4-28-2022

Problematic Social Media Use in the Context of Romantic Relationships: Relation to Attachment, Emotion Regulation, and Motivations for Use

Eleni Gogos
eng8002@rit.edu

Department of Psychology, College of Liberal Arts

Rochester Institute of Technology

Problematic Social Media Use in the Context of Romantic Relationships: Relation to Attachment, Emotion Regulation, and Motivations for Use

by

Eleni Gogos

A Thesis in

Experimental Psychology

Submitted in Partial Fulfillment of the Requirements for the Degree of

Master of Science in Experimental Psychology

April 28, 2022

We approve the Thesis of Eleni Gogos:

Name Date

Kirsten Condry, Ph.D.

Faculty Adviser and Chair of the Thesis Committee

Name Date

Joseph Baschnagel, Ph.D.

Department Chair, Committee Member

Name Date

Lindsay Schenkel, Ph.D.

Committee Member

Name Date

Stephanie Godleski, Ph.D.

Committee Member

Acknowledgments

First and foremost, I would like to extend my utmost appreciation to my advisor, Dr. Kirsten Condry, who provided invaluable guidance and expertise throughout the development of my thesis project. Her support, validation, and unwavering belief in my work has been fundamental in both my academic and personal growth. I would also like to thank the members of my thesis committee, Dr. Joseph Baschnagel, Dr. Lindsay Schenkel and Dr. Stephanie Godleski, for their time and invaluable feedback. I would like to extend a special thank you to Dr. Baschnagel, for being a mentor to me throughout my time at RIT, and for his encouragement and support of this project, as well as my other academic and research endeavors. The completion of my thesis would also not be possible without the support of my parents, as well as love and encouragement from my family in Greece. Finally, I would like to thank my closest friends for their endless encouragement, listening and unparalleled support as I worked towards completion.

Abstract

Social media is an increasingly popular form of connecting with others, especially among young adults, but problematic social media use (PSMU) has become a growing concern. Research has shown that people with anxious attachment styles and poor emotion regulation have a greater likelihood of having PSMU (Liu & Ma, 2019), but how social media usage might play a role in these relationships has not been well-studied. This research asked if the association between anxious attachment and PSMU will be affected by both emotion regulation and online social surveillance in romantic relationships as mediating influences. We utilized advanced mobile phone features to gather screen time data to measure as a covariate. Young adult participants who were in a romantic relationship and were users of social media (N=158) completed online questionnaires regarding relationship behavior (attachment style, online social surveillance), emotion regulation, and social media use. A subset of the sample also provided detailed screen time data (n=76). Results demonstrated that both emotion regulation difficulties and social surveillance were significantly, positively associated with PSMU, and also were significantly, positively associated with anxious attachment. In contrast to previous work, however, anxious attachment was not directly associated with PSMU. Screen time measures revealed that Facebook has been replaced by newer platforms like Snapchat, Instagram, and TikTok in young adults' media preferences. Future research should examine the differences among social platforms and their uses.

Keywords: social media, attachment, emotion regulation, social surveillance, screen time

Table of Contents

List of Figures

List of Tables

Problematic Social Media Use in the Context of Romantic Relationships: Relation to Attachment, Emotion Regulation, and Motivations for Use

Social media is now ubiquitous and has grown exponentially over a short period of time. In doing so, it has presented new kinds of psychological issues around a user's involvement with social media. How social media allows people to present themselves and react to other's information online is a new kind of experience and media interaction (e.g., Valkenburg et al., 2016). The use of social media or social networking sites (SNS) is especially pertinent among young adults and college students. According to the Pew Research Center, 72% of adults in the United States use at least one form of social media, and 90% of people between the ages of 18-29 use social media. Sixty-nine percent of adults in the U.S. use Facebook (Auxier & Anderson, 2022). The use of social media has become an alternative way to connect with people, such as keeping in contact with friends and family, job networking, or for dating and romance. Although using social media and SNS can have benefits such as connecting with peers and decreasing loneliness (e.g., Orben, 2020), it can also have negative consequences that could ultimately manifest as a form of addiction or problematic use (e.g., Marino et al., 2019). Many terms are used to describe PSMU, such as social network disorder, social media addiction, and compulsive social media use. For the purposes of the current study, the term PSMU is employed to indicate use of social media that is congruent with addictive tendencies and negative outcomes (e.g., Griffiths, 2005).

The best-studied negative outcome of PSMU is that people who use social media excessively can experience increased anxiety and depression. In a systematic review on the influence of social media and mental health in adolescents, Keles et al. (2019) found that the most prominent risk factors for anxiety, depression, and general psychological distress came

from each of these categories: time spent on social media, activity on social media, investment, and addiction. Their findings suggest a general correlation between amount of social media use and mental health problems. The large correlation with anxiety, depression, and general psychological distress suggests some possible links: some people use social media in a way that enables distress or unhappiness, or that perhaps people who are unhappy are more drawn to spending time on social media. There are likely individual factors that make excessive social media use *and* mental health problems more likely (Keles et al., 2019).

Current theories of media effects focus on motivations that people have for selecting and interacting with particular media. For social media, which is considered to gratify the need for social connectedness, some of these motivations will involve maintaining relationships. In the present study, we consider how people use social media when they are in a romantic relationship. When looking at patterns in a user's social media behavior, it is important to consider the motivations for using social media, and to understand the psychological mediators that may influence problematic use. Two pertinent constructs to study are user's attachment style, to better understand the dynamic of how they engage with their partner in their current romantic relationship, and emotion regulation, to see how successful they are at regulating their emotions should any distress arise.

The theory of attachment is that experience in early relationships shape many aspects of who we are as individuals and how we engage in our interpersonal relationships later in life (Bowlby, 1980). The relationships that are formed in early childhood play an important role in the way we learn to regulate emotions and feelings (Bowlby, 1997; Bowlby, 1980). As a result, the attachment style we develop and what we learn in attachment relationships as children shapes our relationships in adulthood and our affectional abilities. Attachment theory suggests that we

ultimately learn what to expect of others and expect to be treated a certain way based on how we were treated in childhood. These expectations are what can make later relationships in adulthood feel or appear similar to our childhood relationships. Our attachments also inform our emotion regulation abilities and how we experience and express emotions and feelings in times of distress (Kim & Cicchetti, 2010; Shields & Cicchetti, 2001). Emotion regulation could inform the way that people choose to use social media and there could be potential for developing PSMU. Research will be reviewed that explains how attachment styles and regulation of emotion are related.

This study aims to comprehensively examine whether there are differences in maladaptive social media use for people who are in romantic relationships based on attachment style, and to determine if emotion regulation difficulties and social surveillance of a partner on social media will act as a mediator in any association. Additionally, this research will also examine specific motivations and behaviors behind using social media (social surveillance and behavioral screen time) for individuals that exhibit different attachment styles, with a specific focus on anxious attachments. The following review first examines features of social media use and theories about new media use, including interactive social media. Research on attachment style and social media use is discussed, including the finding that an anxious attachment is associated with negative relationship behaviors such as partner surveillance. Additionally, attachment and emotion regulation are examined, considering how both constructs may be related to PSMU. The purpose of the present research is to ask whether having an anxious attachment style and particular motivations and behaviors are linked to developing PSMU among social media users who are in romantic relationships.

Social Media

Social media is defined as internet-based applications or digital technologies that emphasize user-generated content or interactions (Kaplan & Hanenlein, 2010). It is used to facilitate communication and networking online, as well as allows users to produce, share, and exchange content. Some commonly used platforms of social media are Facebook, Twitter, Instagram, Snapchat, LinkedIn, YouTube, Reddit, and TikTok. Social media can be accessed through a variety of technologies but is most easily accessible from apps on smartphones.

For many young adults, social media has become a seamless and indispensable part of everyday life. For example, the majority of young adult users of Instagram and Snapchat say that they use the apps every day (73% and 71%, respectively) and roughly half (53%) reported using the platforms several times a day (Auxier & Anderson, 2022). As far as asserting control over one's social media use and being able to give it up, 51% of young adults 18–24 indicated that it would be difficult to give up using social media (Perrin, 2020).

Not only is social media an easy and accessible form of connecting with family, friends, and colleagues, but it has many others uses. It is frequently used for romance and flirting, interacting with brands and companies, job seeking or professional networking, as well as for business purposes (Aichner et al., 2020). While Facebook is the most widely used social media platform worldwide, young adult users often report using Instagram (76%), and Snapchat (75%) the most, with TikTok (55%) following closely behind, preferring them substantially more than other social media platforms (Auxier & Anderson, 2022). These differences in young adult social media use suggest a need for research expansion to consider the new platforms this age group are now using, including how they use social media and why they use it.

Popular Social Media Platforms

The evolving popularity of social media platforms means that research should explore relative platform use and preference, specifically pertaining to young adults. Facebook remains one of the most widely used social media platforms in the United States, with 69% of all adults using the platform (Auxier & Anderson, 2022). Facebook has been the most dominant online platform for a long time, and early social media research focused extensively on Facebook (e.g., Oldmeadow et al., 2013). It has approximately 2.85 billion active users each month, and it extends that dominance with related platforms, where 3.45 billion people use one of the core products of Facebook's company each month, including Instagram, Messenger, and WhatsApp (Statista, 2021e).

Facebook developed one formula for social media interaction that allows users to create a personal profile where they interact with others online, "adding friends," responding to other's posts, posting photos, status updates, and other content, as well as private messaging with other people using the platform. However, as new media evolves, new platforms have retained some of these core features while developing new ones.

Instagram is similar to Facebook and has become increasingly popular, with over one billion monthly active users and is focused on sharing images (Statista, 2021a). It is a mobile-based application where users can take photos, apply different filters, or change the appearance of their photos, and then share them via a public profile or a private profile, sharing the content with family and friends, all in an instant. Most Instagram users are female (approximately 510 million) and 67% of young adults in the U.S. use Instagram regularly (Aslam, 2021). One of Instagram's major features is 'Stories," a feature of the app that allows users to post a photo or brief video that will disappear 24 hours after being posted. A new feature has also recently been

implemented that very similar to TikTok, where video-focused media are suggested, and users can endlessly scroll through video recommendations known as “reels.”

Snapchat is a mobile-based application of social media that provides a time-limited “snapshot” of the user (similar to Instagram stories) because the posted image or video disappears after viewing. Bayer et al. (2016) examined Snapchat in the context of social relationships and found that users chose to use Snapchat for making a “quick connection” and exchange of personal content in a quick manner throughout the course of the user’s day. The application is quite different from other forms of social media as it captures the “here and now” in an immediate environment, and users get a glimpse of a current moment in their friends’ day-to-day life just for the moment.

TikTok is a newer social media app that primarily video and text-based but focuses on video creation and sharing. TikTok has become one of the fastest-growing apps worldwide after its international launch in 2016 (Statista, 2021d). The video clips are short and can be altered with effects, text, filters, trending music and sounds. This platform targets a younger demographic, with half of users younger than age 29 years, and nearly a quarter between the ages of 10-19 years (Statista, 2021d).

In addition to platforms that emphasize social connectedness, images, and videos, there are new platforms focused more directly on communication. Twitter is a social networking platform that had 330 million monthly active users in 2019 (Statista, 2021b). Users of Twitter can both read and post short messages that are limited to 280 characters, and “follow” users whose posts they choose to read. Twitter users can grow their audience by communicating directly with other users and responding to their posts, otherwise known as “tweets.” Twitter

differs from many of the social media platforms in being more text and communication based than image or video based.

In addition to new platforms being developed, existing platforms continuously develop new features, often overlapping popular uses of other platforms. Twitter users can send private messages to others, post photos, "retweet" (or share) other people's posts, and as of recently, Twitter has implemented novel features that exist on other platforms like Reddit, such as a "voting" arrow to react to people's tweets. Facebook now also provides a disappearing "story" feature that is similar to Instagram, also similar to the feature of disappearing content that Snapchat uses, but in a different manner. The changing landscape of social media requires updated research to better understand how the features and possibilities of new platforms affect users, and how young adults are spending time on these platforms.

