



Social Media Use and Mental Health: A Review of the Experimental Literature and Implications for Clinicians

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Abstract

Purpose of Review Social media use is widespread. Because social media can yield both positive and negative mental health effects, it is critical for clinicians to consider how their clients use social media. The purpose of this review is to examine the extant experimental literature on the positive and negative effects of social media, with an eye towards how clinicians can (1) assess use, (2) educate on harmful use, and (3) promote skills that encourage healthier use.

Recent Findings The existing literature suggests that active social media use that promotes positive connection, reminiscing, or warmth can be beneficial, whereas social media use that involves exposure to and production of highly idealized content, a focus on physical appearance, or a reliance on feedback can be harmful. To encourage healthier social media use, clinicians can encourage the building of intrapersonal skills, including reappraising comparison-inducing content, self-compassion, and mindfulness.

Summary Although additional experimental work is needed to thoroughly inform treatment plans, findings suggest avenues that may be effective for clinicians when treating clients who struggle with their social media use. Changing how clients approach social media, rather than encouraging abstinence from use, may be more effective and practical in this digitally saturated age.

Introduction

Social media use is widely prevalent across adolescents and adults in the USA [1, 2]. A prominent narrative suggests that high levels of use are negatively influencing mental health, particularly among young people [3]. The negative effects of social media may be linked to unique affordances of social media, such as the opportunity for quantifiable indicators of approval (e.g., likes), the absence of social cues, and the highly visual nature of many popular platforms [4]. However, many elements of social media can be beneficial for development, including providing opportunities for identity development and social connection [5]. Indeed, interventions instructing individuals to limit or abstain from social media use have shown mixed effects on well-being [6••], highlighting how social media is not necessarily a homogeneous, negative activity. Therefore, there is a need to distinguish between specific harmful and beneficial online activities, in order for clinicians, parents, and others to promote well-being through targeted intervention. The aim of this paper is to review existing literature on healthy and unhealthy social media use. We focus

specifically on experimental and intervention research, as these designs can inform immediate and long-term effects of social media use on key mental health outcomes. Although correlational research provides valuable insights, only experimental designs can determine causal effects, and results from these studies are most reliable and actionable for clinicians and interventionists. Our review also focuses on impacts on younger users (i.e., adolescents and young adults), given the high media use among this population, leveraging studies of adults when necessary. We organize the review into three sections, which can structure clinicians' approach to understanding client social media use and assist with upregulating healthy use and downregulating unhealthy use. We frame the review in terms of (1) assessment, in which clinicians determine how a client uses social media and how they respond to it, (2) education, in which clinicians work with clients to promote an understanding of how social media affects them, and (3) skill building, in which clinicians empower clients with tools to develop healthier social media use. Table 1 summarizes the main points made in these sections.

Assessment

A critical first step is for clinicians to screen how and to what extent a client is using social media. Mental health is influenced by environmental and sociocultural factors [7, 8]. As such, assessing the nature of clients' functioning across contexts and domains (e.g., family, work, social) is essential to inform a holistic conceptualization, accurate diagnosis, and treatment planning [9, 10]. The digital social environment created by social media is often overlooked in the assessment process, with less than half of clinicians regularly asking clients about their digital technology use [11], despite increasing recognition that it is an important influence on well-being.

Smartphones and social media platforms have the potential to provide objective information, in addition to subjective information reported by the client. Most smartphones easily provide information on app usage through default features, with iOS devices depicting this information through the iOS Screen Time app and Android devices through the Digital Wellbeing app. The iOS Screen Time app also provides an hourly breakdown of app usage, which can be informative in probing the extent of use during problematic periods of time (e.g., sleep-disrupting late night use).

Table 1. Recommendations for clinicians to encourage healthier client social media use

| Components of clinical care | Purpose/use | Examples of clinically relevant information |
|---|---|---|
| Assessment of social media use | Gain understanding of clients' individual patterns of use and vulnerabilities contributing to risk for negative effects on mental health | <ul style="list-style-type: none"> - What platforms clients use - When they use social media (time of day) - Who they follow and/or interact with online - How often they check social media - How much active vs. passive use (posting vs. scrolling) - What purposes clients use social media for (e.g., social connection, information seeking) - How clients perceive social media to affect their mood, self-esteem, etc. - Potential client vulnerabilities and strengths (e.g., preexisting well-being and body image concerns, marginalized status) |
| Psychoeducation about social media and psychological well-being | Educate clients about positive and negative effects of social media on mental health to increase clients' media literacy and awareness of their own unique behaviors and risk factors | <ul style="list-style-type: none"> - Describe how features of social media platforms "transform" social interactions (e.g., visualness increasing emphasis on appearance) - Explain effects of active use vs. passive use - Discuss psychological responses to social media rewards/quantifiable feedback |
| Skill-building to facilitate healthy habits | Equip clients with strategies to intentionally implement to maximize healthy use of social media and minimize negative effects | <ul style="list-style-type: none"> - Promote reappraisals towards comparison-inducing content - Encourage self-compassion - Build mindfulness of habits |

