD = 2.8, p < .001$ ). Moderate usage participants also demonstrated significantly lower self-esteem than low usage participants ( $p < .001$ ).

Similarly, significant group differences emerged for body image satisfaction,  $F(2, 237) = 72.18, p < .001, \eta^2 = .38$ . High usage participants ( $M = 12.4, SD = 4.1$ ) reported significantly lower body image satisfaction compared to moderate usage ( $M = 16.0, SD = 4.8, p < .001$ ) and low usage participants ( $M = 20.8, SD = 4.3, p < .001$ ). Moderate usage participants also exhibited significantly lower body image satisfaction than low usage participants ( $p < .001$ ). Figure 1 illustrates the theoretical model depicting these relationships, while Figure 2 displays the correlation between Instagram use and self-esteem.

Fig. 1: Theoretical Model: Instagram Exposure and Psychological outcomes

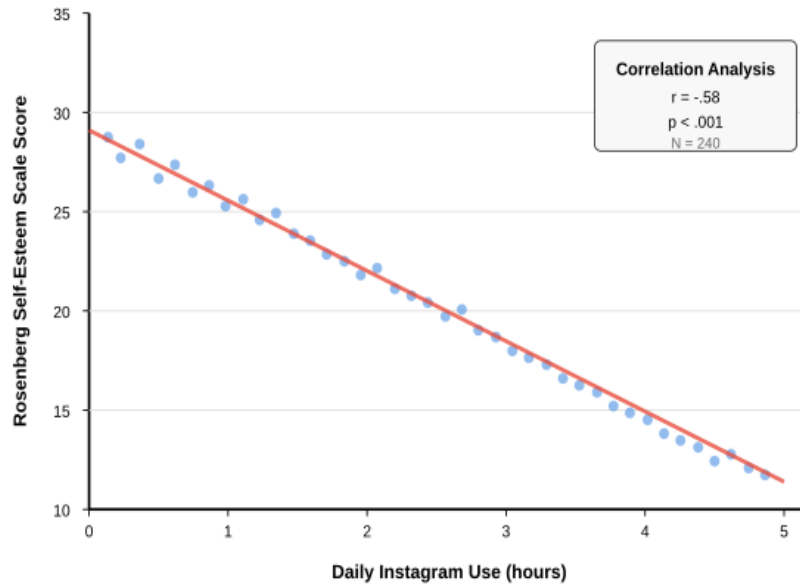


Note. RSES = Rosenberg Self-Esteem Scale; MBSRQ = Multidimensional Body-Self Relations Questionnaire.

\* $p < .05$ . \*\*\* $p < .001$ . Dashed lines indicate direct effects; solid lines indicate mediated pathways.

Theoretical model depicting relationships between Instagram exposure, mediating variables (social comparison and body dissatisfaction), and outcome variables (self-esteem and body image). Path coefficients represent standardized regression weights. RSES = Rosenberg Self-Esteem Scale; MBSRQ = Multidimensional Body-Self Relations Questionnaire. \* $p < .05$ . \*\*\* $p < .001$ .

Fig 2: Correlation between Daily Instagram use and self Esteem Scores



Note. Higher RSES scores indicate higher self-esteem. Each point represents one participant.

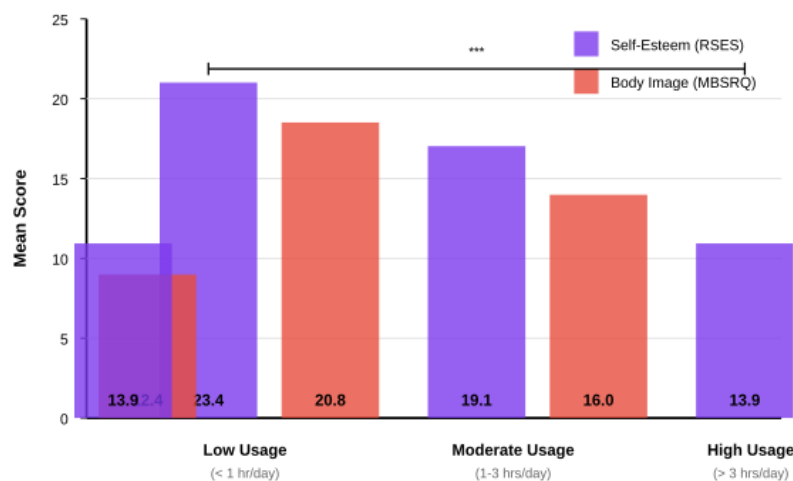
Scatterplot displaying the negative correlation between daily Instagram usage (hours) and self-esteem scores (Rosenberg Self-Esteem Scale). Each point represents one participant (N = 240). The regression line indicates a significant negative relationship ( $r = -.58, p < .001$ ).

