

14 Digital Media, Suicide, and Self-Injury

Kaylee Payne Kruzan and Janis Whitlock

While interest in the relationship between media use and young people's mental health is not new, the complexity of newer media technologies present novel research challenges – largely due to the interactive, multidimensional nature of contemporary communication technologies, such as those typified by social media environments. While early media studies focused primarily on effects of “screen time,” studies of modern-day social media must grapple with a number of overlapping and influential factors since effects are no longer related to mere exposure to potentially harmful content, but to the interactions that take place as individuals use and shape these platforms, as well.

The relationship between social media and self-injurious behaviors – specifically suicidal thoughts and behaviors and nonsuicidal self-injury (NSSI) – emerged as a primary research focus soon after social media came into widespread use, perhaps due to the well-established links between both media exposure and well-being (Wartella & Reeves, 1985) and to media effects and suicidal thoughts and behaviors (Phillips, 1974). This focus was reinforced by studies linking widely covered suicides (Niederkrötenhaler et al., 2012) and popular shows depicting suicide (Swedo et al., 2020) to upticks in self-injury and suicide-related activity.

This chapter is devoted to examining the relationship between social media and self-injurious thoughts and behaviors. Self-injurious thoughts and behaviors (SITB) describe thoughts and behaviors with (e.g., suicidal ideation, suicide plans, gestures, and behaviors) and without (e.g., NSSI) suicidal intent (Miller & Prinstein, 2019). While the developmental trajectories of NSSI and suicidal thoughts and behaviors differ from one another (Fox et al., 2015), SITB are not always clearly delineated from one another in the literature, in part because they commonly co-occur and in part because they each contribute to an increased risk for future suicide attempts (Kiekens et al., 2018). Such conflation applies to the literature on which this chapter draws. For simplicity, we will use the term SITB to refer to self-injury with, and without, intent in this chapter and we will refer to more specific constructs within this broader term when studies focus on a narrower sample.

Chapter Aims

This chapter includes two overarching aims: (1) to summarize research on the risks and benefits of social media use for SITB-related outcomes, including what is and is not known about primary mechanisms at play in these relationships and (2) to identify high-level implications, including opportunities and challenges for future research, intervention, and prevention efforts. The first section provides an overview on the prevalence and presentation of SITB in adolescence and the role of social media in SITB, while the second section summarizes findings related to the risks and benefits of social media use for SITB, and key mechanisms involved in these relationships. The final section covers implications for research, practice, and policy, through high-level opportunities and challenges.

Background

Adolescence and SITB

Understanding and addressing SITB is of major public health importance. Suicide is the second leading cause of death among young people between the ages of 10 and 24 globally (Curtin et al., 2016). Among US-based adolescent populations, lifetime prevalence of suicidal thoughts and behaviors is between 3.1% and 8.8% for suicide attempts and between 19.8% and 24.0% for suicidal ideation, with a marked increase in both suicidal ideation and behavior between the ages of 12 and 17 (Nock et al., 2008). Rates of NSSI – “the deliberate, self-inflicted damage of body tissue *without suicidal intent* and for purposes not socially or culturally sanctioned” (International Society for the Study of Self-Injury, 2018) – range from 17% to 37% among adolescents and young adults (Jacobson & Gould, 2007; Swannell et al., 2014).

Self-injurious thoughts and behaviors typically emerge in early- to mid-adolescence, with average age of onset for NSSI between 13 and 15 (Gillies et al., 2018), and mid- to late-adolescence for suicidal thoughts and behaviors (Nock et al., 2013). Older adolescents and young adults are more likely to die by suicide (Cha et al., 2018), when compared to younger adolescents – a pattern consistent with the idea that risk of engagement in serious suicide-related behaviors increases over time as experience of trauma and/or distress accumulates and interacts with bio-psycho-social developmental changes in ways that enhance vulnerability to cognitive and emotional challenges (Steinberg, 2010). Adolescence is also characterized by a highly social orientation, increased propensity for risk taking, and individuation/identity formation – each of which may interact with social media use in ways that amplify, or increase susceptibility to, potential media effects.

The Role of Social Media and SITB

Three decades of experience with, and empirical study of, unidirectional media affirms the potency of media influence on behavior, particularly for adolescents and children (Brown et al., 2006). The empirical link between exposure to violent media content and child and adolescent aggression was central to early media concerns and resulted in coordinated policy responses (US Senate, 2000). More recent efforts to understand the effects of social media on youth mental health retain a heightened focus on the potential adverse effects, such as: cybervictimization (John et al., 2018; Massing-Schaffer & Nesi, 2020), internet addiction (Jasso-Medrano & López-Rosales, 2018), and exposure to graphic self-injury and suicidal content (Arendt et al., 2019). It is thus not surprising that there are serious concerns about the impact that social media may have on individuals who bring preexisting vulnerabilities to online exchanges, such as SITB-vulnerable young people.