Clinicians should be mindful that high or frequent levels of use are not necessarily indicative of problematic use that may be impairing daily life [12]. Primarily, clinicians should inquire, using open-ended questioning, *how* a client is engaging with social media and how clients respond to various types of use. Stimulated recall approaches may be particularly effective, in which clients discuss with their clinician how they use social media specifically. Assisted by the clinician's interactive feedback, clients reflect on what types of social media use promote positive effects and what types of use promote negative effects for them personally [13]. The self-reflection that results from this process may be helpful in curating a personalized understanding of what types of social media use to discourage and encourage [14•].

As we review next, some social media activities may be more beneficial or more harmful than others. However, social media effects are not uniform and there is great variability in how users respond to content, even if that content may be identical [15]. For example, clients with preexisting levels of poorer well-being (e.g., depressive symptoms, low self-esteem) may engage in greater social media use [16] or have more negative social media experiences, such as engaging in greater harmful social comparisons [17]. Being victimized in traditional spaces (e.g., schools) is a key predictor of being victimized in online spaces [18]. Sexual and gender minority individuals may be especially likely to encounter offensive and harmful content on social media, although simultaneously may also be more likely to reap the benefits of social media (e.g., social support, connecting with similar others [19]). During the assessment phase, clinicians should identify underlying vulnerabilities such as these that are unique to each client, resulting in a targeted treatment plan.

Education

Psychoeducation, or the provision of information in treatment about mental health conditions (e.g., contributing factors, treatment recommendations), is an integral component of clinical care [20]. Media literacy is the ability to critically evaluate content in digital media and may be an essential component of psychoeducation for young people struggling with mental health challenges related to social media use. Clinicians can employ tactics from existing media literacy programs at an individual level, personalizing the education to the client. A cornerstone of successful media literacy programs is education on the types of harmful content that users encounter online. For example, randomized intervention programs have focused on educating participants on the unrealistic nature of social media [21, 22], the extent to which others' posts are digitally altered [23–25], the targeted nature of social media advertising [23], and how social media features are designed to keep users engaged and maximize profit for tech companies [26]. These programs have been found to be effective on several outcomes, including improved body image [22–25] and well-being [22], as well as increased motivation to control social media use [25]. Importantly, effects may be stronger for girls compared to boys [22, 25].

Education on specific social media features may be effective in reducing use that is impairing daily life functioning. For example, having smartphone notifications delivered in batches can improve mood, stress, and feelings of phone control [27]; having social media notifications delivered in scheduled intervals (available on iOS 15 and later) may similarly be effective in reducing constant checking and promote use that is more goal-directed. Additionally, as the vibrant and colorful landscape of smartphones and social media apps by extension may encourage engagement, grayscaling (i.e., making graphics black-and-white on the phone) has been shown to reduce smartphone screen time and stress, as well as improve perceived control over smartphone use [28]. Although educating clients on these tools may be fruitful, it is important to note that effectiveness varies, and studies reported null effects on some assessed outcomes (e.g., social connection [27], sleep quality [28]).

Additionally, clinicians can educate clients on what types of social media behaviors and activities have been found to be, in general, harmful or beneficial. Below, we review several behaviors and activities that experimental work has found to exert significant effects on mental health, for better and for worse.

Exposure to and Engagement with Highly Visual Social Media

The most popular social media platforms among young people are highly visual (e.g., TikTok, Instagram, Snapchat [2]), with the central function being to share pictures and videos. Content is often filtered and curated to enhance physical attractiveness [29]. Consuming this content may promote harmful behaviors, such as internalization of unrealistic beauty ideals and negative upward appearance comparisons, particularly among young people and girls [30, 31]. Greater use of appearance-focused social media is associated with poorer well-being [32] and greater body image concerns [33]. Exposure to Instagram, a highly visual platform, exerts stronger effects on appearance comparison, negative and positive affect, and body satisfaction compared to exposure to the more text-oriented Facebook [34].