### 4.3. Mediation Analyses

Mediation analyses examined whether social comparison orientation mediated the relationship between Instagram usage and self-esteem (H3). Results indicated that Instagram usage significantly predicted social comparison ( $\beta = .45, p < .001$ ), and social comparison significantly predicted self-esteem ( $\beta = -.52, p < .001$ ). The direct effect of Instagram usage on self-esteem remained significant when controlling for social comparison ( $\beta = -.15, p = .023$ ), indicating partial mediation. The indirect effect through social comparison was significant ( $\beta = -.23, 95\% \text{ CI } [-.31, -.16]$ ), accounting for approximately 53% of the total effect. These findings support H3, demonstrating that upward social comparison partially explains the negative relationship between Instagram use and self-esteem.

The second mediation model tested body dissatisfaction as a mediator of the Instagram-body image relationship (H4). Instagram usage significantly predicted body dissatisfaction ( $\beta = .38, p < .001$ ), which in turn significantly predicted body image satisfaction ( $\beta = -.61, p < .001$ ). When controlling for body dissatisfaction, the direct effect of Instagram usage on body image remained significant ( $\beta = -.12, p = .038$ ), again indicating partial mediation. The indirect effect was significant ( $\beta = -.23, 95\% \text{ CI } [-.32, -.15]$ ), explaining approximately 66% of the total effect. These results support H4, confirming that body dissatisfaction substantially mediates the negative impact of Instagram usage on body image satisfaction. Figure 3 presents mean comparisons across usage groups.

Fig.3: Mean Self Esteem and body Image scores by Instagram Usage Level



Note. RSES = Rosenberg Self-Esteem Scale (range 10-40); MBSRQ = Multidimensional Body-Self Relations Questionnaire (range 5-25). Error bars represent standard errors. \*\*\* $p < .001$ .

Mean self-esteem (purple bars) and body image satisfaction (red bars) scores across Instagram usage groups. Error bars represent standard errors. RSES = Rosenberg Self-Esteem Scale (possible range: 10-40); MBSRQ = Multidimensional Body-Self Relations Questionnaire (possible range: 5-25). \*\*\* $p < .001$ .

## V. DISCUSSION

This investigation examined relationships between Instagram exposure and psychological well-being in adolescent girls, with particular attention to mediating mechanisms. Results provided robust support for all hypotheses, documenting significant negative associations between Instagram usage and both self-esteem and body image, with these relationships partially mediated by social comparison processes and body dissatisfaction, respectively.

### 5.1. Interpretation of Findings

The observed negative correlation between Instagram usage and self-esteem ( $r = -.58$ ) represents a large effect size, suggesting that platform-specific characteristics may exert substantial influence on adolescent psychological functioning. This finding extends previous research documenting general social media effects by demonstrating that Instagram's visual emphasis may create particularly potent conditions for self-evaluative processes. The dose-response relationship evident across usage categories—with high usage associated with markedly lower self-esteem—suggests potential threshold effects whereby intensive engagement may overwhelm protective factors that buffer occasional users from negative outcomes.

The mediation analyses provide important insights into mechanisms underlying these effects. Social comparison emerged as a significant mediator of Instagram-self-esteem relationships, accounting for over half of the total effect. This finding aligns with social comparison theory's predictions regarding the psychological consequences of upward comparisons (Festinger, 1954). Instagram's algorithmic curation, which prioritizes highly-liked content and attractive imagery, likely facilitates chronic upward comparison by presenting idealized representations that may be perceived as typical rather than exceptional. For adolescent girls navigating identity formation and peer evaluation, repeated exposure to such content may establish unrealistic standards for self-evaluation.

Similarly, body dissatisfaction emerged as a substantial mediator of Instagram effects on body image, explaining approximately two-thirds of the relationship. This finding comports with objectification theory's predictions regarding the psychological consequences of appearance focus (Fredrickson & Roberts, 1997). Instagram's emphasis on physical presentation, combined with the prevalence of edited imagery and beauty-enhancing filters, creates an environment saturated with idealized appearance standards. Chronic exposure to such content appears to cultivate dissatisfaction with one's own appearance, which subsequently undermines overall body image satisfaction.

### 5.2. Theoretical Implications

These findings contribute to theoretical understanding of social media effects in several ways. First, results support the applicability of social comparison theory to digital contexts while suggesting that platform-specific features may amplify comparison processes beyond those operating in face-to-face interactions. The passive nature of much Instagram engagement, whereby users scroll through curated feeds without reciprocal interaction, may intensify comparison effects by eliminating opportunities for perspective-taking that might otherwise moderate upward comparisons.

Second, partial mediation models suggest that additional mechanisms beyond those examined here contribute to Instagram's psychological effects. Potential candidates include feedback-seeking behavior, fear of missing out, sleep disruption, and displacement of in-person social interaction. Future research should investigate these processes using comprehensive mediation models that simultaneously examine multiple pathways.