While attention to each of these domains has translated into research on social media effects of value to professionals, researchers, and platform designers, it has not yet led to robust understanding of the precise risks that social media pose to youth mental health – largely due to the number of contingencies that require disentangling and a need for methodological innovation (Whitlock & Masur, 2019). Moreover, while concern about the impact of social media on youth continues to be a regular feature of public worry and headlines, it is also recognized that social media offers important support to users, including SITB-vulnerable individuals, by (1) facilitating social connection (Duggan et al., 2012), (2) extending the reach of prevention/intervention efforts (Thorn et al., 2020), (3) linking young people who are already engaging in SITB with much needed information and support (Lavis & Winter, 2020; Lewis & Michal, 2016), and (4) increasing public awareness of SITB and reducing stigma (Li et al., 2018; Nathan & Nathan, 2020). A balanced and nuanced approach that takes into account both the risk and benefits of social media for SITB outcomes is needed to effectively consider the many factors that likely mediate and moderate social media effects.

Brief Overview of Methods Used to Study the Relationship Between SITB and Social Media

A brief historical overview on the methodological approaches most commonly used in social media and SITB research is both helpful in contextualizing the risks and benefits and in surfacing methodological frontiers in this domain. In general, SITB-focused research aims have (1) described online content and activity related to SITB, (2) explored the relationship between online activity and SITB, and (3) identified risks germane to intervention efforts. While these efforts have laid the theoretical and empirical foundations necessary for inferring and anticipating risks and benefits and for understanding key

mechanisms, they have been less effective in surfacing and disentangling clear causal relationships between social media use and SITB behaviors or in describing the moderating role preexisting SITB vulnerability plays in these relationships.

In general, research documenting potential effects of SITB-related content and exchange has been more straightforward to generate than research aimed at understanding causal relationships between online activity and SITB; in part because the latter requires innovative methods that balance privacy and ethical concerns with the need for cross-ecological and granular approaches capable of disentangling effects. Moreover, because the nature of communication technologies is so dynamic, the research methods required to understand effects must also be dynamic. Most early work focused on content and thematic analyses to investigate common themes in online discussions about self-injury and suicide (Rodham et al., 2007; Whitlock et al., 2006). Surveys were (and still are) used to assess motives for social media use and to understand the perceived effects of use (Lewis & Michal, 2016).

Recent advances in the application of computational methods to social media research have paved the way for investigation of links between online activities and SITB risk, largely through tracking patterns in linguistic and behavioral markers (De Choudhury et al., 2016; Du et al., 2018). Ecological momentary assessments (EMA), or diary methodologies, have been used to understand the relationship between social media use and outcomes related to mental health. For example, EMA methods were used to understand what behaviors young people engage in instead of self-injury (Fitzpatrick et al., 2020). Longitudinal studies have begun yielding results, but even these are limited by challenges in disentangling between- from within-effects of media use, understanding risks and benefits accrued to vulnerable subgroups, and the way that both developmental stage and specific social media affordances interact with social media use (Schemer et al., 2020). In sum, research focused on the intersection of SITB and social media use has evolved from a focus on more static content in online communities (precursors to social media) to more dynamic interactions between user behaviors, content, and offline markers over time. While important methodological challenges remain, much has been learned; this is the focus of the following sections.

Risks of Social Media for Self-Injury and Suicide

Study of the ways in which use of social media increases SITB risk reveals a complex portrait of effects, some of which clearly enhance risk of SITB behavior and others that may protect against such risk. This section details the dominant categories of risk identified thus far including: (1) exposure to SITB content, (2) normalization and narrative reinforcement, (3) contagion, (4) cyberbullying, and (5) heavy social media use.

Exposure to Suicide and Self-Injury Content

As with traditional media, at least some research documents a link between exposure to suicidal and self-injury social media content and increased risk for SITB experiences. Exposure to digital SITB-related content is not infrequent – in one study, 25% of young people were exposed to suicide stories through social media (Dunlop et al., 2011). This is concerning because increased exposure to self-injury-related content has been associated with decreased aversion to self-injury and to future suicidal ideation in past work (Franklin et al., 2016) and because habituation to SITB content may reduce barriers to, and increase the acquired capability for, suicide (Massing-Schaffer & Nesi, 2020). Moreover, such risks may not diminish over time. For example, in a study of effects of exposure to self-harm content on Instagram, researchers found that lifetime exposure to self-harm content was associated with increased SITB risk. Furthermore, exposure was related to an increase in self-harm behaviors, suicidal ideation, and hopelessness one month later, even when controlling for preexisting SITB vulnerability (Arendt et al., 2019).