Problematic Social Media Use

The ubiquitous use of social media has led to complex issues and has raised questions about the well-being of the user. There is a growing body of research recognizing the importance of examining social media use and the negative effects it may have on user health (e.g., Hoffner & Lee, 2015; Keles et al., 2019; Odacı & Çıkrıkçı, 2014). Social media has become multipurpose and may encourage certain behaviors that ultimately negatively impact the user. An example of this is when users feel bad for using social media so much, but also feel unsuccessful in attempts to quit or control their social media use (Andreassen et al., 2012).

Problematic social media use (PSMU) is a phenomenon that can be conceptualized in many ways, but the common core is that there is a negative outcome for the user. In recent research, PSMU is commonly conceptualized as a type of addiction, like other chemical and behavioral addictions (Griffiths et al., 2014). The focus is on how the use of social media has a

negative impact on the user's wellbeing, relationships, or motivation. Griffiths (2005) describes a biopsychosocial model in which individuals with extreme PSMU can show symptoms of addiction such as withdrawal (i.e., experiencing unpleasant emotional or physical symptoms when social media use is stopped or restricted), tolerance (i.e., increasing social media use over time), relapse (i.e., quickly returning to excessive use after a period of abstinence), and conflict or negative repercussions from use (i.e., interpersonal problems as a result of social media use). Some examples of PSMU include spending a lot of time thinking about social media, using social media to lift or enhance one's mood, having negative outcomes or experiences when unable to use or access social media, and experiencing problems in other facets of life like work or relationships due to social media use (Andreassen et al., 2012; Kuss & Griffiths, 2017).

Negative outcomes of social media use can have detrimental effects on many aspects of the user's life and health. Coyne and colleagues (2020) examined time spent on social media and its association with mental health and wellness during an 8-year longitudinal study. The study followed participants during early adolescence through emerging adulthood and found that at both the cross-sectional and longitudinal level, time spent using social networking sites was positively, moderately correlated with anxiety and depression. Many other studies have also found social media use to predict mental health issues such as depression and anxiety (Lin et al., 2016; Griffiths et al., 2014; Vannucci et al., 2017). Specific to anxiety, Vannucci et al. (2017) investigated whether social media use and time spent on social media have implications on symptoms of anxiety and severity in young adults in the U.S. A hierarchical regression demonstrated that more time spent using social media was significantly, positively associated with greater symptoms of dispositional anxiety. The study also revealed that participants demonstrated a probable anxiety disorder if they scored above the clinical anxiety severity cut-

off in addition to more frequent daily social media use (Vannucci et al., 2017). Overall, the research in this area suggests that increased anxiety is correlated with increased time on social media and may point to a vulnerability in terms of either motivations or uses.

One issue that has challenged studies of social media platforms is measuring how much time participants are actually spending on social media. Barthorpe et al. (2020) examined the potential impact of social media use on the mental health of young people using time use diaries (TUD), a reportedly less biased measure of social media use than general recall questions. The large cross-sectional sample of young adolescents indicated that more time spent on social media was associated with an increased risk of negative outcomes like self-harm, depression, and lower levels of self-esteem, though only for girls. Furthermore, these findings were similar for both weekday and weekend use of social media. Jones-Jang et al. (2020) identify several reasons to be concerned about self-report data, particularly on social media screen time. Self-report may not be as reliable as "logged use" (or using screen time diagnostics, as in the present study). One possible reason is that people are trying to recall a task that they do habitually, on a device that they also use for other purposes. Social desirability might cause people to underreport screen time, especially if they perceive themselves as using social media too much. Jones-Jang et al. (2020) directly compared self-report and logged measures of general mobile phone use and found that in general, people underreport their time on mobile phones when they self-report, and people with PSMU were more likely than others to underreport their screen time.

Because of concerns about the reliability of self-report measures of screen time, and with changing platforms and uses available, research on social media that incorporates accurate screen time measures is necessary. Each recent generation could be involved with social media at an

earlier age, with research showing an inverse relationship between age and Facebook activity intensity across ages 16 to 56 years (Ozimek & Bierhoff, 2016).

Orben (2020) conducted a review of studies, finding that aside from the negative consequences of social media use, there may also be positive benefits, such as increases in social support, social communication, as well as social connectedness which decreases loneliness. Jones-Jang et al. (2020) found that correlations among positive outcomes such as bonding (i.e., strengthening social ties) were slightly stronger when measured with logged used of mobile phones compared to when using self-reported time. However, conflicting results may have occurred because different outcomes were studied. To come to a more accurate conclusion, Orben (2020) suggests examining the emotional and social outcomes of social media use. Although there may be positive benefits, especially for people who use social media in a healthy way or in moderation, there is evidence to suggest that the risks outweigh the benefits when social media is used in a problematic sense.

Motivations for Social Media Use

Despite the growing body of research on social media use (Chou et al., 2009; Kaplan & Haenlein, 2010; Kransnova et al., 2017), there remains a lack of research investigating the motivations behind social media use and how these motivations vary by personal factors, like regulation of emotion and attachment style. People use social media for a variety of reasons, but a well-established theoretical approach suggests that the ultimate motivation for social media use and engagement is driven by the uses and gratifications (U&G) theory (Katz et al., 1973; Katz et al., 1974). McQuail (1972) classified gratifications for media users based on four basic needs: diversion, personal relationships, personal identity, and surveillance. Following this work, Katz and colleagues (1973;1974) developed the U&G theory to examine user motivations and the

kinds of needs that were gratified by using a specific type of media. They concluded that media use must be considered as goal-directed, used to satisfy individual needs and desires, that social and psychological factors influence media use, and lastly, that media use and interpersonal communication are related. The U&G theoretical approach identifies the importance of understanding motivations (what people want and what they get) to better understand why individuals use social media. This theory suggests that users are active in choosing to engage in certain types of media to fulfill their certain needs or desires (Katz et al., 1973).

Social media, especially as quickly as it is advancing, allows for a very refined and customized experience, depending on the needs of each individual user, which offers more control over their social media usage and exposure (Dhir & Tsai, 2017). Research suggests that the average individual is typically goal-driven, meaning that they use social media in attempts to satisfy their need for social interaction, entertainment, as well as using it as a form of escape (Papacharissi & Mendelson, 2011). In terms of social media, two major gratifications that users gain from platforms like Facebook are obtaining social information and maintaining relationships (Brandtzaeg, 2012; Cheung et al., 2011). Wang and colleagues (2012) also suggest that the need for social connectivity and interaction may be the largest domain compelling people to social media. These kinds of motivations may be particularly pertinent when understanding the motivations of social media users who are in romantic relationships, because maintaining a romantic involvement might be a very important goal.

As with media like radio and television, social media is also used for entertainment and distraction. In a study by Coyne et al. (2013) on the uses, effects, and gratifications of media during emerging adulthood, their results indicated that the main motivations for individuals engaging in social media generally involved escapism and diversion from everyday life. This

area might also relate to problematic use in that heavy or extensive use of social media might be associated with a user's emotional need to escape real life. Turning to social media as a form of escapism may be a form of emotion regulation, as the authors suggest (Coyne et al., 2013), and if used more extremely, might be indicative of poor emotion regulation.

While the U&G theory considered the motivation and personal factors of the media user, newer theories of media have emerged emphasizing the interactive nature of media today. The old media influence theories were unidirectional, meaning they measured only how viewers could be affected by the media, often as if every viewer would be affected the same way (e.g., McQuail, 2010). However, new theories have expanded to thinking of media influences as a more bidirectional concept, with users not only selecting from a huge range of possible media, but also creating, responding to, and interacting with the media. On these newer approaches, anyone can be a sender, and anyone can be a receiver of media, which makes media use more complex (e.g., Valkenburg et al., 2016). Importantly, the emphasis here is that this type of new interaction with media is self-generated, self-directed, and self-focused (Valkenburg et al., 2016). Consider an example of individuals with poor emotion regulation, who are also users of social media. If the users engage in increasing amounts of social media trying to escape from reality, the increased use might lead them to come across things that are upsetting or uncomfortable. Now, because of their poor emotion regulation, these users will be overly upset, or have to seek other ways to manage the distressing emotions. Similarly, the link between increased anxiety and increased PSMU might indicate that some individual factors (e.g., anxiety, emotion regulation difficulties) may cause people to use social media in maladaptive ways, while people without those influences can use social media without experiencing such negative outcomes. This relates to the hypotheses put forth in the current study where specific individual factors such as insecure

attachment style and emotion regulation difficulties will cause people to use social media in maladaptive ways, leading to increased PSMU, or feelings of addiction to social media.

Overall, motivations for using social media may widely vary, but the consensus in the existing literature demonstrates that users choose to engage with a specific type of media to fulfill their needs, whether it be for entertainment, social interaction, surveillance, or escapism, among many other motivations. The important aspect of this is distinguishing between a motivation that is relatively normal or a motivation that can become problematic, influencing our behavior and outcomes. The concern for the present research is how people in romantic relationships use social media and whether personal factors (e.g., relationship anxiety and emotion regulation), as well as motivations, influence whether people report negative outcomes like PSMU.

Social Surveillance

When examining social media use in the context of romantic relationships, the motivated behavior of surveillance on social media may be of particular interest. Social media allows users many ways of 'staying connected.' Users who follow or 'friend' each other can then see what the other person posts, views, responds to, and interacts with. These behaviors might be particularly relevant to people who are in a romantic relationship, as it allows them access to their partner's social interactions online, but are there specific online social behaviors that may likely be associated with negative outcomes? Social surveillance refers to the behavior of tracking and paying special attention to the personal preferences and interactions of others online (e.g., Marshall, 2012). In romantic relationships, the accessing and exchanging of information usually happens through communicating directly with one another, as this is often the most effective and straightforward way to do so. However, it can also be common for partners to exhibit other

information-seeking behaviors to learn things about their partner by monitoring their behaviors and interactions. Social media allows for a novel and quick way of doing surveillance in relationships, often with just the click of a button users can obtain information about a partner's interests or communications, making it easy to fall into unhealthy patterns (Fox & Warber, 2014; Marshall, 2012; Tokunaga, 2011). Going back to U&G theory (Katz et al., 1973; 1974), individuals seek out gratification for their needs to be met. For romantically involved individuals, it is possible that social media provides a relatively new gratification allowing new forms of social surveillance, but could this become problematic, especially for people who feel distrusting or needy in their relationships? Social surveillance could also be linked to aspects of PSMU, with the surreptitious gathering of information about a partner becoming compulsive or negatively impacting the relationship. The notion is not that all people who engage in surveillance-like behavior on social media will develop a dependence or addiction with social media, but rather that people who are struggling with their relationships and attachment security already may be more susceptible to using social media in a maladaptive way and developing PSMU. Based on previous research, social surveillance of one's partner on social media use is a proposed mediator in the current study predicting PSMU among social media users in romantic relationships.

Attachment

A personal factor that can greatly affect the way that we use social media and why we use it is our attachment style. Attachment is a developmental process that plays an important role in our developing relationships and emotion regulation, and it is a process that can be affected by maltreatment or neglect experienced in child-caregiver relationships (e.g., Bowlby, 1977). According to Bowlby's *Attachment Theory*, the security of attachment significantly depends on

the primary caregiver's responsiveness and attentiveness to the needs of the child and begins during infancy, shortly after birth (Bowlby, 1977). Early childhood deprivation of safe and secure social ties can influence a person's functioning in adulthood, particularly in making them vulnerable to poor quality relationships and feelings of insecurity (Bartholomew, 1991; 1993; Bowlby 1982). Individual differences in the way children become emotionally attached to their caregivers can also affect the child's ability to regulate their emotions and may distort their own perception of themselves and others, also hindering their social competence (Thompson, 1991). Bowlby argues that an individual's attachment relationship affects their capacity to create and manage affectional bonds later in life. This conflict of unstable affectional bonds has been shown to correlate with later marital problems, parenting troubles, the development of neuroticism, and even personality disorders (e.g., Bartholomew, 1991; Bowlby, 1977).