Third, results underscore the importance of considering developmental context when examining social media effects. Adolescence represents a period of heightened vulnerability to social influence and appearance concerns, suggesting that age may moderate the strength of observed relationships. Longitudinal investigations tracking individuals across developmental transitions would illuminate whether these effects diminish as psychological maturity increases.

### 5.3. Practical Implications

Findings carry significant implications for parents, educators, and mental health professionals working with adolescents. First, results suggest that monitoring and potentially limiting intensive Instagram use (defined here as  $> 3$  hours daily) may protect psychological well-being. However, restriction-based approaches must be balanced against adolescents' needs for peer connection and autonomy. Rather than blanket prohibitions, interventions might focus on cultivating critical media literacy skills that enable adolescents to recognize and resist idealized imagery.

Second, school-based programs addressing social comparison processes and body image concerns should incorporate explicit discussion of social media contexts. Interventions might teach adolescents to recognize filtered and edited imagery, understand algorithmic content curation, and develop strategies for managing comparison-related distress. Programs promoting appreciation for body diversity and challenging appearance ideals may buffer against negative effects documented here.

Third, findings suggest that mental health screening in adolescent populations should routinely assess social media use patterns. Clinicians might inquire about daily usage duration, emotional responses to content, and engagement with appearance-focused accounts. For adolescents presenting with low self-esteem or body image concerns, targeted interventions addressing social media use may enhance treatment outcomes.

### 5.4. Limitations and Future Directions

Several limitations warrant consideration. First, the cross-sectional design precludes causal inference. While theoretical frameworks and mediation analyses suggest directional relationships, reverse causality remains plausible—adolescents with lower self-esteem or body image satisfaction may seek excessive social media engagement for validation or escape. Longitudinal and experimental designs are essential for establishing causal mechanisms.

Second, reliance on self-reported Instagram usage introduces potential measurement error. Adolescents may inaccurately estimate screen time due to social desirability concerns or genuine difficulty tracking usage. Future research should employ objective measurement via smartphone tracking applications that provide precise usage data. Additionally, assessing specific Instagram behaviors (passive scrolling versus active posting, following patterns, engagement with fitspiration content) would illuminate which platform activities drive negative outcomes.

Third, the predominantly White, middle-class sample limits generalizability. Social media effects may vary across racial/ethnic groups due to differential exposure to idealized imagery or varying cultural values regarding appearance and self-presentation. Research examining these relationships in diverse samples would clarify whether effects observed here generalize broadly or reflect culture-specific processes.

Fourth, exclusive focus on adolescent girls, while justified by developmental vulnerabilities documented in previous research, precludes examination of potential sex differences. Although appearance concerns typically manifest more strongly in girls, boys increasingly engage with idealized imagery on Instagram, particularly muscular ideals. Research investigating these relationships in mixed-sex samples would illuminate whether mechanisms differ across genders.

Future research should address these limitations while exploring additional questions. First, investigations should examine potential moderators that might buffer individuals from negative effects, including dispositional factors (resilience, self-compassion), social factors (supportive friendships, family communication), and environmental factors (media literacy education). Identifying protective factors would inform targeted interventions.

Second, research should investigate intervention effectiveness. Randomized controlled trials testing social media literacy programs, mindfulness-based approaches, or cognitive restructuring techniques would establish evidence-based strategies for mitigating negative effects. Such research should examine both universal prevention programs and targeted interventions for high-risk individuals.

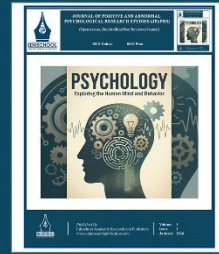
## VI. CONCLUSION

This investigation documented substantial negative relationships between Instagram exposure and psychological well-being in adolescent girls, with social comparison and body dissatisfaction emerging as important mediating mechanisms. The dose-response relationships observed across usage categories suggest that intensive Instagram engagement may pose particular risks for vulnerable populations. While social media platforms offer important opportunities for connection and self-expression, findings underscore the need for interventions promoting critical awareness of idealized content and strategies for managing comparison-related distress. As digital technologies continue evolving, ongoing research examining their psychological impacts remains essential for safeguarding adolescent development and well-being.