While it is possible that well-moderated sites could minimize harm resulting from unregulated exposure to triggering content, empirical evidence suggests that even with site moderation individuals can be exposed to triggering graphic or emotional images or text (Baker & Lewis, 2013; Lewis & Michal, 2016), including tips on concealment, suicidal ideation, or plans (Dyson et al., 2016). Indeed, in the aforementioned Instagram study, only 20% of those who reported seeing self-harm content intentionally searched for it (Arendt et al., 2019). Further, some studies indicate that a subgroup of individuals access online communities in order to sustain or trigger self-injury and share maladaptive techniques (Lewis & Seko, 2016; Whitlock et al., 2006).

Awareness of the potential for social media content to have harmful effects has led to an increase in moderation efforts, often by platform developers themselves. Popular social media platforms like Instagram, for example, have built in “sensitivity screens” (i.e., trigger warnings) that are meant to shield content related to self-injury and other harmful behaviors enabling users to view content if they clear the shield (Carman, 2019). However, even these efforts require empirical study since, in this case, evidence suggests that use of trigger warnings to decrease risk of SITB-related harm has relatively limited effects on distress (Sanson et al., 2019) and may increase anticipatory anxiety in some cases (Gainsburg & Earl, 2018). Effects of what a user does in response to a trigger warning is also less intuitive than it might seem. For example, a study focused on self-injury related activity on TalkLife, a mobile peer-support app, showed that choosing to dismiss a trigger warning and view self-injury content was related both to greater intentions to injure *and* greater ability to resist injuring within a week’s time (Kruzan et al., 2021). Notably, posting triggering content was related to increased odds of both self-injury thoughts and behaviors. In sum, more work is needed to explicate both

the factors that contribute to effects related to exposure to SITB content and the potential protective value of moderation efforts, like trigger warnings.

The Downside of Social Connection on Social Media: Normalization and Narrative Reinforcement

The fact that self-injury and suicide-related posts so frequently co-occur with themes of loneliness underscores the important role that social connection plays in mental health and well-being (Cavazos-Rehg et al., 2017). Indeed, the promise of rich social connection is one of the factors that makes participation in social media so appealing. However, empirical evidence suggests that the “social” part of social media is simultaneously a risk and a protective factor for SITB. While the perceived and actual social support that comes from social media’s ability to connect young people struggling with self-injury and suicide can be beneficial and SITB-protective, regular exposure to SITB content and association with other individuals struggling with SITB may expose vulnerable adolescents to communities where self-injury is normalized or encouraged, even if not overtly or consciously (Rodham et al., 2007; Whitlock et al., 2006). This “normalization effect” is commonly seen in studies of online communication about self-injury where young people discuss self-injury thoughts and behaviors in detail and often minimize the severity of self-injury and its consequences (Dyson et al., 2016). Moreover, the tendency for individuals to co-construct and then reinforce foundational narratives, sometimes termed “narrative reinforcement,” that essentially justifies the need for and use of SITB-linked activities, can lead to desensitization and normalization of behavior, especially when self-injury is depicted as painless and effective (Whitlock et al., 2007).

Even when a user is trying to minimize exposure to triggering content, most studies show that it is common for pro-recovery messages and encouragement to occur alongside pro-self-injury posts and comments, such as advice on how to injure safely and how to conceal wounds (Lavis & Winter, 2020; Whitlock et al., 2006). This may not only normalize self-injury, but may also trigger SITB-impulses or discourage use of alternative coping strategies or professional help seeking (Dyson et al., 2016; Smithson et al., 2011). In sum, while the emotional support received through social media sites can positively influence the recovery process, this support may detract from the severity of the behavior, potentially slowing the change process (Dyson et al., 2016).