Individual differences in attachment styles are typically demonstrated across two main dimensions: insecure attachment and secure attachment. Secure attachment identifies a healthy, successful relationship where the child feels trust in being cared for, and security in their relationship to the caregiver. This internal working model is a template for future relationships. Adults who show a securely attached style are generally trusting of their partners and more likely to have healthy, balanced romantic relationships (e.g., Hazan & Shaver, 1987). The two subdomains of insecure attachments are attachment anxiety and attachment avoidance. Individuals with high attachment anxiety typically worry about trusting in their relationships with their primary caregiver, as well as fearing they are not valued by their caregiver. In adulthood, this could develop into feelings of insecurity and worry in romantic relationships, and lead to behaviors such as jealousy and difficulty with separation (Hazan & Shaver, 1987). This

indicates that behaviors like social surveillance may be a potential problem not just for people in romantic relationships, but specifically for people with an anxious attachment style.

One way of measuring attachment style is to ask questions about anxiety and avoidance, and those who score low on both dimensions of insecure attachment are considered to have a secure attachment style (Brenning & Braet, 2012). But an issue that challenges many studies of adult attachment style is whether they include only participants who are reporting their actual behavior and emotions being experienced in a current romantic relationship, or also include those who are reporting their general tendencies, but not necessarily responding about a current romantic partner (e.g., Liu & Ma, 2019). It is important to consider that a more reliable measure of attachment security would involve people who are currently in romantic relationships, as there may be differences in these factors based upon actual relationship status. The link to the present study is the question of whether attachment styles and behaviors may predict very specific way of using social media that may indicate difficulties with social media use and the specific social surveillance, and the related personal factor or emotion regulation.

Emotion Regulation

While attachment is considered to have a primary influence on the development of healthy relationships, it can also influence an individual's emotion regulation. Research demonstrates that adverse experiences during childhood are associated with increased emotional reactivity and may hinder the development of adequate emotion regulation skills, promoting emotion dysregulation in response to distress, and later maladjustment (Kim & Cicchetti, 2010; Shields & Cicchetti, 2001).

Emotions are ever-changing, multifaceted, and can significantly affect our psychological health and wellbeing. They comprise our behavioral, experiential, and physiological response

tendencies that influence our reactions in times of distress (e.g., Gross, 1998). Emotion regulation is the ability to adjust emotions and reactions in response to stressful stimuli or an emotionally aversive experience. Additionally, it includes the maintenance of emotional arousal, as well as the acceptance of emotions, awareness and understanding of one's emotions in the ability to act a certain way regardless of the current state. It requires the maintenance of the frequency, duration, and intensity of the emotional experience (Gratz & Roemer, 2004; Gross, 1998).

Studies of maladaptive emotion regulation strategies typically focus on negative emotions such as rumination (repetitively focusing on negative emotions and experiences), suppression (holding in, or suppressing negative emotions or any emotional expression), as well as avoidance (avoiding any thought, feeling, emotion, sensation, or memory that is related to an emotion or a negative event; Gärtner et al., 2019). Gratz and Roemer (2004) propose six emotion regulation difficulties that contribute to maladaptive regulation of emotion, which are reflected in their measure, the Difficulties in Emotion Regulation Scale: (1) nonacceptance of emotional responses, (2) difficulties engaging in goal-directed behavior, (3) impulse control difficulties, (4) lack of emotional awareness, (5) limited access to emotion regulation strategies, and (6) lack of emotional clarity (Gratz & Roemer, 2004). Ultimately, regulation of emotion can be measured by examining an individual's response to an emotionally aversive event or experience (Gross, 1998; 2002). In the present study, the idea is that if adults have developed an insecure attachment style, they may also be vulnerable to having poor emotion regulation (e.g., Kim & & Cicchetti, 2010). Because emotion regulation plays an essential role in the way that we behave and react to stress and could be a factor in both using social media and maintaining romantic relationships, it is

included as a factor in the current study and operationalized in terms of how people report their responses to stressful or emotional experiences (e.g., Gratz & Roemer, 2004).

Attachment and Emotion Regulation

Attachment theory provides a framework for examining how adverse early experience might influence how well individuals are able to regulate their emotions in adulthood. An individual's emotion regulation capability is often negatively affected when their early life experiences occur in stressful or demanding environments (Loman & Gunnar, 2010). Attachment theory suggests that children with a secure attachment can effectively regulate their emotions by use of their parents. A secure attachment gives the child the tools to learn to regulate their emotions in a more healthy and grounded manner, typically modeled by the parent and their relationship with the child. Children living in abusive environments and those that experience caregiver neglect often keep their feelings to themselves, promoting an insecure attachment (e.g., Bowlby, 1982). This in turn limits the child from efficiently learning how to adapt to aversive situations and feelings, promoting maladaptive emotion regulation with insecure attachments. Previous research has also shown that there is a strong positive association between insecure attachments and psychological distress (Hankin, 2005), often involving poor emotion regulation. We see the opposite effect with secure attachments. Murphy and colleagues (2015) examined parental attachment security in an adolescent sample and found that higher levels of attachment security were associated with greater emotion regulation capability and lower levels of negative emotionality. What is important to consider is that some people with insecure attachments (i.e., anxious or avoidant) might not have difficulty with emotion regulation, but rather that those with insecure attachments are highly likely to have greater difficulty with emotion regulation. This

demonstrates why emotion regulation issues are important to measure in the context of the current study while examining attachment style in romantic relationships.

This research suggesting a link between emotion regulation and attachment has also occasionally revealed gender differences. However, some of the findings on attachment styles relative to gender differences have been inconclusive or yielded mixed results (e.g., Adamczyk & Pilarska, 2012; Kirkpatrick & Davis, 1994; Odacı & Çıkrıkçı, 2014). Similarly, while some research has explored differences in emotion regulation by gender, the results have not been consistent (e.g., Zhao et al., 2014; Zimmermann & Iwanski, 2014). Due to the complexity of these intersections, we tested for gender differences in these constructs in the preliminary analyses.

Emotion Regulation and Social Media

Difficulties in emotion regulation have been shown to be potential risk factors for addiction due to aspects of maladaptive regulation of emotion, such as lack of awareness and increased impulsivity (Aldao et al., 2010; Berking et al., 2011; Schreiber et al., 2012). This does not come as a surprise, as some studies have shown that individuals with difficulty regulating emotion often engage in addictive behaviors in order to avoid negative feelings or to try to regulate in a maladaptive way (Aldao et al., 2010). Estévez et al. (2017) demonstrated that emotion regulation was positively correlated with addictive behaviors (such as drug abuse) in addition to internet addiction. Based on previous research, it is evident that poor emotion regulation is associated with poor impulse control, which is also a prominent factor in addiction (Schreiber et al., 2012).

Problematic Facebook use, which can be considered a type of PSMU, has also been shown to relate to emotion regulation dysfunction (Marino et al., 2019). Hormes et al. (2014)

examined social media use and online networking to investigate the potential for dependence. Standardized measures for substance abuse and dependence were used to determine disordered social media use (i.e., PSMU). Their results indicated that PSMU was associated with greater difficulties in emotion regulation and lack of acceptance of emotional responses. They suggest that poor emotion regulation skills are a part of symptoms that lead to disordered online social network use.

Research has also demonstrated that people sometimes use media platforms to regulate their mood and emotions (Knobloch-Westerwick, 2006). Consistent with previous research (Hoffner & Lee, 2015; Rozgonjuk & Elhai, 2019; Yildiz, 2017), Horwood and Anglim (2021) found a strong, positive relationship between poor emotion regulation and social media. Specific aspects of emotion regulation that can be measured via subscales also yielded interesting results in their study. Two specific subscales of measuring difficulties in emotion regulation, impulse control and having limited access to emotion regulation, exhibited the strongest correlations with problematic smartphone use in their study. Both lack of impulse control and having limited access to strategies are closely related to components of addiction, indicating that features of poor emotion regulation are similar to addictive tendencies, and may be relevant to understanding PSMU.

Social Media and Attachment

The big question of this research is whether experiencing problems with social media use might reflect the emotion regulation difficulties and anxious attachment styles of users who are in romantic relationships. As expressed by the U&G theory, people often use media sources to fulfill certain psychological needs or desires that they may have (Katz et al., 1973). Individuals with an anxious attachment style may aim to fulfill these specific psychological needs or desires

by using social media in particular ways, particularly in the context of their romantic relationships.

In general, anxious attachment styles have been associated with more frequent Facebook use as a way of seeking comfort through the platform, primarily when experiencing negative emotions (Oldmeadow et al., 2013). Individuals with an anxious attachment demonstrated worry about how they would be socially evaluated by others on Facebook (Oldmeadow et al., 2013). This preoccupation with relationships found in anxious attachments is a significant risk factor for problematic internet use (Schimmenti et al., 2017). Similarly, in accordance with attachment theory, Worsley et al. (2018) found that there was a positive association between anxious attachment and PSMU. People with anxious attachment style exhibited a need for social connections, but the ability to create them in the real word was seemingly difficult for those with this kind of attachment. Therefore, an online presence and connection satisfied their need for social validation and belonging, where they can facilitate their own control over their digital identity or presentation (Worsley et al., 2018). Both with social media and face-to-face connections, people with anxious attachments often engage in behaviors that lead them to disclose intimacy early on in their relationships or disclose personal information about themselves early on when forming connections or relationships (Park et al., 2004; Srivastava & Beer, 2005), showing that attachment anxiety can influence specific relationship behaviors. Studying the application of attachment theory to web-based social network communications, Yaakobi and Goldenberg (2014) found support for their hypotheses that attachment anxiety scores positively predicted time spent on social media on the maintenance of relationships. This demonstrates that someone with an anxious attachment may spend more time on social media in

efforts to maintain relationships and may also make it more likely that social surveillance could be happening.

In contrast to the behavior of people who have anxious attachment styles, individuals with an avoidant attachment tend to suppress their feelings and have a desire for self-reliance and exhibit social withdrawal tendencies. This preference to avoid others face-to-face interactions can lead to them avoiding social media as well (Worsley et al., 2018).

One difficulty of interpreting the effects of personal factors on social media use (and misuse) is that many of the factors reviewed here are interrelated. The interconnectedness of these factors is highlighted in recent results by Liu and Ma (2019), who wanted to explore if emotion regulation difficulty mediates the relationship between an insecure attachment and social media addiction (PSMU) in a college student sample based in China. Their results indicated that attachment anxiety positively predicted PSMU and that emotion regulation partially mediated this effect with greater difficulty associated with higher PSMU.

Thus, while there is ample research investigating attachment styles and how they influence social media use, not many studies have examined emotion regulation in relation to attachment and social media use, and PSMU in particular. Additionally, motivations for social media use have also mostly been examined in different academic avenues such as human-computer interaction (HCI) or communications, but not specifically from a psychological perspective (Fox & Warber, 2014). To our knowledge, Liu and Ma (2019) is currently the only study that has so far attempted to measure these factors together, including considering emotion regulation difficulty as a mediating variable in the relationship between attachment and PSMU.

Current Study

Effects of attachment styles are complex and warrant further examination for how they may lead to PSMU in early adulthood among people who are currently in romantic relationships. The proposal motivating this research is that recognizing deficits in emotion regulation, and specific online behaviors, may be essential for understanding the way people with different attachment styles utilize social media, and whether they have negative outcomes like PSMU. In the current study, attachment theory, online behaviors, and emotion regulation processes (Gross, 2002; 2003) are examined to conceptualize how attachment styles expressed in current relationships may be related to young adult emotion regulation abilities and risk for PSMU. Few studies have brought together these related factors and focused on social media users who are actually in relationships. In addition, most previous studies have examined Facebook as the platform for problematic social media use and have not been inclusive of other social media platforms, which the current study will address.

The current study will expand upon the previous work in efforts to extend findings that anxious attachments will promote greater emotion dysregulation, leading to greater dependent social media use (Liu & Ma, 2019). I predict that emotion regulation may fully mediate or at least partially mediate the relationship between an anxious attachment style and problematic social media use. The current study offers unique contributions by adding new measures of social media usage and exploring additional constructs that may help inform social media dependence such as motivations for social media use, specifically social surveillance of a romantic partner. This study will also extend the work of Liu and Ma (2019) to a Western, sample of young adults residing in the United States - as both social media usage, exposure, and motivations may vary compared to other nations in which previous studies have been conducted.

Hypotheses

Research Question 1 (RQ1): How are attachment anxiety and problematic social media use associated?

Hypothesis 1 (H1): Anxious attachment will be significantly, positively associated with increased problematic social media use.

Research Question 2 (RQ2): How does emotion regulation difficulty influence the relationship between attachment anxiety and problematic social media use?