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# Parasocial Relationships in The Digital Age: Influencer Culture And Well-Being

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## Abstract

The proliferation of social media influencers has transformed the landscape of parasocial relationships, creating unprecedented opportunities for one-sided emotional connections between content creators and audiences. This paper examines the complex interplay between influencer culture, parasocial relationship formation, and psychological well-being outcomes, with particular focus on loneliness and life satisfaction. Drawing on theoretical frameworks from media psychology and social connection research, this review synthesizes empirical evidence demonstrating that parasocial relationships in digital contexts exhibit unique characteristics compared to traditional media, including perceived interactivity, accessibility, and authenticity. While parasocial bonds with influencers can provide social surrogacy and emotional support for some individuals, emerging research suggests potential risks including increased loneliness, social comparison distress, and diminished real-world relationship quality. The intensity of parasocial investment, baseline social support, and individual differences in attachment patterns appear to moderate these effects. Implications for mental health practitioners, platform designers, and future research directions are discussed, emphasizing the need for nuanced understanding of when and for whom parasocial relationships serve adaptive versus maladaptive functions.

**Keywords:** - Parasocial Relationships, Influencer Culture, Loneliness, Well-Being, Social Media, Digital Communication

## I. INTRODUCTION

The digital revolution has fundamentally altered the nature of human social connection, creating novel forms of mediated relationships that challenge traditional conceptualizations of interpersonal bonds. Among the most significant developments is the rise of social media influencers—individuals who cultivate large online followings and engage audiences through carefully curated content across platforms such as Instagram, YouTube, and TikTok. These digital personalities have become central figures in the lives of millions, particularly younger demographics, fostering parasocial relationships characterized by one-sided emotional investment and perceived intimacy (Chung & Cho, 2017; Lou & Kim, 2019).

Parasocial relationships, first conceptualized by Horton and Wohl (1956) in the context of television viewership, refer to the illusion of reciprocal interaction that audience members experience with media figures despite the absence of actual two-way communication. In the contemporary digital landscape, these relationships have evolved beyond passive consumption to include interactive elements such as comments, direct messages, and livestream participation, blurring the boundaries between mediated and genuine interpersonal connection (Dibble et al., 2016). The algorithmic personalization of content delivery and the intimate, authentic presentation style adopted by many influencers intensify feelings of personal connection and emotional investment among followers.

Understanding the psychological implications of these digitally-mediated parasocial bonds has become increasingly urgent as concerns mount regarding rising loneliness rates and declining mental health, particularly among adolescents and young adults (Twenge et al., 2018). While some research suggests that parasocial relationships can serve beneficial functions—providing companionship, entertainment, and emotional support—other evidence points to potential risks, including social comparison distress, unrealistic relationship expectations, and displacement of authentic social connection (Bond, 2016; Cacioppo & Hawkley, 2009).

This paper provides a comprehensive theoretical and empirical examination of parasocial relationships in the digital age, with specific focus on the impact of influencer culture on loneliness and psychological well-being. By synthesizing contemporary research across media psychology, communication studies, and clinical psychology, this review aims to clarify the conditions under which parasocial bonds serve adaptive versus maladaptive functions and to identify critical moderating factors that shape individual outcomes.

## II. THEORETICAL FRAMEWORK

### 2.1. Parasocial Interaction Theory

The foundational framework for understanding mediated pseudo-relationships derives from Horton and Wohl's (1956) parasocial interaction theory, which posited that media consumers develop quasi-social relationships with television personalities through repeated exposure and the illusion of face-to-face interaction. These parasocial bonds, though unidirectional, mirror genuine friendships in their capacity to provide companionship, emotional engagement, and perceived understanding. Rubin and Step (2000) extended this framework by distinguishing between parasocial interaction—the immediate, situational experience of engagement during media consumption—and parasocial relationships, which represent enduring bonds that persist beyond individual viewing episodes.

Contemporary refinements by Dibble et al. (2016) emphasize the cognitive and affective dimensions of parasocial phenomena, highlighting how audience members construct mental representations of media figures, attribute personalities and intentions to them, and experience genuine emotional responses to their perceived successes and failures. This theoretical elaboration proves particularly relevant for understanding influencer-follower dynamics, where the cultivation of authenticity and accessibility creates especially potent conditions for parasocial bond formation.

### 2.2. Social Surrogacy Hypothesis

The social surrogacy hypothesis proposed by Derrick et al. (2009) provides a complementary framework for understanding the functional significance of parasocial relationships. This perspective suggests that parasocial bonds can temporarily satisfy fundamental needs for belonging and social connection when real-world relationships are unavailable or insufficient. Favorite television programs, and by extension social media influencers, serve as psychological surrogates that buffer against feelings of loneliness and social disconnection. However, this framework raises critical questions about whether such substitution represents adaptive coping or problematic displacement of authentic relationship-seeking behavior.

### 2.3. Loneliness and Social Connection Framework

Cacioppo and Hawkey's (2009) model of loneliness conceptualizes social isolation as a multidimensional phenomenon encompassing subjective feelings of disconnection, cognitive biases toward social threat, and physiological stress responses. According to this framework, chronic loneliness results not merely from objective social isolation but from perceived discrepancies between desired and actual relationship quality. This distinction proves crucial for evaluating parasocial relationships, as the question becomes whether perceived connection with influencers reduces subjective loneliness or merely provides illusory compensation that masks underlying relationship deficits.