Contagion: Spread and Scale of Social Media Messages

The idea that exposure to a behavior through media may be “contagious” is a subject of long-standing research interest. Research shows both an increase in the number of SITB themes in on- and offline media, and concomitant

concern that such content may contribute to onset or maintenance of SITB among vulnerable individuals, mostly likely through social modelling (Jarvi et al., 2013). While the adverse impact of SITB social media content on individuals with existing vulnerabilities is intuitive, recent work suggests that even individuals without existing vulnerabilities may be at risk of adverse outcomes from SITB-related themes in social media. For example, there is evidence that viewing suicide-cluster-related posts (e.g., vigils, memorials), online news articles related to suicide, and watching the Netflix series *13 Reasons Why* (which features suicidal content) is associated with increased odds of suicidal ideation and attempts, among students both with and without prior self-injury history (Swedo et al., 2020). This study did not control for other known risk factors, like depression or anxiety, and it cannot rule out the possibility that other important preexisting vulnerabilities exist, but it does suggest that even individuals without prior self-injury history are adversely affected by some media content. This possibility is also implicit in research that finds an over 14% increase in population-based suicide trends for young people between 10 and 19 (Niederkroenthaler et al., 2019) and “excess” hospitalizations for suicide attempts among young people (Cooper et al., 2018) following the release of *13 Reasons Why*.

In a similar vein, research reveals that individuals who post suicidal content are more tightly clustered in friend, or reposting groups, than users who do not post suicide-related content. This supports the idea that individuals tend to gravitate to like-minded others online in ways that may heighten likelihood of narrative reinforcement, and concomitantly, risk of spread among those most vulnerable (Colombo et al., 2016). However, the authors also note that re-tweeting behavior connects users whose posts contain suicidal ideation with users whose posts do not, providing evidence for the potential of contagion across diverse networks.

Contagion and Social Media “Challenges”

Social media challenges allow users to pose a behavioral challenge to followers who then receive online community recognition for meeting the challenge – most often over a series of days or weeks. While potentially harmless, or even beneficial, challenges can also heighten individual SITB risk. The Blue Whale Challenge, which occurred through social media from 2013 to 2017, is purported to encourage youth to participate in a series of tasks over 50 days that involve self-harm and culminate in a suicide challenge (Sumner et al., 2019). Not only is the challenge itself associated with heightened SITB risk, but YouTube media covering this challenge often violated Suicide Prevention Resource Center guidelines (Khasawneh et al., 2020). Such challenges also underscore the ways in which the very features that make social media so attractive also present novel risks.

Cyberbullying

Bullying is a long-standing source of stress for young people and this holds as true in online social settings as it does in offline social settings (John et al., 2018). Cyberbullying, a term used to describe bullying that occurs online, is also associated with heightened risk for SITB. Notably, it is not just the victims of cyberbullying who are at elevated SITB risk. A recent meta-analysis shows that youth victims of cyberbullying are over twice likely to engage in self-harm, to report a suicide attempt, and to report suicidal thoughts, when compared to nonvictims (John et al., 2018). Even one episode of cybervictimization increases risk of suicidal ideation (Hirschtritt et al., 2015). Moreover, the risk of SITB after a cyberbullying incident increases significantly among individuals with existing vulnerabilities. Indeed, in a study of adolescents presenting to Canadian emergency departments for mental health complaints, those reporting histories of cybervictimization were over 11 times more likely to report suicidal ideation (Alavi et al., 2017). Also, being both a victim and perpetrator of cyberbullying doubles the risk of reporting suicidal thoughts when compared to those who have one of these experiences (Bonanno & Hymel, 2013; John et al., 2018).

Heavy Social Media Use

Research has also shown that risk of NSSI and SITB increases with heavy social media use (Lee et al., 2016; Twenge & Campbell, 2019). Indeed, in a study of Canadian high school students, those who spent more than two hours a day on social media had were five times more likely to experience suicidal ideation when compared to peers reporting fewer than two hours of social media use a day (Sampasa-Kanyinga & Lewis, 2015). Similarly, adolescents who report heavy digital media use are twice as likely to report suicidal thoughts, suicide plans, and suicide attempts when compared to light users, according to a large survey study (Twenge & Campbell, 2019). And, in a recent review of seven studies researchers documented a direct association between heavy social media/internet use and suicide attempts (Sedgwick et al., 2019).

Interestingly, some studies show that some social media use is better than no use (Kim, 2012; Lee et al., 2016). These findings are consistent with broader literature on social media use and well-being that suggests curvilinear relationships between social media use and well-being with benefits derived from some use, versus no use, and risks increasing most significantly from low or moderate to heavy use (Kim, 2012; Przybylski & Weinstein, 2017; Twenge & Campbell, 2019). Specifically, risks increase most significantly from low (<1 hour a day) or moderate to heavy use (>5 hours a day) (Twenge & Campbell, 2019). One explanatory theory is that time spent on social media displaces other activities that could be beneficial for mental health, such as physical activity, in-person social interaction, and sleep – all risk factors for suicide (Porrás-Segovia et al., 2019; Sedgwick et al., 2019; Verkooijen et al., 2018).