Hypothesis 2 (H2): Emotion regulation difficulty will be a mediating variable in the association between anxious attachment and problematic social media use.

Research Question 3 (RQ3): How does social surveillance influence the relationship between attachment anxiety and problematic social media use?

Hypothesis 3 (H3): Social surveillance will be a mediating variable in the association between anxious attachment and problematic social media use.

Research Question 4 (RQ4): How does screen time influence problematic social media use?

Hypothesis 4 (H4): Screen time with be significantly, positively associated with problematic social media use.

Methods

Participants

Data from a total of 234 young adult participants were collected through two different recruitment methods, but only a subset of these data were analyzed for the present research. Exclusionary criteria for this study consisted of anyone who was not currently in a romantic relationship, who did not actively use social media, who did not meet the age requirements, or who did not reside in the United States or U.S. territories.

A community sample of 51 young adults participated in the research, but their data were not analyzed. This sample was recruited from the general community through social media via link distribution and QR codes posted on various social media platforms (Twitter, Instagram, and Facebook). Using this method of recruitment, community participants were entered into a gift card raffle in thanks for their participation. In this community sample, age ranged from 20 to 30 years (M = 25.31, SD = 2.69), the majority identified as cisgender female (72.5%), followed by cisgender male (19.6%) and non-binary/other (7.8%). Thirty-one participants reported being in a romantic relationship (66.7%) and 17 participants reported being married (33.3%). Data from this community sample, however, were not included in the analyses. The main argument for not including these data is that they yielded the essential part 2 screen time data from very few participants (n = 14), and many entries were partial or contained errors, so the screen time measure for this sample seemed unreliable. Because this community sample differed from the larger SONA sample in terms of age and relationship experience, it did not seem reasonable to combine them, and there were not enough data to analyze them as a separate group.

For the final sample, a total of 183 young adult participants were recruited from Rochester Institute of Technology (RIT) through the SONA system as partial fulfillment for psychology course credit. Ten participants out of 183 failed attention checks and therefore were excluded from the data, leaving 173 participants. When queried about their self-identified gender, 58 participants identified as cisgender male and 100 participants as cisgender female, 14 participants identified as non-binary, and 1 participant identified as ‘other.’ Because the planned analyses involved gender, and the participants identifying as non-binary and ‘other’ made too small of a group to consider them a separate sample, these 15 non-binary and other gender

participants were not included in the analyses, leaving a final sample of 158 cisgender male and female participants.

In the final sample of 158 participants, all participants were between the ages of 18 and 27 years (M = 19.47, SD = 1.56). Almost all participants reported being in an unmarried romantic relationship (n = 155), while only a few reported being married (n = 3). A subset of these final sample participants who were iPhone users also completed part 2 of the study. A total of 76 participants from part 1 completed the screen time measures of part 2. The demographics of these participants showed that the majority self-identified as cisgender female (63.3%, n = 100) and the remainder of the sample self-identified as cisgender male (36.7%, n = 58). The sample was primarily Caucasian (74%, n = 117), and the remainder of the participants identified as Asian (15.2%, n = 24), Hispanic/Latinx (5.7%, n = 9), Black/African American (3.2%, n = 5), and 'Other' (1.9%, n = 3). Participants who completed the first survey received 1 SONA credit for partial fulfillment of psychology course credit, and if they also completed part 2 of the study, they received 1 additional SONA credit.

Measures

In part 1, participants completed an online survey consisting of a demographic questionnaire, the Bergen Social Media Addiction Scale (BSMAS; Andreassen et al., 2016), the Experiences in Close Relationship Scale – Revised (ECR-R; Fraley et al., 2000), the Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004), and lastly the Interpersonal Electronic Surveillance Scale for Social Network Sites (IESS; Tokunaga, 2011). The survey also contained two attention checks. In part 2, participants completed the Behavioral Screen Time measure which involved uploading screen shots of their logged social media time.

***Attention Checks*.** Two attention checks were implemented throughout the survey to ensure maximum attention and accuracy in question response. At the beginning of the survey, participants were informed of the importance of remaining attentive while taking the survey and to respond as accurately as possible. They were also informed that if their responses indicate inattentiveness that they may be denied SONA credit or gift card raffle entries. Participants that failed attention checks were removed from the data (n =10).

***Demographics*.** Participants answered questions about their age, relationship length, hearing status, gender, racial-ethnic background, as well as questions about their social media use (such as which social media platforms they use, which are their most preferred and least preferred, as well as if they have ever tried to quit using social media). Participants had to report that they actively use social media to continue the study.

Social Media Use. The Bergen Social Media Addiction Scale was used to measure problematic social media use (BSMAS; Andreassen et al. 2016a). This scale is designed to measure social media dependence and each of the 6 items reflect core addiction elements (e.g., withdrawal). The items are answered on a 5-point Likert scale ranging from very rarely (1) to very often (5) and may yield a total score from 6 to 30. The participants are asked to rate the items based on their experiences during the past year (e.g., "How often during the last year have you tried to cut down on the use of social media without success?"). The scale demonstrated adequate internal consistency in the study conducted by Andreassen et al. (2016b) with Cronbach's $\alpha = .88$. In the current study, Cronbach's α was .76.

Adult Attachment. To measure adult attachment, the Experiences in Close Relationships Scale – Revise was administered (ECR-R; Fraley et al., 2000). This 36 item questionnaire measures adult attachment style and asks questions relevant to security in adult relationships

(e.g., “I often worry that my partner will not want to stay with me”). Individuals are measured on two subscales of attachment: anxiety and avoidance. The items are answered on a 7-point Likert scale, ranging from strongly disagree (1) to strongly agree (7). Prior to analyses, items were reverse scored as appropriate. Higher scores indicate higher levels of attachment anxiety or attachment avoidance, both insecure attachment styles. Lower scores on these subdomains indicate a secure attachment. Since attachment anxiety was the main predictor, attachment avoidance was implemented as a covariate. Convergent and discriminant validity were assessed by Sibley et al. (2005) and it was determined that the ECR-R is one of the most appropriate measures of adult romantic attachment. Latent variable path analyses suggest that repeated measures of each subscale shared approximately 86% of their variance (Sibley & Liu., 2004). In the present study, the measure showed excellent internal consistency, $\alpha = .94$.

Emotion Regulation Difficulty. To measure emotion regulation difficulty or dysregulation, the Difficulties in Emotion Regulation Scale was used (DERS; Gratz & Roemer, 2004). It is a theoretically driven and widely used, comprehensive measurement of emotion regulation with 36 items assessing overall emotion regulation (e.g., “When I’m upset, I believe I will feel that way for a long time”). Participants indicated the extent to which each item applies to them on a 5-point Likert scale, ranging from almost never (1) to almost always (5). Higher scores indicate greater emotion regulation difficulty. The DERS demonstrated excellent psychometric properties, yielding a Cronbach’s α of .95.

Social Surveillance. To measure social surveillance online in romantic relationships, the Interpersonal Electronic Surveillance Scale was used (IESS; Tokunaga, 2011). This 12-item scale was developed to examine functional domains of social media platforms and how an individual may pay close attention to their partner’s social media activity (e.g., “I pay

particularly close attention to news feeds that concern my partner"). Each item was rated on a 5-point Likert scale ranging from never (1) to very frequently (5). The higher the overall score indicates greater use of interpersonal electronic surveillance in the relationship. Cronbach's α was .90, demonstrating great internal consistency.

Behavioral Screen Time. Smartphone screen time usage of social media platforms were obtained through a secure file upload system on Qualtrics. Participants were instructed on how to access their screen time data using the screen time monitoring application that is built into their mobile device (iPhones only) and were asked to take screenshots of seven consecutive days of their screen time data, specifically of the social category where each social platform time is broken down into minutes and hours. The researcher recorded overall screen time for each day in addition to screen time spent on Instagram, Twitter, Facebook, Snapchat and TikTok per day. Behavioral screen time was examined as a covariate.

Procedure

The study was approved by the Institutional Review Board at Rochester Institute of Technology. During part 1 of the study, participants were directed to Qualtrics, an online survey platform. At the beginning of the survey, participants were given instructions and a summary of the procedure. After providing informed consent, participants completed a demographic questionnaire. Participants then completed self-report measures in this specific order: BSMAS, ECR-R, DERS, and IESS. At the end, participants received a message acknowledging that they received credit for completing the first part of the study.

Part 2 of the study was open only to iPhone users and required the participant to view their screen time data monitoring app that is already installed on their mobile device and take screenshots of their social media usage. The protocol instructed them to navigate to "Settings" on

their iPhone, select the “Screen Time” feature, select “Show All Categories”, and finally to select the “Social” category, specifically. Participants were provided with a screenshot example on Qualtrics to better help them understand what was asked of them, and then they upload their 7 screenshots, resulting in data with a breakdown of social media platform usage for each of those 7 consecutive days. They had the option to de-identify their name before submitting the screenshot, and if they did not, we immediately de-identified each screenshot received. Upon completion of both parts of the study, participants were provided with a debriefing, describing the hypotheses and goal of the study, as well as presented with the contact information of the principal investigator if they had any questions or concerns.

Data Analytic Strategy

The responses from the questionnaires were scored according to each measure’s scoring guideline and assessed to determine and sort out any missing data. Data reduction was completed prior to testing the models in the analyses and all data underwent thorough examination and cleaning to ensure that all assumptions of the statistical tests were met as well as to assess for any outliers. Skewness (0.21 to 0.81) and kurtosis (-0.68 to 0.11) indices suggested that the assumption of multivariate normality was met by all predictor variables, respectively. Bivariate scatterplots were examined, suggesting that assumptions of linearity and homoscedasticity were met for the variables. Collinearity was also not found to be an issue among the predictor variables as evidenced with bivariate correlations (see Table 1 and Table 2). Lastly, no outliers were found after as the maximum Cook’s distance value of the residuals was 0.026.

Gender was analyzed initially in the final sample of 158 participants to identify any differences in attachment anxiety, attachment avoidance, or emotion regulation difficulty. A series of independent samples t-test revealed that there were no significant differences by gender

on any of these factors between cisgender males and cisgender females (*t*'s ranged from -0.13 to 1.80). Since there were no significant differences on any key variables, gender was not included as a covariate in the primary analyses. To investigate whether age had any effect on the main variables, Pearson correlations were examined. Age was not significantly correlated with any of the main factors of interest (see Table 1). However, age was negatively, significantly correlated with screen time (r = -.28, p < .05), which was expected (see Table 2).

All analyses were executed using IBM SPSS (IBM, 2020). Descriptive statistics were computed for all variables (see Table 3 and Table 4) and results from this sample were compared to expected norms and measurement ratings. Part 1 of the study was completed by 158 participants, and of those participants, a subsample of 76 participants completed the part 2 behavioral screen time measure in addition to the survey measures. To address if the part 2 subsample (n=76) differed from the subsample who completed only part 1 (n=82), we ran a series of independent samples t-tests to compare the two subgroups on the factors of interest. The scores of each key variable were compared for the two subgroups, and the results showed no significant differences (*t*'s ranged from -1.46 to .04). Because there were no statistically significant differences between the two subgroups, and both completed the part 1 surveys in the same way, we consider them to all one large sample for part 1 and analyzed them as a combined group (N =158) for the primary analyses.

To further examine the potential influence of emotion regulation and social surveillance, while also covarying for screen time, two parallel mediation models were analyzed using "Model 4" in Process Macro within SPSS (Hayes, 2017; Hayes, 2018). Attachment anxiety was entered as the independent variable in both models predicting problematic social media use (i.e., reported symptoms of social media addiction). Emotion regulation (i.e., reported difficulties with emotion

regulation) and social surveillance (i.e., social media surveillance behaviors towards a romantic partners) were entered into the model as potential mediating variables for the association between attachment anxiety and problematic social media use. A total of 10,000 bootstrap samples were used as well as producing 95% bias-corrected confidence intervals to test these proposed mediators (Hayes, 2009), which was utilized instead of using a point estimate through the Sobel test, as this can be problematic with bootstrapping due to a loss of statistical power (Hayes, 2017). We ran two separate mediation models to ultimately examine the specific effects of anxious attachments while taking into account attachment avoidance as a covariate, while the second model has the addition of behavioral screen time as a covariate. By covarying for behavioral screen time in the second model, we sought to see the potential unique effects of both psychological effects for problematic use and behavioral effects as well.