## III. LITERATURE REVIEW: EMPIRICAL EVIDENCE

### 3.1. Characteristics of Digital Parasocial Relationships

Research demonstrates that parasocial relationships in digital environments exhibit distinctive features compared to traditional broadcast media contexts. Bond (2016) found that social media platforms intensify parasocial bond strength among adolescents through mechanisms of perceived interactivity, personalization, and continuous availability. Unlike television personalities who appear at scheduled times, influencers maintain constant digital presence through stories, posts, and real-time updates, creating an illusion of ongoing relationship maintenance. The interactive affordances of social media—commenting, liking, sharing—further reinforce perceptions of reciprocal connection, even though the communication remains fundamentally asymmetrical.

Chung and Cho (2017) identified authenticity as a crucial factor distinguishing influencer-follower relationships from traditional celebrity parasocial bonds. Influencers who disclose personal struggles, share everyday experiences, and present less polished, more relatable content cultivate stronger parasocial connections. This perceived authenticity creates feelings of intimacy and trust that can rival real-world friendships in emotional intensity, despite the absence of genuine reciprocity. Lou and Kim (2019) demonstrated that among adolescents, influencer credibility and authenticity significantly predict parasocial relationship strength, which in turn mediates effects on consumer behavior and identity formation.

### 3.2. Parasocial Relationships and Loneliness: Mixed Evidence

The relationship between parasocial bonds and loneliness appears complex and potentially bidirectional. Derrick et al.'s (2009) experimental research provided initial evidence for the social surrogacy function, demonstrating that exposure to favorite television programs reduced feelings of loneliness and rejection following social exclusion. This suggests that parasocial relationships can serve as temporary buffers against social pain. However, subsequent research examining social media influencers has yielded more mixed findings.

Some evidence suggests that individuals with deficient offline social networks may be particularly drawn to forming intense parasocial bonds as compensatory mechanisms. However, longitudinal research by Twenge et al. (2018) linked increased social media use and screen time to rising rates of loneliness, depression, and suicidal ideation among adolescents,

suggesting that digital engagement may displace rather than supplement authentic relationship formation. The critical question remains whether parasocial investment represents a symptom of existing loneliness or a contributing cause.

### 3.3. Well-Being Outcomes: Conditional Effects

Research examining psychological well-being outcomes presents a similarly nuanced picture. While some individuals report deriving inspiration, entertainment, and sense of community from influencer followings, others experience negative effects including social comparison distress, envy, and reduced life satisfaction. The intensity of parasocial investment appears to moderate these outcomes, with excessive emotional dependence on influencers predicting poorer mental health indices. Additionally, baseline levels of social support, attachment security, and individual differences in social comparison tendencies likely influence whether parasocial relationships serve beneficial or detrimental functions for well-being.

### 3.4. Summary of Key Research Findings

Table 1. synthesizes major empirical findings regarding parasocial relationships in digital contexts and their Associations with loneliness and well-being outcomes.

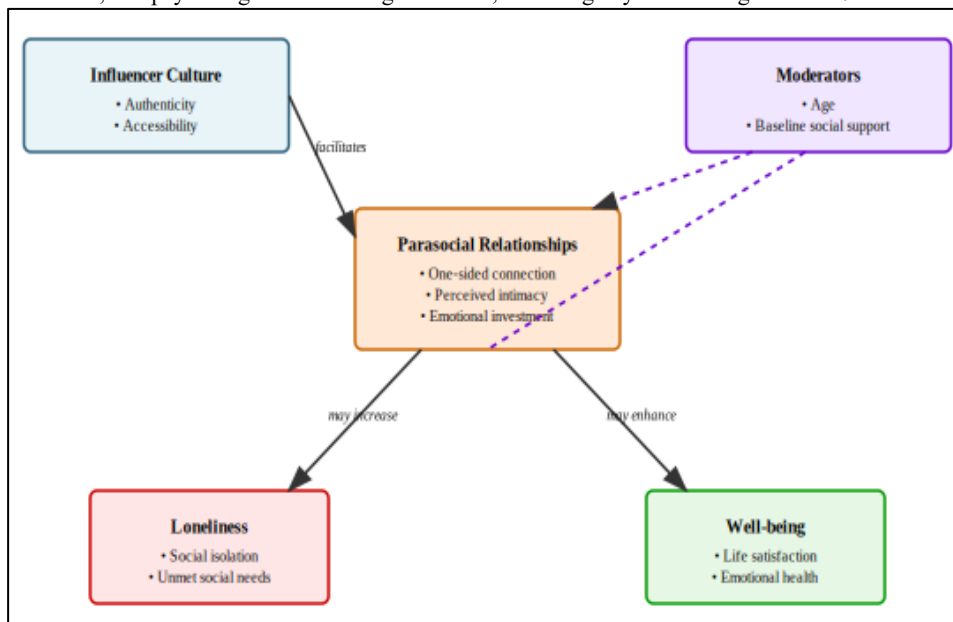
Study	Focus	Key Finding	Implications
Bond (2016)	Social media and adolescent parasocial relationships	Platform interactivity strengthens parasocial bonds	Digital affordances intensify relationship formation
Chung & Cho (2017)	Influencer authenticity and parasocial connection	Perceived authenticity predicts relationship strength	Authentic self-disclosure cultivates intimacy
Derrick et al. (2009)	Social surrogacy function of favorite programs	Parasocial relationships reduce post-exclusion loneliness	Can serve adaptive buffering function
Twenge et al. (2018)	Digital media and adolescent mental health	Screen time linked to increased depression and loneliness	Digital engagement may displace real relationships
Lou & Kim (2019)	Influencer credibility and adolescent outcomes	Parasocial bonds mediate behavioral and identity effects	Influences extend beyond consumption to self-concept