Benefits of Social Media for Reducing Self-Injury and Suicide

While risks associated with social media use are a focus of continued empirical investigation, salutary effects have also been documented. Reviews focused on social media and SITB (deliberate self-harm: Biernesser et al., 2020; Dyson et al., 2016 and self-harm and suicide: Daine et al., 2013; Marchant et al., 2017; Memon et al., 2018) converge in their identification of tangible benefits, including enhanced: (1) social support and connectedness, (2) self-knowledge/expression, and (3) access/exchange of resources/information. Key empirical findings for each area are described below.

Social Support and Connectedness

One of the primary perceived benefits of social media use is the exchange of social support not bounded by time or geography. This is important because social support is known to buffer effects of negative life events, enhance mental health and well-being (Cutrona & Suhr, 1992), decrease feelings of isolation, lead to sense of purpose, and to promote feelings of acceptance or being understood (Daine et al., 2013). Opportunities for social support through social media can be powerful for young people with SITB, since stigma is often an impediment to offline help and support seeking. Online environments allow for anonymity and carry few clear social penalties for candid sharing, which makes such environments particularly attractive to individuals concerned about disclosing SITB-related behaviors or impulses to people in their offline lives (Duggan et al., 2012). And, since social support is a critical protective factor for SITB (Joiner et al., 2012), social exchange in social media forums offers a promising alternative to offline sharing.

It is thus unsurprising that empirical evidence suggests that young people with SITB histories use the Internet more often than their peers (De Riggi et al., 2018; Memon et al., 2018) and that it is a preferred means for seeking and receiving help (Frost & Casey, 2016). For example, youth with suicidal ideation are more likely to report online-only friendships, relative to those without suicidal ideation, and these friendships appear to buffer the harmful effects of relational victimization and stress (Massing-Schaffer et al., 2020). Nearly one-third of young people with a history of self-injury had reported online help seeking in one study – and those who sought help online were more distressed and suicidal than those who had not (Frost & Casey, 2016). Additionally, adolescents with more recent NSSI have higher levels of online support seeking, compared to those with past or no NSSI history (De Riggi et al., 2018). Even when individuals have a strong support system offline, they may have trouble accessing support in times when they need it (Kruzan et al., 2021; Lavis & Winter, 2020). The immediate nature of social support exchange on social media may be important for individuals who struggle with SITB given that intense urges are commonly cited as a key barrier to behavior

change (Kruzan & Whitlock, 2019) and findings showing that young people frequently look for, and receive, emotional support online when they are experiencing an urge (Lewis & Michal, 2016; Rodham et al., 2007).

Not all social support is equal, however. While some work suggests that young people perceive benefits from participation (Brown et al., 2020; Lewis & Michal, 2016), others note the “mundane” or safe nature of the advice, which leads to questions of actual utility (Smithson et al., 2011). The availability and immediate accessibility of such support is nonetheless quite appealing – as is the fact that support is exchanged among peers with shared experience and experiential knowledge (Marchant et al., 2017; Thoits, 2011). Research consistently documents a preference for peer versus professional support for NSSI and the tendency for young people to confide SITB in peers versus others in their social network (De Riggi et al., 2018), something social media facilitates organically.

The question of whether such peer support is helpful for SITB outcomes remains nascent. Early work showed positive associations between social support received and decreased self-injury behaviors (Murray & Fox, 2006), but research directly connecting social support through social media use to its effects on SITB outcomes is limited. One experimental study varying exposure to hopeful or hopeless YouTube videos, found that hopeful messages were associated with increased positive attitudes toward recovery, suggesting shifts in recovery-oriented subjective norms (Lewis et al., 2018). Interestingly, there were no attitudinal changes in those viewing hopeless messages.

Self-Knowledge and Expression

Beyond the use of social media as a source of social support is its role in facilitating self-expression and exploration. Being able to connect and provide mutual support, narrate experiences, and self-reflect, while also maintaining autonomy and anonymity, are all identified as clear benefits to social media use among individuals with SITB history (Coulson et al., 2017; Rodham et al., 2013). Indeed, self-oriented motivations such as understanding NSSI experience or expressing oneself through narrative description or other forms of creative expression are potent motives of online activity (Seko et al., 2015). Insight gleaned through sharing one’s story and encountering resonance in others’ stories is important in recovery and is associated with active information seeking, increased self-efficacy, and enhanced self-awareness (Kruzan & Whitlock, 2019). Since young people frequently provide advice to others online (Seko et al., 2015; Whitlock et al., 2006), it is also possible that seeing oneself as a valued mentor to others with shared struggles may increase commitment to recovery processes. Online self-presentation and expression can assist in developing self-understanding, and be associated with beneficial shifts in self-perceptions (Kruzan & Won, 2019; Valkenburg, 2017).