Missing Data Analysis. For the people who completed the study, there were no missing data on survey responses. Participants who got past the demographic questionnaire answered all items.

Results

Preliminary Analyses

The results of the demographic social media questions and screen time data provide interesting information about social media and its users. Participants reported their most comfortable (see Figure 1) and least comfortable (see Figure 2) social media platforms when it comes to posting personal content. Results show that the most comfortable platform reported was Snapchat (53.16%) followed by Instagram (36.71%), while Facebook was ranked as one of the lowest (2.53%). From the demographic questions, approximately sixty percent of the sample

(58.9%, *n* = 93 users) reported that they have tried to quit using social media at least once, with a frequency ranging from 1-20 times (*M* = 2.84, *SD* = 2.36).

When assessing screen time, total time spent on Instagram, Snapchat, Twitter and TikTok for a week were calculated and averaged across participants (see Table 5 for weekly mean time spent online by platform). The total weekly time spent on these platforms averaged approximately 15.5 hours/week (*M* = 15:20, *SD* = 11:07) and ranged from 0 hours to approximately 58 hours/week total. This only accounts for the specific social media platforms measured, excluding other social platforms that users might engage with. Breaking it down further, the mean time spent on TikTok per week was 5.25 hours (maximum of 26 hours). Instagram weekly time averaged about 4.45 hours, in very similar range as TikTok, but the maximum was higher, at 35.5 hours. For Snapchat, the mean time spent per week was approximately 4 hours (maximum of 22 hours). Time spent on Facebook per week averaged less than 1 hour. Lastly, time spent on Twitter per week was the lowest, averaging about 20 minutes per week (maximum of 4.25 hours).

The overall responses from this sample were examined relative to expected norms and measurement ratings in the preliminary analyses. The DERS assessment of emotion regulation produces scores ranging from 36-180. While there is no standardized clinical cut-off for this measure, clinical ranges on this score from previous research have varied between 80 to 127 (Brockmeyer et al., 2012; Staples & Mohlman, 2012). As such, the overall mean score of 89.18 in the present sample suggests relatively poor emotion regulation on average, at the low end of the clinical range. The mean attachment scores obtained in this research fall fairly close to the norms established by previous studies (Fraley, 2012) as the normed mean for attachment anxiety is 3.56, and 2.92 for attachment avoidance in this age range overall, whereas mean scores for the

current study were 3.16 for attachment anxiety and 2.51 for attachment avoidance. Electronic social surveillance has only appeared in a few studies in different forms so there are no comparable norms, however the current study mean score of 30.82 indicates a mid-range score for surveillance. As for problematic social media use, higher BSMAS scores indicate stronger social media addiction, and a score over 19 indicates that the individual is at risk for developing PSMU or an addiction (Bányai et al., 2017). In the current study, the mean score was 15.73 and the maximum score was 29. Thirty-seven participants (23.42%) scored 19 or greater, falling in the range of clinical scores for being at risk for addiction.

Primary Analyses

The study was conducted to examine the impact of attachment anxiety on PSMU, and to see if both emotion regulation difficulties and social surveillance were mediating variables. Mediation analyses were carried out on the Part 1 sample (N =158) to examine the hypotheses 1 through 3 (see Figure 3). To examine the relationship between attachment anxiety and both emotion regulation and social surveillance, we examined the *a* paths. Greater attachment anxiety (X) demonstrated a significant, positive association with emotion regulation difficulties (a_1; β = .64, standard error [*SE*] = 1.29, t = 9.70, p < .001) and social surveillance (a_2; β = .48, *SE* = .57, t = 6.21, p < .001). Additionally, avoidant attachment as a covariate was significant in its association with social surveillance (β = -.18, *SE* = .70, t = -2.26, p = .02). These associations show that people with greater attachment anxiety also reported greater difficulty with emotion regulation, as well as greater social surveillance activity on social media, compared to people with lower attachment anxiety. These proposed mediator variables were examined in their direct relationship (b_1 and b_2) to the outcome variable (PSMU). Emotion regulation difficulties (b_1; β = .27, *SE* = .02, t = 2.75, p < .01) and social surveillance (b_2; β = .27, *SE* = 0.04, t = 3.27, p < .001)

demonstrated a significant, positive association with PSMU. This shows that people who have difficulty regulating emotion report more problematic use of social media, and that people who engage in more social surveillance activity report more problematic social media use as well. Overall, the predicted direct association between attachment anxiety (X) and PSMU (Y) in hypothesis 1 was not significant (β = .00, *SE* = .38, *t* = .00, *p* = .99; see Figure 4). The standardized indirect effect of X on Y through emotion regulation difficulties (.61, *SE* = .21, 95% C.I. [.21, 1.03]) and social surveillance (.46, *SE* = .17, 95% C.I. [.17, .83]) were both significant. All coefficients and values can be seen in Table 6. Overall, these results do not support hypotheses 2 and 3: because there is no direct relationship between attachment anxiety and PSMU, the factors of social surveillance and emotion regulation cannot be mediators. Instead, these factors appear to show indirect pathways between anxious attachment and PSMU.

The second model was examined, consisting of the same variables and proposed mediators with the addition of screen time as a covariate, in which the sample consisted of the subset of participants (*n*=76) who completed Part 2, providing screen time data. These results are shown in Figure 5. Greater attachment anxiety (X) demonstrated a significant, positive association with emotion regulation difficulties (a_1; β = .62, *SE* = 1.80, *t* = 6.42, *p* < .001) and social surveillance (a_2; β = .35, *SE* = .84, *t* = 2.87, *p* < .01). Additionally, avoidant attachment as a covariate was again marginally significant in its association with social surveillance (β = -.24, *SE* = 1.22, *t* = -1.96, *p* = .05), showing a significant trend. These associations replicate the results from the larger sample in part 1 and show that people with greater attachment anxiety also reported greater difficulty with emotion regulation, as well as greater social surveillance activity on social media, compared to people with lower attachment anxiety. However, when these proposed variables were examined in their direct relationship (b_1 and b_2) to the outcome variable

(PSMU, it emerged that emotion regulation difficulties (b_1; β = .18, *SE* = .02, *t* = 1.19, *p* = .48) and social surveillance (b_2; β = .20, *SE* = .06, *t* = 1.69, *p* = .09) did not demonstrate a significant association with PSMU. Finally, in this analysis, screen time as a covariate was significant in predicting PSMU (β = .24, *SE* = .00, *t* = 2.13, *p* < .05), but was not significantly related to the other factors. Overall, the predicted direct association between attachment anxiety (X) and PSMU (Y) was not significant in this model either (β = -.11, *SE* = .53, *t* = -.71, *p* = .48; see Figure 5). The standardized indirect effect of X on Y through emotion regulation difficulties (.38, *SE* = .29, 95% C.I. [-.24, 1.20]) and social surveillance (.24, *SE* = .18, 95% C.I. [-.04, .66]) in this model were both not significant. All coefficients and values can be seen in Table 6. As in model 1, these results do not support the proposal that social surveillance and emotion regulation will be mediators between attachment anxiety and PSMU, as again there was no direct effect. In model 2, the only significant relationships were between attachment anxiety and the two additional factors (social surveillance and emotion regulation), replicating model 1. The second model did provide support for hypothesis 4, as the only factor significantly positively associated with PSMU was screen time.

The model 1 results were different from model 2 in finding a significant indirect pathway between attachment anxiety and PSMU via emotion regulation and social surveillance. By contrast, model 2 found no significant correlation between any factors with PSMU, except screen time. To further explore this difference of non-significance of key variables in model 2, the same model was run again with the same sample of 76 participants, and the screen time covariate was removed to test if the model obtained different results. The model remained almost identical with no changes in significant relationships.

Discussion

The current study sought to provide a better understanding of the potential influences that psychological factors and specific online behaviors have on the way people in romantic relationships use social media, specifically people with anxious attachment styles. While the current study did not provide support for the hypotheses predicting either a direct effect of anxious attachment, nor for mediation of other factors in the link with PSMU, the results did find significant indirect paths among the factors. In particular, both emotion regulation and social surveillance were found to be correlated with anxious attachment, and with PSMU, as predicted from previous research.

In the first set of results with the large sample in part 1, the surprising and unpredicted result was that people with more attachment anxiety did not show higher levels of PSMU. Previous work has found that anxiously attached individuals are at higher risk for social media addiction or problematic use (e.g., Liu & Ma, 2019; Marino et al., 2019; Odacı & Çıkrıkçı, 2014; Oldmeadow et al., 2013; Worsley et al., 2018), but the possible interaction of related factors like emotion regulation and social surveillance have not been fully measured in most of these studies. Thus, while it was surprising that in the present research, PSMU was not related directly to attachment anxiety, there are several potential reasons that might be developed into future research.

One potential reason that this contradictory result emerged could be due to the previous research focus on Facebook and measuring PSMU in terms of Facebook use. We now see from this sample, and recent statistics, that very few young adults are electing to use Facebook and instead spend a lot of time on other platforms. Perhaps connections among factors found in earlier research, such as the significant association between attachment anxiety and PSMU, has changed with respect to these newer platforms. For example, since the features of each platform

differ, each platform may elicit different behaviors and gratify different motivations. Some research has found a correlation between specific functions of social media (e.g., posting selfies) and personality factors (e.g., grandiose narcissism; Carpenter, 2012). Future research should try to further isolate what the social media uses and motivations are for these newer platforms and interactive features and attempt to replicate the research on older platforms like Facebook, to extend the understanding of risks and benefits of social media.

While previous research has found a direct association between PSMU and attachment anxiety, the samples in many of those studies were not restricted to people who actually were in romantic relationships (e.g., Liu & Ma, 2019). When participants rate their attachment to romantic partners in terms of their general or hypothetical feelings, their attachment ratings might differ from participants who are rating their attachment to a real, current romantic partner. The present study only focused on people who are currently in romantic relationships, not hypothetical or past relationships, because we wanted to know if their relationship status and behaviors could be related to their social media use (i.e., social surveillance of that current partner). Therefore, one possibility is that the link found in previous research between attachment anxiety and PSMU is limited to samples that are not necessarily reporting about current relationships, and people who are in current relationships do not demonstrate the same link between higher attachment anxiety and more problematic social media use. As a general issue in understanding adult attachment styles, future research should examine whether asking these questions in the context of a current romantic relationship compared to a previous relationship or during the vulnerable time of a breakup would provide vastly different results, especially since social media behavior like surveillance activity might be much higher during or after a breakup. Future research should build on the advantage of this study that people's

attachment style and social surveillance behavior were assessed relative to their current, actual relationship and behaviors. This will continue to add knowledge to the few studies investigating these constructs in the context of relationships, for example with ex-partners or post-breakups with partners (e.g., Fox & Warber, 2014; Yaakobi & Goldenberg, 2014).

Similarly, when it comes to measuring social surveillance online in the present research, it was critically important to have a sample of people currently in relationships in order for the constructs to be more reliably and objectively measurable (i.e., participants reporting their actual surveillance, not their hypothetical or imagined surveillance). Given the differences between the present results and previous studies, clarifying the importance of rating real vs. hypothetical relationships is an area for future research.

On a related note, a possible limitation of the current study is that an assessment of relationship quality was not included, and this factor could potentially act as a moderating variable. For example, we might expect that people who are in poor quality relationships (perhaps with deception or cheating involved) might engage in behaviors like social surveillance more, regardless of their general attachment style. Future studies might want to assess the quality of the participants' current romantic relationship, outside of attachment, to get a more robust examination of what role romantic relationships play in these variables.

Another main goal of this research was to measure the possible mediating factors of emotion regulation and social surveillance in the relationship between attachment anxiety and PSMU. Here again the results were unexpected but provide an opportunity for interesting interpretation. Model 1 with the full sample demonstrates that both emotion regulation difficulty and social surveillance of one's romantic partner online are significant influences in determining the occurrence of PSMU among people in romantic relationships. This confirms previous

research regarding emotion regulation (e.g., Hoffner & Lee, 2015; Hormes et al., 2014; Horwood & Anglim, 2021; Yildiz, 2017) and extends research on social surveillance (e.g., Fox & Warber, 2014; Tokunaga, 2011) and how these factors associate with PSMU. However, these results do not provide support for hypotheses 2 and 3 which predicted they would be mediating factors. Instead, this research suggests that emotion dysregulation forms an indirect path with both attachment anxiety and PSMU, and the same is true for social surveillance.