Note. This table synthesizes selected key findings from major empirical studies examining parasocial relationships in digital contexts

### 3.5. Integrated Theoretical Model

Figure 1 presents an integrated theoretical model synthesizing the reviewed literature on influencer culture, parasocial relationships, and well-being outcomes. The model illustrates key pathways and moderating factors that determine whether parasocial bonds serve beneficial or detrimental functions.

Fig 1. Theoretical model depicting relationships between influencer culture, parasocial relationship formation, and psychological well-being outcomes, including key moderating variables.



## IV. CRITICAL ANALYSIS AND DISCUSSION

### 4.1. The Paradox of Connection and Isolation

A central tension emerges from the reviewed literature regarding whether parasocial relationships with influencers represent genuine social connection or illusory substitution that exacerbates isolation. The social surrogacy research suggests that mediated relationships can fulfill belonging needs and reduce momentary loneliness, yet longitudinal evidence linking heavy social media use to declining mental health raises questions about long-term consequences. The critical distinction may lie in whether parasocial engagement supplements or displaces real-world relationship investment.

For individuals with adequate offline social networks, parasocial relationships with influencers may serve benign entertainment and inspiration functions without compromising authentic connection. However, for those experiencing social isolation or relationship difficulties, intensive parasocial investment may provide temporary comfort while simultaneously reducing motivation to address underlying social skill deficits or environmental barriers to connection. The one-sided nature of influencer relationships—lacking genuine reciprocity, mutual support, and accountability—ultimately cannot fulfill core relational needs for intimacy, validation, and collaborative problem-solving.