The active creation of visually oriented content can also negatively influence mental health and body image. Experimental work instructing participants to take, edit, or post a selfie on social media has found immediate negative effects on mood and body image [35, 36]; however, other results are mixed [37, 38]. These discrepancies may reflect poorly understood individual vulnerabilities. For example, taking edited selfies may *increase* appearance satisfaction, only for those lower in preexisting body image concerns [37]. Likewise, exposure to idealized media content may negatively affect only those with higher preexisting body image concerns [39]. Collectively, these results suggest that clinicians should educate clients on the potential harms of visual social media use and additionally screen for body image concerns among clients, as these individuals may be more vulnerable to the negative effects of exposure to and engagement with highly visual social media.

Types of Highly Visual Social Media Content

The type of highly visual social media matters. Highly visual social media can include images that idealize thin bodies (e.g., “thinspiration” content that

claims to inspire thinness), fit or muscular bodies (e.g., “fitspiration” content that claims to inspire fitness), or otherwise conventionally attractive people (e.g., faces edited to remove blemishes, portrayed wearing makeup or sexualized clothing [40•]). Exposure to appearance ideals increases body dissatisfaction among young women and men, and many effects are mediated by social comparison to the attractive, thin, or fit targets in the images [40•]. Other experimental work has shown that exposure to idealized images causes negative mood [41, 42]. Thus, an important source of education for clients is the potential harms of exposure to thinspiration, fitspiration, and idealized social media content.

Body positivity, in which diverse bodies are portrayed and celebrated with the goal of encouraging acceptance of all bodies, has been proposed as a response to idealized content on highly visual social media [43]. Exposure to body positive images causes improved body satisfaction and mood among young women [44–46]. However, some results on body positivity exposure have been complex. For example, exposure to body positive posts interspersed with thin-ideal posts did not mitigate the effects of idealized content [47]. Another study found that some women report more self-objectification after exposure to body positive images [44], perhaps because body positivity continues to focus on one’s appearance [46]. Some work has found positive body image outcomes following exposure to body neutrality content (i.e., emphasizing what the body and self can do beyond appearance) [45, 48]. These findings suggest that careful scrutiny should be employed when assessing client exposure to body positivity content. Although clinicians can educate on the possible benefits of exposure to this content, attention should be given to how this content can cultivate an appearance-oriented environment that may facilitate long-term harm [49]. Past intervention work has found that educating participants on the prominence and unrealistic nature of idealized bodies on social media is effective in reducing negative outcomes [24, 25]. Moreover, as the effects of highly visual social media are theorized to be particularly influential in the body image domain, appearance-oriented individual differences, such as susceptibility to appearance comparisons and appearance investment, are key traits to screen for [30••].

Active Versus Passive Use

Early work posited that passively using social media (i.e., scrolling or consuming content without direct interaction) is harmful for mental health, whereas actively using social media (i.e., posting and directly interacting with others) is beneficial [50]. The proposed mechanisms behind these associations are that passive use encourages harmful social comparisons and feelings of envy, as the content on social media tends to be highly idealized, whereas active use encourages social connection [50]. Indeed, numerous experimental studies indicate that passively browsing social media content (especially idealized content) negatively impacts mental health outcomes, including well-being and body image [51–53], particularly for those who tend to socially compare [54, 55].

Recent perspectives suggest that this dichotomy is too restrictive and these hypothesized effects may occur only under specific circumstances [56•, 57••]. For example, passive browsing may evoke negative effects on well-being when browsing others’ content and positive effects when browsing

one's own content [58, 59]. Moreover, negative effects on browsing others' positive content may only occur when the browsing target is distant, whereas positive effects may occur if the target is a close friend [60]. Likewise, negative effects on self-esteem and depressive symptoms may only occur when browsing social media content that is social, rather than non-social (i.e., the Facebook page for National Geographic [61]), and, among female college students, browsing (and leaving a comment on) others' social media content increased body image concerns only when browsing the content of a peer and not a family member [62]. Additionally, after an ostracism task, feelings of social connectedness were restored after passively browsing Facebook, but only when participants reported feeling close to other Facebook users [63]. In sum, the specifics of passive social media use, such as *whose* content is being browsed, are important for understanding potential effects.