These results also confirm previous research that attachment anxiety is significantly, positively associated with poor emotion regulation (e.g., Murphy et al., 2015) among a group of social media users. In previous studies, the same association was found with social surveillance, as attachment anxiety was also positively, significantly correlated with social surveillance activity of one's partner (e.g., Fox & Warber, 2014; Marshall, 2012; Tokunaga, 2011).

However, the main question for this research was whether these individual factors of emotion regulation and social surveillance mediate the relationship between attachment anxiety and PSMU. In the present study, ultimately there was no overall relationship between attachment anxiety and PSMU, demonstrating no support for hypothesis 1, and this non-relationship precludes the possibility of finding mediating factors. Instead, significant indirect paths were found, indicating that people who had an anxious attachment style in the present study were more likely to have difficulty with emotion regulation, and more likely to engage in social surveillance. In addition, the people who had emotion regulation problems and engaged in social surveillance were more likely to have higher PSMU. Thus, while there was confirmation of previous research showing conceptual links between the factors of emotion regulation and social surveillance as related to both attachment anxiety and PSMU, they did not appear to mediate because in this sample there was no direct link between attachment anxiety and PSMU. While

there was no mediation as indicated in hypotheses 2 and 3, significant indirect paths were found. Future research should further examine the link between attachment anxiety and PSMU to try to identify why the present results differed from previous studies. It is possible that the indirect effects measured in this study might account for some of those previous findings.

An interesting aspect of this study was assessing young adults' social media behavior through a valid and reliable measure of screen time. By doing so, we were able to examine exactly where people were actually spending their time over the course of a week's social media use, instead of relying on self-report estimates. While research using novel methods like smartphone logged data collection on social media use is fairly recent and has mostly examined general smartphone use (e.g., Jones-Jang et al., 2020), results have consistently shown differences between self-report estimates and logged screen time measures like the one used in the present study.

The logged screen time measures in the current research provided interesting insight into current social media use by young adults in romantic relationships. Although results indicate that TikTok had the highest mean average time spent per week, it was also frequently nominated as a least comfortable platform for users to post personal content on (i.e., selfies, writing text, posting videos or photo), second only to Facebook in unpopularity. This indicates that while a large proportion of users prefer TikTok as a social media platform to engage in, most of them only prefer it for viewing but do not feel comfortable posting on the platform as they do on other platforms such as Snapchat and Instagram. This highlights some of the challenges of measuring and understanding social media use. Previous research on social media use often did not distinguish between different social media platforms (e.g., Marshall, 2012; Muench et al., 2015) or different behaviors on the platforms, mostly just considering time spent (e.g., Huang, 2017).

For example, a user who spends 10 hours/week watching amusing TikTok videos might be expected to have different outcomes from a user who spends 10 hours/week attempting to do social surveillance of their romantic partner. Future research should distinguish among time spent on different platforms and specific behaviors on social media to more clearly examine how these factors are related to issues like PSMU.

While the present research focused on only young adults in a limited age range, there was a negative correlation between age and screen time overall. This result was expected, and might reflect a cohort effect, as each recent generation has had access to social media earlier in life (e.g., Twenge et al., 2019). This cohort effect would predict that individuals who are currently 18 years old are heavier media users than individuals who are now 24 were when they themselves were 18 years old. General screen time measures support this interpretation, as previous research found significant cohort differences in how adolescents spend their time, including spending less time with their friends in person and spending more time on internet communication (including social media) which suggests a possible consequence of the increasing rate of smartphone and social media use (Twenge et al., 2019). In addition to examining adolescent use, future work should expand to examine possible cohort differences in young adults. The present results showed support for hypothesis 4 that screen time was significantly, positively associated with PSMU, but the changes in screen time with age suggest the need for future research to confirm and explore this result.

The present study demonstrates some different results from the literature, which has been primarily focused on Facebook use (e.g., Flynn et al., 2018). The present results indicate that different platforms may be different in their effects on users, and research, at least on young adults, should start shifting the focus to other platforms that are more frequently used. The

change in platform popularity also raises the interesting question of whether the types of relationships between factors found in Facebook research are necessarily going to be generalizable to other platforms. For example, perhaps image-based social media platforms are more problematic for anxiously attached young adults because they promote social surveillance, subsequently increasing the likelihood of greater PSMU. The idea that young adults might be at great risk for PSMU, or feelings of being addicted to social media, is reflected in the self-report responses showing that approximately sixty percent of this sample tried to quit using social media at least once, and some users tried to quit up to twenty times. This response is clearly linked to the features of addictive behavior (e.g., substance abuse or other chemical addictions) where one attempts to quit the problematic behavior but fails (e.g., relapse). The fact that so many young adults in the present research tried to quit social media suggests that they may be noticing negative outcomes of social media in their own lives, perhaps at levels that do not reach clear PSMU.

Future research needs to examine new social media platforms from the perspective of what opportunities they provide, and how they are used, to ask whether their effects are the same as for older social media platforms. Careful analysis of both the features and actual uses of social media functions would clarify what the dangers or risks are that are relevant to each type of social media.

One clear outcome of the present research is that Facebook is no longer the premier social media platform for young adults, at least those measured in this study who were regular users and otherwise only distinguished by being college students who are in romantic relationships. When asked about preferred platforms, very few people chose Facebook, and in fact it was nominated to be the least desired and most uncomfortable platform among these

young adults. It should be noted that Facebook use was extremely variable – it was ranked as the least comfortable platform for posting personal content, and the mean average weekly time was lower than most other platforms, but the range was rather large, indicating that some people spent a significant time on Facebook whereas the majority did not spend any time on it. Overall, the present results suggest a need to revisit some of the early research on social media to examine whether the factors related to Facebook use can be adapted to understanding newer platforms.

Limitations and Future Directions

This research is not without limitations and the results should be interpreted with caution. The small sample size of participants (n =76) who provided screen time data meant the second model test had limited statistical power and may not have allowed for the detection of true effects. Even the larger sample who completed part 1 might not be sufficiently large to identify effects given the variability of the factors. The study also solely relied on an online sample collection, which becomes inherently more difficult to control than if the data were collected in a laboratory setting (specifically the logged screen time data) or if the researcher could have directly accessed each participant's mobile device. However, a main advance of this research was improving the measure of screen time from self-reported overall averages, which are likely unreliable (Jones-Jang et al., 2020), to logged phone-data-collection. While the data collected here are difficult to compare to previous studies, because of the possible cohort differences and pandemic effects increasing general screen time as well as self-report issues, it is likely that the data in the present research provide a more reliable and valid picture of screen time among current young adults (Jones-Jang et al., 2020). Suggestions for future research would be to collect screen time data in the laboratory if possible, or with sufficient funding, to utilize an

external mobile application to automatically record social media screen time, to provide a more robust examination of time spent on social media platforms. This last idea would also help participants who had a difficult time following instructions for screen time collection, and a mobile app to record this data would be the most beneficial to eliminate this confusion or to collect this data in a laboratory to better guide the participant.

Another area for improvement would be finding or creating more robust tests of social surveillance that are relevant to current social media platforms. The measure adapted here (the IESS) and the very few other existing measures are all centered around Facebook, including some Facebook features in the questions such as references to "writing on walls" and other features that appear to be outdated or of little importance to current platforms. A more robust and specific measure of social surveillance activity, especially considering the possible online behaviors of people in romantic relationships, that is more geared towards current social media features will allow for a better measure of the construct of social surveillance activity.

Overall, the limitations of the current research warrant future work examining these constructs and their relationships. Research could compare individuals with anxious attachment styles who are single compared to those in relationships and how the constructs are affected by this difference. Future work specifically examining screen time behavior and social media use within a larger sample is integral to a better understanding of the impact of time spent on social media and PSMU in this population. In addition to a larger sample overall, obtaining more equal and diverse gender groups will be important for examining true gender differences. While we would have liked to include the participants identifying as non-binary and 'other' in the current study, the sample size was too small to yield a true effect, so future studies should try to recruit more participants with a range of gender identities other than cisgender individuals (especially

considering that there is already a huge lack of research that is inclusive of other gender identities). Finally, this research pointed to the importance of understanding personal and motivation factors in identifying problematic social media use. Another factor to explore is the role of self-esteem in these key variable associations. Since individuals with anxious attachments and maladaptive behaviors (i.e., emotion dysregulation and social surveillance) do appear to use social media in a problematic way, this opens the possibility that self-esteem may potentially influence these relationships. Self-esteem may also link to insecure attachment styles and relationship behaviors (e.g., Sisi et al., 2021; Wongpakaran et al., 2012), as it is already known that there is a link between social media use and low self-esteem (e.g., Apaolaza et al., 2019; Vogel et al., 2014).

A challenge of social media research at the present time is that social media platforms and opportunities are rapidly advancing, so much so that every few months these mainstream platforms implement new features, specifically designed to keep people engaging on the platform longer. For example, features now allow for scrolling through Instagram reels or TikTok videos without a definite end, as the algorithm continuously provides suggestions, making it easy to spend more time doing it mindlessly. Therefore, more opportunities for the user are created, and users may be drawn into increased screen time, and these factors may directly or indirectly contribute to PSMU. This kind of interactive effect, where a user's response to the media actually changes the flow of the media to the user, is an indication of how theories of media influence have had to become more sensitive to the possible cyclical and bidirectional influences of media use. For example, consider how these changing algorithms could influence online behavior in the case of social surveillance. On Instagram, if a user who is in a relationship interacts with their partner's account frequently, Instagram will begin to provide suggestions of

posts in the user's own personal feed, showing posts that their partner has liked. Intentional social surveillance on Instagram might look like going to your partner's profile and looking through each account your partner follows and intentionally checking to see what posts your partner is "liking." This new algorithm means that simply interacting with a partner's account means that a user will be presented with this kind of surveillance information even without directly seeking it out, and it could become a vicious cycle if the user sees something that makes them feel unhappy or uncomfortable. This new feature - algorithms that provide information right into a user's feed – might influence some users by showing them information that previously they would have had to actively seek out. Additionally, if this information about a partner is not initially being sought out, and users are not expecting to see information about their partner that could potentially make them uncomfortable or anxious, they may need to find a way to regulate their emotions if distress is caused by the unwanted content. This extended example is meant to show how measures of media influence will have to carefully examine the features of the platforms themselves, as well as how users access and interact with those features.

This notion of a social media platform providing information to the user unprovoked links back to media theories. The U&G (uses and gratifications) theory emphasizes understanding a user's motivations and gratifications of engaging with certain types of media. The current study did measure motivations and use, looking how people with anxious attachments approach social media differently by examining the amount of time spent, behavior (i.e., social surveillance), and emotion regulation. However, media has become so interactive that when a user engages with media, the media itself changes for the user, and so continuing research is needed.

Future studies should also examine specific platforms and both how and why they are used. As discussed, it is likely that Facebook use studies are no longer applicable in the sense that they may not yield the same interactions or outcomes as other platforms. While the majority of research thus far has focused on Facebook as the main platform for evaluating such psychological and behavioral constructs (e.g., Fox & Warber, 2014; Hormes et al., 2015; Marino et al., 2019; Oldmeadow et al., 2013; Papacharissi & Mendelson, 2011), it is important to expand the focus to other, newer types of media that are the current preference of young adults.

Conclusion

Ultimately, this study examined the direct and indirect influences of attachment anxiety on problematic social media use. In contrast to previous research, attachment anxiety was not found to be a significant risk factor for PSMU. However, the results showed that attachment anxiety is directly associated with both poor emotion regulation and social surveillance activities, findings that are consistent with past research (e.g., Fox & Warber, 2014; Marshall, 2012). In addition, the present research also confirmed that there is a direct link between both poor emotion regulation and social surveillance, and PSMU (e.g., Hormes et al., 2015). The new, indirect pathways found in the present research need more study to fully interpret, as they were not significant in the smaller subsample who provided screen time information. So far, this study suggests that in the context of individuals in romantic relationships, emotion regulation capabilities and surveillance activity of one's partner online are linked to problematic social media use and to anxious attachment on their own and may show significant indirect paths. Future research on problematic social media use should consider implementing other measures of regulation and relationship behaviors in addition to examining each type of social media platform and its individual uses, motivations and features relative to the constructs discussed, as

well as a more robust test of social media screen time. The present results indicate significant changes in the types, and potentially the uses, of social media platforms that are relevant to young adults today, which calls into question the external validity of previous research that centered mostly on Facebook. This study also provided one of the first reliable and valid measures of actual social media screen time in this area of research, and this type of measure should be replicated and extended in future studies.