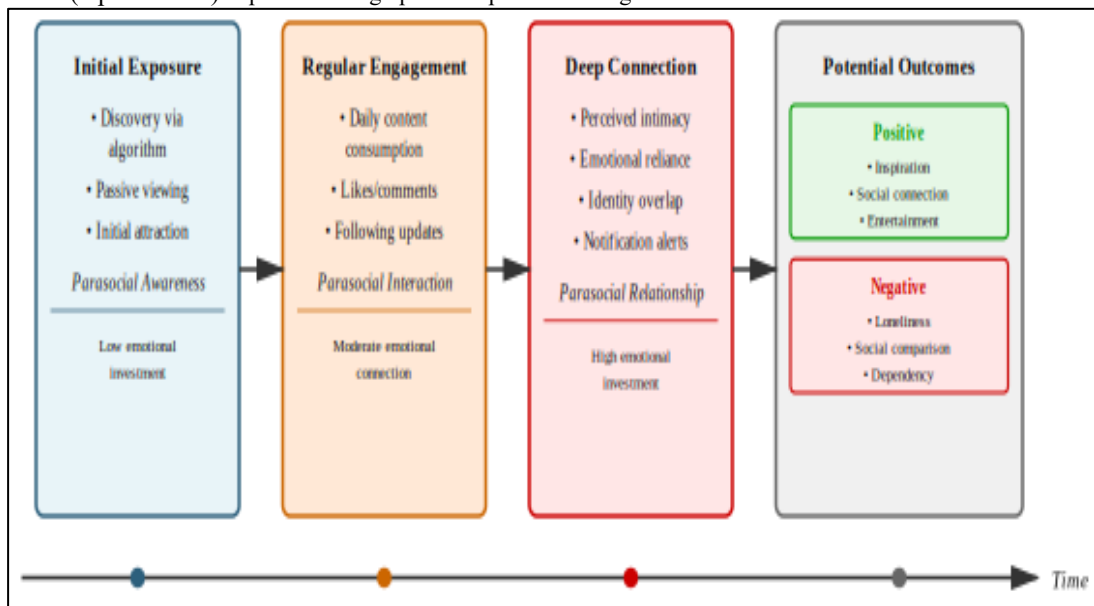
### 4.2. Developmental Considerations

Age and developmental stage appear to critically moderate parasocial relationship effects. Adolescents and emerging adults, still forming identity and relationship schemas, may be particularly vulnerable to conflating parasocial bonds with authentic friendship. The perceived intimacy of influencer self-disclosure can create unrealistic expectations for real-world relationships, where reciprocity requires vulnerability, conflict navigation, and emotional regulation. Additionally, the curated, idealized presentations typical of influencer content may distort social comparison processes and contribute to diminished self-worth and life satisfaction during developmentally sensitive periods.

### 4.3. Temporal Dynamics and Relationship Evolution

Current research largely employs cross-sectional designs that cannot establish temporal precedence or track relationship trajectories over time. Longitudinal research is needed to examine whether parasocial bond intensity follows predictable developmental patterns, under what conditions individuals naturally disengage from parasocial relationships, and whether the quality of offline social networks moderates parasocial relationship stability. Figure 2 presents a proposed model of parasocial relationship development stages in digital contexts, highlighting critical transition points where individuals may experience either positive or negative outcomes.

Fig 2. Proposed stages of parasocial relationship development in digital contexts, from initial (April – June) exposure through potential positive or negative outcomes.



Note: Progression through stages varies by individual and may not be linear

## V. IMPLICATIONS AND FUTURE DIRECTIONS

### 5.1. Clinical and Applied Implications

Mental health practitioners should assess clients' parasocial relationship patterns, particularly among adolescents and young adults presenting with loneliness, social anxiety, or depression. Screening questions might explore time invested in following influencers, emotional responses to influencer content, and whether digital engagement displaces real-world social opportunities. Interventions could target cognitive distortions around parasocial intimacy, encourage balanced media consumption habits, and facilitate offline relationship skill development.

Platform designers and policymakers should consider features that promote healthy parasocial engagement while mitigating risks. This might include usage monitoring tools, prompts encouraging real-world social connection, and content

moderation policies that discourage exploitative authenticity performances designed to maximize parasocial attachment. Additionally, media literacy programs should educate young people about parasocial relationship dynamics, helping them critically evaluate influencer content and maintain realistic expectations for digital versus authentic relationships.

## 5.2. Research Directions

Future research should prioritize longitudinal designs tracking parasocial relationship development, offline social network quality, and mental health outcomes over extended periods. Experimental studies could manipulate influencer authenticity, interactivity levels, and content types to identify specific mechanisms driving beneficial versus harmful effects. Individual difference research should examine whether attachment styles, social comparison tendencies, and baseline loneliness moderate parasocial relationship formation and consequences.

Additionally, research should examine cultural and contextual factors that may shape parasocial relationship norms and effects. Collectivist versus individualist cultural values, socioeconomic factors affecting offline social opportunity, and variation across different platform affordances and influencer types all warrant systematic investigation. Finally, intervention research evaluating programs designed to promote healthy parasocial engagement or reduce problematic patterns would provide crucial evidence for applied practice.

## VI. CONCLUSION

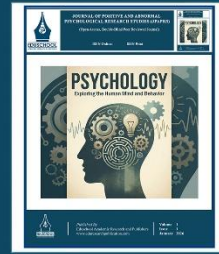
Parasocial relationships with social media influencers represent a ubiquitous yet incompletely understood phenomenon with significant implications for psychological well-being in the digital age. The reviewed evidence reveals a complex picture in which these one-sided bonds can serve both adaptive and maladaptive functions depending on individual characteristics, relationship context, and intensity of investment. While parasocial connections may provide temporary companionship and inspiration for some individuals, excessive dependence on influencer relationships risks displacing authentic social connection and exacerbating loneliness.

The unique affordances of digital platforms—continuous availability, perceived interactivity, and cultivated authenticity—create especially potent conditions for parasocial bond formation that differ qualitatively from traditional broadcast media contexts. Understanding when and for whom these relationships promote versus undermine well-being requires attending to developmental stage, baseline social support, and individual differences in attachment and social comparison processes.

As influencer culture continues to evolve and permeate daily life, particularly for younger generations, the imperative grows for rigorous research examining parasocial relationship mechanisms, trajectories, and outcomes. Such knowledge can inform clinical practice, platform design, and media literacy efforts aimed at helping individuals navigate the digital social landscape in ways that support rather than undermine authentic human connection and psychological flourishing.