Although there is evidence that active use can enhance well-being [63–65], support is not universal [53]. Instead, the dynamic of active use is likely more critical for mental health outcomes. Posting selfies can evoke negative effects on body image [35, 36]. Additionally, Verduyn and colleagues [57••] propose that warm and reciprocal active use is likely beneficial, whereas cold or hostile active use has either no effects or harmful effects on mental health. Due to the absence of nonverbal cues (e.g., facial expressions, body language), digital interactions can facilitate greater disinhibition for senders and ambiguity in tone that complicates comprehension for recipients [4]; in turn, perceptions of cold or hostile communication may arise. Studies finding benefits to active use often focus on particularly warm active use (e.g., posting positive pictures, expressing gratitude [64, 65]).

Clinicians should screen for what active and passive use typically looks like for a given client, including the content and accounts viewed during scrolling and the valence of interactions during active use. Education for passive use can address the dangers of scrolling through harmful content (e.g., idealized, highly visual content) and how targeted scrolling (e.g., viewing the content of close friends; reminiscing on positive past content [66]) may be more beneficial. Moreover, clinicians can educate on potential harmful active use (e.g., posting selfies, using social media as a mode for hostile communication) and promote active use that facilitates social connection or expressing positive sentiments (e.g., gratitude). Finally, clinicians should educate clients on the timing of engaging in both types of use, particularly active use. Although active use can result in benefits, it should not displace time spent conversing face-to-face; indeed, much experimental work demonstrates that digital technologies can disrupt face-to-face interactions [67]. Face-to-face interactions may yield greater psychological benefits than digital interactions, although digital interactions may still result in greater benefits than no interaction [68].

Feedback

Social media provides opportunities for users to receive social feedback, such as “likes” and comments. Quantifiable feedback can be a source of comparison, with users motivated to produce content that receives this positive feedback [69] which can be psychologically [70] and neurologically rewarding [71]. Receiving likes can boost well-being [70] and receiving few likes can

decrease well-being [72, 73]. However, an increased reliance on the receipt of this feedback can be harmful. For example, not receiving feedback fast enough is linked with lower levels of perceived online social support [74]. Users who value social media feedback display a more maladaptive psychological profile, with correlates including greater risky behavior, lower self-esteem, and greater stress and depressive symptoms [75–77]. Those who have a greater dispositional tendency to seek feedback may be particularly vulnerable to the negative effects of browsing others' social media content [58].

Clinicians should educate clients on the potential harms of being reliant on social media feedback and encourage behaviors that can de-emphasize the presence of feedback (e.g., Instagram currently has the option of hiding likes). However, clinicians should be mindful of the challenges of these behavioral changes for some. Higher feedback seekers are particularly vulnerable to browsing others' content, but also may be especially likely to reap rewards from social media use, potentially introducing resistance to behavior change [58]; moreover, those who support the presence of like counts on social media are also those who may be at greater risk to its negative effects [78].

Skill-building

After assessing a client's frequency and quality of social media use and educating on types of use that are potentially more harmful and more beneficial, clinicians can apply strategies aimed at transforming how clients experience social media. It is not feasible to simply remove any possible encounter with harmful content. For example, even if a client unfollows comparison-inducing targets, it is likely that they will still encounter this content to some extent, barring a complete abstinence of social media use. Given that these abstinence approaches are not necessarily effective [6••] and may have counter effects by restricting positive use [79], restructuring how clients approach social media may be more practical (and have longer-term benefits) in practice. Below, we list several strategies that experimental work has demonstrated may be effective in reducing harmful social media effects and promoting healthy social media use. These strategies are centered on cognitively reappraising responses to social media content, an approach that has been applied in intervention work [23, 25].

Social Comparison

Much of the content on social media is highly idealized [80] which increases the risk of engaging in harmful upward comparisons [81•]. In these cases, users perceive others are better off than the self and experience negative emotional reactions to this comparison [50, 81•]. Importantly, not all upward social comparisons result in negative consequences. Upward comparisons can be seen as a source of motivation for self-improvement and result in positive feelings [82]. Indeed, feelings of inspiration have been found to be prominent on social media [83]. Given the prominence of upward comparison material

on social media, feasible and effective interventions may not necessarily be those that reduce social comparisons entirely, but instead promote reappraisals when engaging in comparisons. Encouraging undergraduate women higher in comparison tendencies to feel compassion and kindness towards a comparison target has been found to reduce negative effects on body dissatisfaction and disordered eating [84]. Instructing college students to engage in social savoring (i.e., promoting feelings of joy when seeing someone else's successes) when using social media found that social savoring increased performance self-esteem post-intervention [85]. Although support for reappraising social media content in a positive manner is not universal [86], initial evidence shows some promise with this technique.