References

Adamczyk, K., & Pilarska, A. (2012). Attachment style, relationship status, gender and relational competences among young adults. *Polish Psychological Bulletin, 43*(2), 59-69. http://dx.doi.org/10.2478/v10059-012-0007-4

Aichner, T., Grünfelder, M., Maurer, O., & Jegeni, D. (2020). Twenty-five years of social media: A review of social media applications and definitions from 1994 to 2019. *Cyberpsychology, Behavior, and Social Networking*, http://dx.doi.org.ezproxy.rit.edu/10.1089/cyber.2020.0134

Aldao, A., Nolen-Hoeksema, S., & Schweizer, S. (2010). Emotion-regulation strategies across psychopathology: A meta-analytic review. *Clinical Psychology Review, 30*(2), 217-237. https://doi.org/10.1016/j.cpr.2009.11.004

Andreassen, C. S., Billieux, J., Griffiths, M. D., Kuss, D. J., Demetrovics, Z., Mazzoni, E., & Pallesen, S. (2016a). Bergen Social Media Addiction Scale [Database record]. Retrieved from PsycTESTS. doi:https://dx.doi.org/10.1037/t74607-000

Andreassen, C. S., Billieux, J., Griffiths, M. D., Kuss, D. J., Demetrovics, Z., Mazzoni, E., & Pallesen, S. (2016b). The relationship between addictive use of social media and video games and symptoms of psychiatric disorders: A large-scale cross-sectional study. *Psychology of Addictive Behaviors*, *30*(2), 252–262. https://doi.org/10.1037/adb0000160

Andreassen, C. S., Torsheim, T., Brunborg, G. S., & Pallesen, S. (2012). Development of a Facebook Addiction Scale. *Psychological Reports*, *110*(2), 501–517. https://doi.org/10.2466/02.09.18.pr0.110.2.501-517

Apaolaza, V., Hartmann, P., D'Souza, C., & Gilsanz, A. (2019). Mindfulness, compulsive mobile social media use, and derived stress: The mediating roles of self-esteem and social

anxiety. *Cyberpsychology, Behavior, and Social Networking, 22*(6), 388-396. http://dx.doi.org/10.1089/cyber.2018.0681

Aslam, S. (2021, January 6). *Instagram by the Numbers: Stats, Demographics & Fun Facts*. Omnicore. https://www.omnicoreagency.com/instagram-statistics/.

Auxier, B., & Anderson, M. (2022, January 31). *Social media use in 2021*. Pew Research Center: Internet, Science & Tech. Retrieved from https://www.pewrsearch.org/internet/2021/04/07/social-media-use-in-2021/

Bányai, F., Zsila, Á., Király, O., Maraz, A., Elekes, Z., Griffiths, M. D., ... & Demetrovics, Z. (2017). Problematic social media use: Results from a large-scale nationally representative adolescent sample. *PloS one, 12*(1), e0169839.

Bartholomew, K., & Horowitz, L. M. (1991). Attachment styles among young adults: A test of a four-category model. *Journal of Personality and Social Psychology, 61*(2), 226–244. https://doi.org/10.1037/0022-3514.61.2.226

Bartholomew, K. (1993). *From childhood to adult relationships: Attachment theory and research.* In S. Duck (Ed.), *Understanding relationship processes series, Vol. 2. Learning about relationships* (p. 30–62). Sage Publications, Inc.

Barthorpe, A., Winstone, L., Mars, B., & Moran, P. (2020). Is social media screen time really associated with poor adolescent mental health? A time use diary study. *Journal of Affective Disorders, 274*, 864-870. http://dx.doi.org.ezproxy.rit.edu/10.1016/j.jad.2020.05.106

Bayer, J. B., Ellison, N. B., Schoenebeck, S. Y., & Falk, E. B. (2016). Sharing the small moments: Ephemeral social interaction on snapchat. *Information, Communication & Society, 19*(7), 956-977. https://doi.org/10.1080/1369118X.2015.1084349

Berking, M., Margraf, M., Ebert, D., Wupperman, P., Hofmann, S. G., & Junghanns, K. (2011). Deficits in emotion-regulation skills predict alcohol use during and after cognitive-behavioral therapy for alcohol dependence. *Journal of consulting and clinical psychology*, *79*(3), 307–318. https://doi.org/10.1037/a0023421

Bowlby, J. (1977). The making and breaking of affectional bonds: I. Aetiology and psychopathology in the light of attachment theory. *The British Journal of Psychiatry, 130*, 201-210. http://dx.doi.org.ezproxy.rit.edu/10.1192/bjp.130.3.201

Bowlby, J. (1980). *Attachment and loss.* Basic Books.

Bowlby J. (1982). Attachment and loss: retrospect and prospect. *The American journal of orthopsychiatry*, *52*(4), 664–678. https://doi.org/10.1111/j.1939-0025.1982.tb01456.x

Brandtzaeg, P. B. (2012). Social Networking Sites: Their Users and Social Implications - A Longitudinal Study. *Journal of Computer-Mediated Communication*, *17*(4), 467–488. https://doi.org/10.1111/j.1083-6101.2012.01580.x

Brenning, K. M., & Braet, C. (2013). The emotion regulation model of attachment: An emotion-specific approach. *Personal Relationships, 20*(1), 107-123. http://dx.doi.org.ezproxy.rit.edu/10.1111/j.1475-6811.2012.01399.x

Brockmeyer, T., Holtforth, M. G., Bents, H., Kämmerer, A., Herzog, W., & Friederich, H. C. (2012). Starvation and emotion regulation in anorexia nervosa. *Comprehensive psychiatry*, *53*(5), 496-501.

Carpenter, C. J. (2012). Narcissism on Facebook: Self-promotional and anti-social behavior. *Personality and Individual Differences, 52*(4), 482–486. https://doi.org/10.1016/j.paid.2011.11.011

Cheung, C. M. K., Chiu, P.-Y., & Lee, M. K. O. (2011). Online social networks: Why do students use facebook? *Computers in Human Behavior*, *27*(4), 1337–1343. https://doi.org/10.1016/j.chb.2010.07.028

Chou, W. S., Hunt, Y. M., Beckjord, E. B., Moser, R. P., & Hesse, B. W. (2009). Social media use in the united states: Implications for health communication. *Journal of Medical Internet Research*, *11*(4), e48-e48. https://doi.org/10.2196/jmir.1249

Coyne, S. M., Padilla-Walker, L. M., & Howard, E. (2013). *Emerging in a digital world: A decade review of media use, effects, and gratifications in emerging adulthood*. SAGE Publications. https://doi.org/10.1177/2167696813479782

Coyne, S. M., Rogers, A. A., Zurcher, J. D., Stockdale, L., & Booth, M. (2020). Does time spent using social media impact mental health?: An eight year longitudinal study. *Computers in Human Behavior*, *104*, 106160. https://doi.org/10.1016/j.chb.2019.106160

Dhir, A., & Tsai, C. (2017). Understanding the relationship between intensity and gratifications of facebook use among adolescents and young adults. *Telematics and Informatics*, *34*(4), 350-364. https://doi.org/10.1016/j.tele.2016.08.017

Estévez, A., Jáuregui, P., Sánchez-Marcos, I., López-González, H., & Griffiths, M. D. (2017). Attachment and emotion regulation in substance addictions and behavioral addictions. *Journal of Behavioral Addictions*, *6*(4), 534-544. http://dx.doi.org/10.1556/2006.6.2017.086

Flynn, S., Noone, C., & Sarma, K. M. (2018). An exploration of the link between adult attachment and problematic Facebook use. *BMC psychology*, *6*(1), 34. https://doi.org/10.1186/s40359-018-0245-0

Fox, J., & Warber, K. M. (2014). Social Networking Sites in Romantic Relationships: Attachment, Uncertainty, and Partner Surveillance on Facebook. *Cyberpsychology, Behavior, and Social Networking*, *17*(1), 3–7. https://doi.org/10.1089/cyber.2012.0667

Fraley, C. R. (2012). *Information on the experiences in close relationships-revised (ECR-R) adult attachment questionnaire*. Retrieved January 14, 2022, from http://labs.psychology.illinois.edu/~rcfraley/measures/ecrr.htm

Fraley, R. C., Waller, N. G., & Brennan, K. A. (2000). An item-response theory analysis of self-report measures of adult attachment. Journal of Personality and Social Psychology, 78, 350-365.

Gratz, K. L., & Roemer, L. (2004). Multidimensional assessment of emotion regulation and dysregulation: Development, factor structure, and initial validation of the difficulties in emotion regulation scale. Journal of Psychopathology and Behavioral Assessment, 26(1), 41-54.

Griffiths, M. (2005). A 'components' model of addiction within a biopsychosocial framework. *Journal of Substance Use, 10*(4), 191 197. https://doi.org/10.1080/14659890500114359

Griffiths, M. D., Kuss, D. J., & Demetrovics, Z. (2014). Social networking addiction: An overview of preliminary findings. *Behavioral Addictions*, 119–141. https://doi.org/10.1016/b978-0-12-407724-9.00006-9

Gross, J. J. (1998). The Emerging Field of Emotion Regulation: An Integrative Review. Review of General Psychology, 2(3), 271–299. https://doi.org/10.1037/1089-2680.2.3.271

Gross J. J. (2002). Emotion regulation: affective, cognitive, and social consequences. *Psychophysiology*, *39*(3), 281–291. https://doi.org/10.1017/s0048577201393198

Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology, 85*(2), 348-362. http://dx.doi.org.ezproxy.rit.edu/10.1037/0022-3514.85.2.348

Hankin, B. L., Kassel, J. D., & Abela, J. R. (2005). Adult attachment dimensions and specificity of emotional distress symptoms: prospective investigations of cognitive risk and interpersonal stress generation as mediating mechanisms. *Personality & social psychology bulletin, 31*(1), 136–151. https://doi.org/10.1177/0146167204271324

Hayes, A. F. (2009). Beyond Baron and Kenny: Statistical mediation analysis in the new millennium. *Communication Monographs, 76*(4), 408–420. https://doi.org/10.1080/03637750903310360

Hayes, A. F. (2017). Introduction to mediation, moderation, and conditional process analysis: A regression-based approach. Guilford publications.

Hayes, A. F. (2018). Partial, conditional, and moderated moderated mediation: Quantification, inference, and interpretation. *Communication Monographs, 85*(1), 4-40. https://doi.org/10.1080/03637751.2017.1352100

Hazan, C., & Shaver, P. (1987). Romantic love conceptualized as an attachment process. *Journal of Personality and Social Psychology, 52*(3), 511–524. https://doi.org/10.1037/0022-3514.52.3.511

Hoffner, C. A., & Lee, S. (2015). Mobile phone use, emotion regulation, and well-being. *Cyberpsychology, Behavior, and Social Networking, 18*(7), 411-416. http://dx.doi.org.ezproxy.rit.edu/10.1089/cyber.2014.0487

Hormes, J. M., Kearns, B., & Timko, C. A. (2014). Craving Facebook? Behavioral addiction to online social networking and its association with emotion regulation deficits. *Addiction, 109*(12), 2079–2088. https://doi.org/10.1111/add.12713

Horwood, S., & Anglim, J. (2021). Emotion Regulation Difficulties, Personality, and Problematic Smartphone Use. *Cyberpsychology, Behavior, and Social Networking*, *24*(4), 275–281. https://doi.org/10.1089/cyber.2020.0328

Huang, C. (2017). Time spent on social network sites and psychological well-being: A meta-analysis. *Cyberpsychology, Behavior, and Social Networking*, *20*(6), 346–354. https://doi.org/10.1089/cyber.2016.0758

Jones-Jang, S. M., Heo, Y.-J., McKeever, R., Kim, J.-H., Moscowitz, L., & Moscowitz, D. (2020). Good news! communication findings may be underestimated: Comparing effect sizes with self-reported and logged smartphone use data. *Journal of Computer-Mediated Communication*, *25*(5), 346–363. https://doi.org/10.1093/jcmc/zmaa009

Kaplan, A. M., & Haenlein, M. (2010). Users of the world, unite! The challenges and opportunities of Social Media. *Business Horizons*, *53*(1), 59–68. https://doi.org/10.1016/j.bushor.2009.09.003

Katz, E., Blumler, J. G., & Gurevitch, M. (1973). Uses and gratifications research. *Public Opinion Quarterly, 37*(4), 509–523.