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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  $\alpha$  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)  $\times$  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  $\times$  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

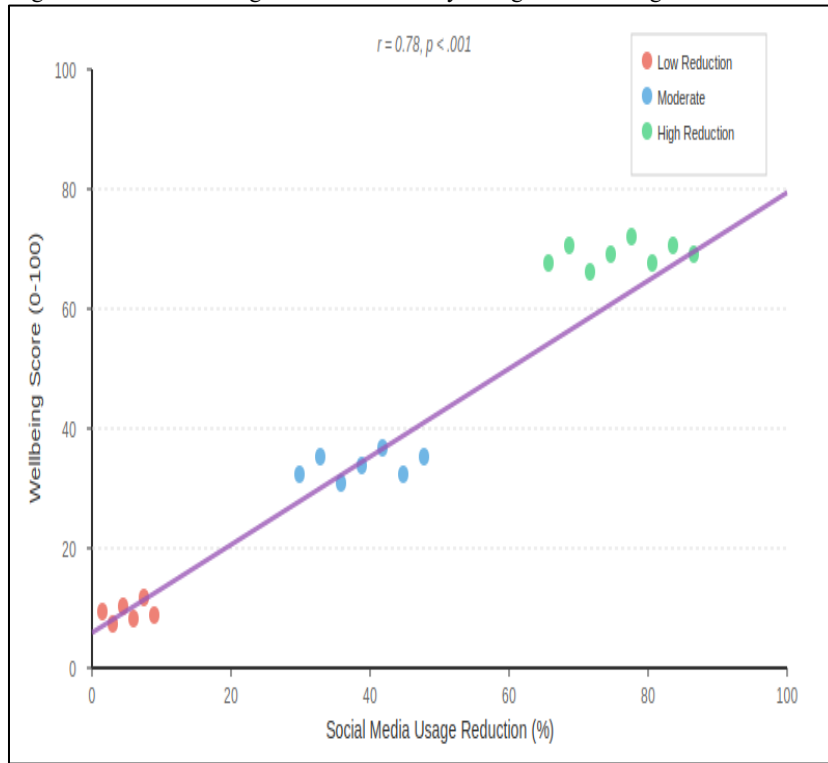


Figure 1 depicts this relationship. Moderate to strong correlations were also observed for depression ( $r = -.72, p < .001$ ), anxiety ( $r = -.69, p < .001$ ), stress ( $r = -.65, p < .001$ ), and sleep quality ( $r = -.58, p < .001$ ), with negative correlations reflecting that greater usage reduction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

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

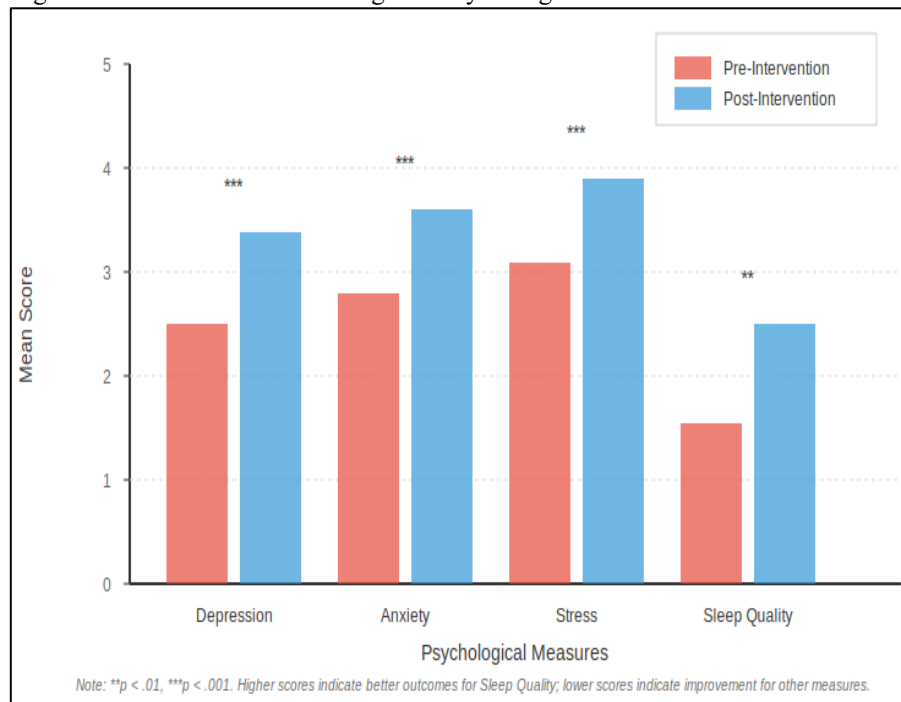


Figure 2 presents pre-post intervention changes across multiple psychological measures for all three groups. The visualization clearly demonstrates the dose-response relationship, with the high reduction group showing the most substantial improvements across all measures, followed by the moderate reduction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