Exchange of Resources and Information

Use of social media to both identify and exchange coping techniques is also common and potentially beneficial (Duggan et al., 2012) for individuals navigating self-injury or suicidal thoughts and urges (Lavis & Winter, 2020; Lewis & Michal, 2016). Tips on how to reduce the urge or replace self-injury behaviors are also highly salient. For example, in a study of three different social media sites (Reddit, Instagram, Twitter) researchers found a rich exchange of coping advice related to visual, distraction, and sensory techniques effective in reducing urges (Lavis & Winter, 2020). There is also evidence that topics related to professional help seeking for SITB are a feature of some online exchange (Lavis & Winter, 2020), but whether this is common remains unclear since there is work suggesting that online exchange does not lead to increased professional help seeking (R. C. Brown et al., 2020) and because this line of inquiry remains underexplored.

The power of social media exchange to alter offline behavior does open opportunity for development of more formal intervention. Online peers may be uniquely positioned to provide advice on treatment and coping strategies, and this advice may be easier to digest, and apply, when coming from someone who has “been there” (Naslund et al., 2016). Such exchange can be considered a unique and potent form of expertise (Marchant et al., 2017) that can be leveraged to deliver coping- and recovery-supportive messages and resources. Since not all resources exchanged through social media are evidence-based, and some can be harmful or depict self-injury as an effective coping strategy (Lewis & Baker, 2011; Seko & Lewis, 2018), it is crucial that the nature of naturally occurring exchange is understood and mitigated when potentially harmful.

Key Mechanisms: Moderators and Mediators of Effects on SITB

Individual, developmental, and social-contextual factors are all empirically and theoretically relevant when considering susceptibility to SITB and media effects, especially since young people with preexisting vulnerabilities, such as other mental health conditions, are more likely to be exposed to harmful content (Dyson et al., 2016). SITB-specific individual-level factors such as prior SITB history may moderate social media effects (Dyson et al., 2016). Cyberbullying may also moderate or mediate social media effects (John et al., 2018), and while underexplored, factors such as offline support and prior SITB help seeking are likely to moderate the effect of social media on SITB. For example, social media effects, particularly negative effects, might be less damaging to individuals who have rich social supports outside of social media. A review of the most acknowledged likely mediators follows.

Mental Health History

Just as prior mental health history has the potential to moderate the effects of social media use on SITB outcomes, it can also mediate this relationship. In some work, the relationship between heavy social media use and NSSI was mediated by factors such as suicidality, anxiety, and affective and psychotic disorders (Mészáros et al., 2020).

Affect and Intentions

Emotional affect and motives for use are also likely mediators of the relationship between social media and SITB. The connection between NSSI and affect is well established, and may be particularly important in understanding interactions that lead to risks or benefits of social media use, since both NSSI (Klonsky, 2007) and social media use can be ways to modulate emotion (Rideout & Fox, 2018). Indeed, young people can deliberately seek out uplifting, distressing, or neutral messages that reflect, and may impact, their own affective state. While few studies have examined the role of mood in the relationship between SITB and social media use, young people with lived NSSI experience often discuss mood as part of their use of social media and related technologies (Seko et al., 2015).

Interactional Factors

In addition to the amount of use, the way someone uses social media is consistently connected to mental health outcomes (Verduyn et al., 2017). This trend holds for SITB-related studies, as well, but the patterns of effects are not entirely intuitive. In a cross-sectional study of the association between SITB (both NSSI and suicidal thoughts and behavior) and social media use type among Norwegian university students, researchers found that active public social media use (e.g., posting, commenting) was associated with *increased* odds of NSSI ideation and behaviors and suicide attempts, whereas social private use (e.g., messaging friends) was associated with *reduced* odds of all NSSI and suicide outcomes (Kingsbury et al., 2021). Passive nonsocial use (e.g., reading news) was associated with *decreased* odds of NSSI ideation, NSSI, and suicidal ideation, and active nonsocial use (e.g., for studies) was associated with *decreased* odds of suicide attempt. In parallel with the broader literature on social media effects on well-being, these findings suggest a nuanced relationship that differs by types of engagement.