Clinicians can encourage clients to reflect on physiological and emotional reactions when browsing their social media feeds and to pay careful attention to content that may promote feelings of envy or poorer self-evaluations. Clinicians can use a stimulated recall approach to facilitate this self-reflective process. From there, clinicians could encourage clients to cease following content that evokes negative reactions and continue following content that evokes positive reactions. Given the prominence of upward social comparison material on social media, clinicians can encourage clients to reappraise this content if encountered, such as by fostering positive feelings directed towards comparison targets rather than feelings of envy or jealousy.

Self-compassion

Self-compassion involves practicing self-kindness and understanding that one's flaws and failures are a part of the human condition [87]. Self-compassion has demonstrated promise in attenuating negative social media effects and promoting healthy social media use in three central ways. First, some studies have found that exposure to social media content endorsing self-compassion has mental health benefits, including enhancing body image and improving mood and well-being [88, 89]. Importantly, there is little evidence that adding messages of self-compassion to problematic social media content (e.g., fitspiration) mitigates the negative effects of exposure to this content [88], suggesting that a reduction in exposure to "unhealthy" social media content may be key to reaping the benefits of positive social media use.

Second, studies have examined benefits of trait self-compassion. Higher levels of trait self-compassion are associated with less unfavorable self-comparisons to social media content; moreover, trait self-compassion may buffer negative effects that exposure to harmful fitspiration content has on state self-compassion [90]. A follow-up study found that exposure to idealized Instagram images increased unfavorable self-comparisons only for those lower in self-compassion [90]. These findings are promising in showing how trait self-compassion may be protective in negative social media effects. However, additional experimental work is needed, particularly as cross-sectional research does not consistently illustrate the protective role of self-compassion [91].

Third, some intervention work targeting self-compassion has been conducted. In a 5-week self-compassion intervention with adolescents that targeted

responses to social media content, improvements in body image perceptions were observed, although the extent of engaging in social media appearance comparisons did not change [92]. A similar intervention targeting self-criticism in the context of social media among young adults found that the intervention successfully reduced appearance motivations for social media use and appearance comparison, and these changes persisted at a 2-week follow-up [93]. Instructing women to answer a writing prompt in which they expressed kindness and compassion to themselves attenuated the negative effects of browsing idealized Instagram photos [94]. Finally, randomly assigning young women to write about their use of self-compassion strategies in a private Facebook group when faced with appearance-saturated situations reduced appearance comparisons and drive for thinness and increased body appreciation and self-compassion, with these results holding in a 3-month follow-up [95]. Collectively, findings suggest the utility of encouraging clients to focus on social media content that promotes self-compassion and encouraging clients to cultivate self-compassionate strategies when engaging with social media.

Mindfulness

Mindfulness is defined as a focus on the present moment, with feelings of curiosity, openness, and acceptance central to this focus [96]. Numerous studies have demonstrated the positive associations that mindfulness has with mental health outcomes [97], and recent work has examined the role that mindfulness may have in attenuating negative effects of social media. Mindful individuals may be more impervious to potential negative social media experiences by employing more adaptive coping strategies, engaging in higher self-compassion, and being less inclined to ruminate [98]. Compared to adults lower in mindfulness, adults higher in mindfulness were less negatively impacted by a social media ostracism task in which they received low levels of positive feedback (in the form of likes [98]). In a 5-week mindfulness intervention study with adolescents, engaging in the mindfulness intervention resulted in decreased problematic social media use [99]. More experimental research is needed to fully examine the benefits of mindfulness; however, these initial studies indicate that encouraging a more mindful approach to social media use is likely a fruitful strategy clinicians can employ in promoting healthier social media use.

Conclusions

The extant experimental literature indicates the benefits and drawbacks of social media use. A fundamental goal for clinicians should be to determine both *how often* their clients engage in social media use and the *quality* of this use. After obtaining this assessment, clinicians can educate clients on potentially unhealthy types of social media use (e.g., exposure to and production of idealized content, a reliance on social media feedback) and promote various

skills to attenuate or even reverse the negative effects that this type of use can have (e.g., cognitive reappraisal to social comparison-inducing content, self-compassion and mindfulness skills). These empirically informed strategies are a first step towards enhancing positive social media use in the contemporary digitally saturated era.

Author contributions

KB drafted the manuscript. KF and AM provided critical revisions. KF drafted Table 1. All authors reviewed the final manuscript and provided final feedback.

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- Of importance
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