Social Comparison Processes

Social comparison is a primary mechanism through which social media use impacts mental health and well-being (Appel et al., 2016; Kruzan & Won, 2019; Wang et al., 2017). Upward social comparison – wherein individuals

compare themselves to those who are perceived as better off – has been associated with reductions in self-esteem, increased negative affect, and envy (Appel et al., 2016; Wang et al., 2017). Consonant with this general trend, Kingsbury et al., (2021) found that the presence of social comparison is associated with increased odds for all NSSI and suicidal outcomes. However, social comparison processes may look slightly different on social media sites or forums that are structured almost entirely around conversations about SITB (e.g., TalkLife) where the general positivity bias documented in mainstream social media does not exist. In light of its influence, the role of social comparison for SITB risk in social media should be explored further.

Opportunities and Challenges

Despite limitations, social media and related platforms, like mobile apps, offer excellent opportunities to leverage modern communication technologies in ways that provide timely and scalable intervention and, ideally, prevention. Such opportunities, however, present unique challenges related to methodological innovation and strategies for effectively addressing privacy and ethical considerations.

Opportunities: Amplifying the Beneficial Potential of Social Media

In addition to the opportunities inherent in the nature of the technology's design, such as the possibility for enhanced social connection and belonging, there are unique opportunities for: (1) identification/detection, (2) intervention, (3) prevention, and (4) awareness/stigma reduction.

Identification/Detection

Automated methods for predicting SITB risk and social media effects are promising as they are capable of considering complex combinations not likely to arise from more traditional assessments (Walsh et al., 2017). Creative use of machine learning has been successful in early efforts to detect and address suicidal content, particularly when used to detect and intervene with novel online risks, such as pro-suicide games (Sumner et al., 2019). This same method can also be used to identify at-risk users. Natural language processing and topic modeling have been leveraged to understand changes in suicide-related content following national reports of celebrity suicides (Kumar et al., 2015) and changes in emotional expression and self-attentional focus are consistently identified as indicators of higher suicide risk, for example (Coppersmith et al., 2018; De Choudhury et al., 2016). However, most work has focused on high-level trends, rather than individual risk patterns, which would be useful for tailoring interventions. An exception to this is a study that

was able to differentiate between users who are at risk of transitioning to suicidal ideation (De Choudhury et al., 2016). While discerning posts related to self-injury with, and without, suicidal intent is more difficult, it is a promising area for further investigation.

Intervention

As the ability to detect at-risk users who could benefit from additional resources improves, scalable interventions delivered through social media will be possible. Preliminary evidence suggests that young people would be receptive to digital interventions, such as those through social media (Naslund et al., 2016) and that digital interventions focused on acquisition and implementation of evidence-based SITB coping skills are likely to be efficacious in reducing self-injury (Rizvi et al., 2016; Schroeder et al., 2018). Such interventions could also serve as a decisional tool for future help-seeking behaviors, for both those at risk of SITB and concerned friends and family (Rowe et al., 2018).

Two frameworks particularly promising for early intervention in the social media environment are: (1) single session interventions (Schleider & Weisz, 2017) and (2) digital micro interventions (Baumel et al., 2020). Single session interventions (SSIs) – brief, but potent, treatments designed to last one session – have shown promise in reducing many mental health outcomes in adolescent populations (Schleider & Weisz, 2017). These interventions are scalable, potentially capable of reaching young people who are unlikely to come into contact with more formal/traditional services, and are flexible enough to be disseminated in multiple contexts, including social media. Additionally, the potential value of SSIs in reducing SITB has already been noted (Dobias et al., 2020).

Digital micro interventions (DMIs) are small “bite-sized” interventions designed to fit seamlessly into an individual’s natural use of media (Baumel et al., 2020). In contrast to the linear and/or single-platform approach DMIs work across a number of platforms (e.g., social media apps, text messaging) and involve a series of smaller, dynamic touch points that are responsive to young people’s media habits. Since at least one suicide prevention study suggests that young users want preventive interventions embedded in the platforms they already frequent (Thorn et al., 2020), DMIs may be particularly well suited for delivering SITB early intervention and prevention.

Prevention

Social media can be leveraged to increase awareness, reduce stigma, and provide psychoeducation at scale (Robinson et al., 2016). Simulation studies in this area demonstrate that suicide prevention efforts on social media have the potential to reach at-risk populations at a much larger scale than

traditional methods (Silenzio et al., 2009). Despite this potential, few prevention efforts for SITB to date have been disseminated on social media. Some of the more innovative work in this area engages young social media users in codesigning workshops aimed at developing a social media campaign (the #chatsafe project) focused on safe communication about suicide online (Thorn et al., 2020). The project demonstrated that it is feasible to safely engage young people in codesigning a suicide prevention intervention (Robinson et al., 2018; Thorn et al., 2020). A number of auxiliary but useful key takeaways surfaced through this process, including finding that young people wanted to see guidelines through sharable content – including videos, animations, photographs – and that they want to feel visible in the media campaign (Thorn et al., 2020).

Awareness and Stigma Reduction

Destigmatizing mental health struggles and increasing positive discourse and disclosure is another opportunity for social media to address SITB. Social media can be used to gauge public perceptions of suicide, determine needs for literacy, and deliver psychoeducation when needed (Nathan & Nathan, 2020). Social media mining can also be leveraged to improve the performance of stigma reduction programs (Li et al., 2018). However, more research is needed to better understand how social media can be used to reduce stigma and promote open and nuanced discussions.

Challenges: Minimizing the Negative Potential of Social Media

Some of the challenges of studying and understanding the relationship between social media use and SITB outcomes are broadly related to (1) creating and maintaining a safe environment, (2) methodological innovation, and (3) privacy and ethical considerations.

Creating and Maintaining a Safe Environment

The need to attenuate negative effects of social media use and prevent further “digital harm” – or “online communication and activity that leads to, supports, or exacerbates, non-suicidal yet intentional harm or impairment of an individual’s physical well-being” (Pater & Mynatt, 2017) (p. 1501) is critical to creating and maintaining safe online environments. While much of the work focused on social media and SITB risks focuses on moderation, it is also useful to think about how spaces can be designed to facilitate connection and supportive exchanges and to make negative interactions less likely. To accomplish this, however, understanding of how platforms can be designed to protect users against negative experiences (e.g., cyberbullying) without sacrificing opportunities for user agency (including peer-to-peer intervention) at

interaction and platform level must be enhanced and leveraged. Researchers in fields like human–computer interaction are particularly well suited to address these concerns due to their person-centered approaches, especially when working in collaboration with experts in both SITB and adolescent development and well-being.

Methodological Innovation

The dynamic nature of social media environments coupled with the broad-reaching messaging power presents new and important methodological challenges for research – all of which merit careful attention from scholars in various technical and clinical disciplines. Social media data has improved our understanding of the needs and struggles of young people with SITB histories and has been linked to markers of SITB risk. However, both automation and platform use preferences evolve rapidly – necessitating a flexible approach. While use of automated methods has powerful potential, algorithms are “black boxes,” and utility is not likely to be of universal ease or impact across platforms. Therefore, understanding variations in speed, efficiency, and utility of methods across platforms will be a key component of augmenting utility. It will be similarly important for researchers to consider how to best translate findings from sophisticated detection algorithms into practice and to have a set of guidelines for developing, and validating, social media interventions.

Two of the greatest needs for future research are to examine the temporal relationship between online activities and behavior change, and to discern which mechanisms contribute to desirable outcomes. To do this, it will be important to triangulate different types of data and methods (Lavis & Winter, 2020) and to consider new methodological approaches capable of tracking what participants actually see and do online. Combining EMA with tracking (logging media use), for example, may assess states rather than traits, reduce recall bias, and link fluctuations to the manifold situational factors and circumstances outlined in this chapter (Whitlock & Masur, 2019). Future research should also consider the bi-directional relationships between SITB and social media engagement (Lavis & Winter, 2020). To date, most work has focused on the impact of social media use on SITB risk; however, it is equally important to understand how individual histories of SITB and risk influence social media use.

Privacy and Ethics

Such methodological approaches pose significant ethical challenges and will require care in balancing potential ethical challenges inherent in such methods with the benefits they provide. One of the biggest challenges for platform designers, researchers, and policy-makers is navigating user privacy and ethics while also safeguarding against potential harms of free expression – both in

terms of platform affordances and the research needed to better understand the complex interactions between social media use, SITB risk, and individual-level factors such as developmental stage and other risk and protective factors (Whitlock & Masur, 2019). There is also a need to establish universal protocols for how risk detection and accuracy is measured and applied across platforms (Westers et al., 2020). This will likely require continuous monitoring and updating of algorithms as the data available expands and brings with it questions about privacy and opting-in to such monitoring.

Conclusion

Evidence that young people go online, exchange support, and share relatively openly about their experiences is promising in that it presents grounds to understand young people's experiences, detect needs, and design and deliver scalable preventative interventions. However, there are also risks associated with the social media environment such as exposure to, and the quick spread of, potentially harmful content. To better understand how we can best amplify the beneficial potential of social media, while minimizing the negative consequences, further research focused on disentangling factors that contribute most to the SITB–social media relationship is needed.

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