Katz, E., Blumler, J. G., & Gurevitch, M. (1974). Utilization of mass communication by the individual. In J. G. Blumler, & E. Katz (Eds.), *The uses of mass communications: Current perspectives on gratifications research* (pp. 318–330). Beverly Hills, CA: Sage.

Keles, B., McCrae, N., & Grealish, A. (2019). A systematic review: the influence of social media on depression, anxiety and psychological distress in adolescents. *International Journal of Adolescence and Youth*, *25*(1), 79–93. https://doi.org/10.1080/02673843.2019.1590851

Kim, J., & Cicchetti, D. (2010). Longitudinal pathways linking child maltreatment, emotion regulation, peer relations, and psychopathology. *Journal of Child Psychology and Psychiatry, 51*(6), 706–716. https://doi.org/10.1111/j.1469-7610.2009.02202.x

Kirkpatrick, L. A., & Davis, K. E. (1994). Attachment style, gender, and relationship stability: A longitudinal analysis. *Journal of Personality and Social Psychology, 66*(3), 502-512. http://dx.doi.org/10.1037/0022-3514.66.3.502

Knobloch-Westerwick, S. (2006). Mood Management: Theory, Evidence, and Advancements. In J. Bryant & P. Vorderer (Eds.), *Psychology of entertainment* (pp. 239–254). Lawrence Erlbaum Associates Publishers.

Kuss, D., & Griffiths, M. (2017). Social Networking Sites and Addiction: Ten Lessons Learned. *International Journal of Environmental Research and Public Health*, *14*(3), 311. https://doi.org/10.3390/ijerph14030311

Liu, C., & Ma, J. (2019). Adult attachment style, emotion regulation, and social networking sites addiction. *Frontiers in Psychology, 10*, 7. http://dx.doi.org/10.3389/fpsyg.2019.02352

Loman, M. M., & Gunnar, M. R. (2010). Early experience and the development of stress reactivity and regulation in children. *Neuroscience & Biobehavioral Reviews*, *34*(6), 867–876. https://doi.org/10.1016/j.neubiorev.2009.05.007

Marino, C., Marci, T., Ferrante, L., Altoé, G., Vieno, A., Simonelli, A., Caselli, G., & Spada, M. M. (2019). Attachment and problematic Facebook use in adolescents: The mediating role

of metacognitions. *Journal of Behavioral Addictions*, *8*(1), 63-78. http://dx.doi.org/10.1556/2006.8.2019.07

Marshall T. C. (2012). Facebook surveillance of former romantic partners: associations with postbreakup recovery and personal growth. *Cyberpsychology, behavior and social networking*, *15*(10), 521–526. https://doi.org/10.1089/cyber.2012.0125

McQuail, D. (1972). *Sociology of mass communication*. Middlesex, England: Penguin.

McQuail, D. (2010). *McQuail's mass communication theory*. London: Sage Publications.

Muench, F., Hayes, M., Kuerbis, A., & Shao, S. (2015). The independent relationship between trouble controlling Facebook use, time spent on the site and distress. *Journal of behavioral addictions*, *4*(3), 163–169. https://doi.org/10.1556/2006.4.2015.013

Murphy, T. P., Laible, D. J., Augustine, M., & Robeson, L. (2015). Attachment's Links With Adolescents' Social Emotions: The Roles of Negative Emotionality and Emotion Regulation. *The Journal of genetic psychology*, *176*(5), 315–329. https://doi.org/10.1080/00221325.2015.1072082

Odacı, H., & Çıkrıkçı, Ö. (2014). Problematic internet use in terms of gender, attachment styles and subjective well-being in university students. *Computers in Human Behavior*, *32*, 61–66. https://doi.org/10.1016/j.chb.2013.11.019

Oldmeadow, J. A., Quinn, S., & Kowert, R. (2013). Attachment style, social skills, and Facebook use amongst adults. *Computers in Human Behavior*, *29*(3), 1142–1149. https://doi.org/10.1016/j.chb.2012.10.006

Orben, A. (2020). Teenagers, screens and social media: a narrative review of reviews and key studies. *Social Psychiatry and Psychiatric Epidemiology*, *55*(4), 407–414. https://doi.org/10.1007/s00127-019-01825-4

Ozimek, P., & Bierhoff, H.-W. (2016). Facebook use depending on age: The influence of social comparisons. *Computers in Human Behavior, 61,* 271–279. https://doi.org/10.1016/j.chb.2016.03.034

Papacharissi, Z., & Mendelson, A. (2011). Toward a new(er) sociability: Uses, gratifications, and social capital on Facebook. *Media Perspectives for the 21st Century*, 212–230. https://doi.org/10.4324/9780203834077-21

Park, L. E., Crocker, J., & Mickelson, K. D. (2004). Attachment styles and contingencies of self-worth. *Personality & social psychology bulletin, 30*(10), 1243–1254. https://doi.org/10.1177/0146167204264000

Perrin, A., & Anderson, M. (2020, July 31). Share of U.S. adults using social media, including Facebook, is mostly unchanged SINCE 2018. Retrieved from https://www.pewresearch.org/fact-tank/2019/04/10/share-of-u-s-adults-using-social-media-including-facebook-is-mostly-unchanged-since-2018/

Rozgonjuk, D., & Elhai, J. D. (2019). Emotion regulation in relation to smartphone use: Process smartphone use mediates the association between expressive suppression and problematic smartphone use. *Current Psychology*. https://doi.org/10.1007/s12144-019-00271-4

Schimmenti, A., Passanisi, A., Caretti, V., La Marca, L., Granieri, A., Iacolino, C., et al. (2017). Traumatic experiences, alexithymia, and internet addiction symptoms among late adolescents: A moderated mediation analysis. *Addictive Behaviors, 64*, 314–320.

Schreiber, L. R., Grant, J. E., & Odlaug, B. L. (2012). Emotion regulation and impulsivity in young adults. *Journal of psychiatric research*, *46*(5), 651-658.

Shields, A., & Cicchetti, D. (2001). Parental maltreatment and emotion dysregulation as risk factors for bullying and victimization in middle childhood. *Journal of clinical child psychology*, *30*(3), 349–363. https://doi.org/10.1207/S15374424JCCP3003_7

Sibley, C. G., Fischer, R., & Liu, J. H. (2005). Reliability and validity of the revised experiences in close relationships (ECR-R) self-report measure of adult romantic attachment. *Personality & social psychology bulletin*, *31*(11), 1524–1536. https://doi.org/10.1177/0146167205276865

Sisi, Q., Jinfeng, Z., Lili, W., & Jianxin, Z. (2021). Attachment styles, self-esteem, flexible goal adjustment, and intimate relationship satisfaction in women: A moderated mediation model. *The Journal of Psychology: Interdisciplinary and Applied*, http://dx.doi.org/10.1080/00223980.2021.1896463

Srivastava, S., & Beer, J. S. (2005). How self-evaluations relate to being liked by others: integrating sociometer and attachment perspectives. *Journal of personality and social psychology*, *89*(6), 966–977. https://doi.org/10.1037/0022-3514.89.6.966

Staples, A. M., & Mohlman, J. (2012). Psychometric properties of the GAD-Q-IV and DERS in older, community-dwelling GAD patients and controls. *Journal of Anxiety Disorders*, *26*(3), 385-392.

Statista. (2021a, January 27). *Instagram Stories daily active users 2019*. Statista. https://www.statista.com/statistics/730315/instagram-stories-dau/.

Statista. (2021b, January 27). *Twitter: monthly active users worldwide*. Statista. https://www.statista.com/statistics/282087/number-of-monthly-active-twitter-users/.

Statista. (2021c, March 19). *Distribution of Facebook users worldwide as of January 2021, by age and gender*. Statista. https://www.statista.com/statistics/376128/facebook-global-user-age-distribution/.

Statista. (2021d, April 15). *U.S. TikTok users by age 2021*. Statista. https://www.statista.com/statistics/1095186/tiktok-us-users-age/.

Statista. (2021e, May 21). *Number of monthly active Facebook users worldwide as of 1st quarter 2021 (in millions)*. Statista. https://www.statista.com/statistics/264810/number-of-monthly-active-facebook-users-worldwide/.

Thompson, R. A. (1991). Emotional regulation and emotional development. *Educational Psychology Review*, *3*(4), 269–307. https://doi.org/10.1007/BF01319934

Tokunaga, R. S. (2011). Social networking site or social surveillance site? understanding the use of interpersonal electronic surveillance in romantic relationships. *Computers in Human Behavior*, *27*(2), 705-713. https://doi.org/10.1016/j.chb.2010.08.014

Twenge, J. M., Spitzberg, B. H., & Campbell, W. K. (2019). Less in-person social interaction with peers among U.S. adolescents in the 21st century and links to loneliness. *Journal of Social and Personal Relationships*, *36*(6), 1892–1913. https://doi.org/10.1177/0265407519836170

Valkenburg, P. M., Peter, J., & Walther, J. B. (2016). Media effects: Theory and research. *Annual Review of Psychology*, *67*, 315–338. https://doi.org/10.1146/annurev-psych-122414-033608

Vannucci, A., Flannery, K. M., & Ohannessian, C. M. (2017). Social media use and anxiety in emerging adults. *Journal of Affective Disorders*, *207*, 163-166. http://dx.doi.org.ezproxy.rit.edu/10.1016/j.jad.2016.08.040

Vogel, E. A., Rose, J. P., Roberts, L. R., & Eckles, K. (2014). Social comparison, social media, and self-esteem. *Psychology of Popular Media Culture*, *3*(4), 206–222. https://doi.org/10.1037/ppm0000047

Wang, Z., Tchernev, J. M., & Solloway, T. (2012). A dynamic longitudinal examination of social media use, needs, and gratifications among college students. *Computers in Human Behavior*, *28*(5), 1829-1839. https://doi.org/10.1016/j.chb.2012.05.001

Wongpakaran, T., Wongpakaran, N., & Wedding, D. (2012). Gender differences, attachment styles, self-esteem and romantic relationships in Thailand. *International Journal of Intercultural Relations*, *36*(3), 409-417. http://dx.doi.org/10.1016/j.ijintrel.2011.12.001

Worsley, J. D., McIntyre, J. C., Bentall, R. P., & Corcoran, R. (2018). Childhood maltreatment and problematic social media use: The role of attachment and depression. *Psychiatry research*, *267*, 88–93. https://doi.org/10.1016/j.psychres.2018.05.023

Yaakobi, E., & Goldenberg, J. (2014). Social relationships and information dissemination in virtual social network systems: An attachment theory perspective. *Computers in Human Behavior*, *38*, 127-135. http://dx.doi.org.ezproxy.rit.edu/10.1016/j.chb.2014.05.025

Yildiz, M. A. (2017). Emotion regulation strategies as predictors of internet addiction and smartphone addiction in adolescents. *Journal of Educational Sciences and Psychology*, *7*, 66–78.

Zhao, X., Zhang, R., & Zheng, K. (2014). Gender differences in emotion regulation strategies in adolescents. *Chinese Journal of Clinical Psychology*, *22*(5), 849-854. https://ezproxy.rit.edu/login?url=https://www.proquest.com/scholarly-journals/gender-differences-emotion-regulation-strategies/docview/1660464010/se-2?accountid=108

Zimmermann, P., & Iwanski, A. (2014). Emotion regulation from early adolescence to emerging adulthood and middle adulthood: Age differences, gender differences, and emotion-specific developmental variations. *International Journal of Behavioral Development, 38*(2), 182-194. http://dx.doi.org/10.1177/0165025413515405

Figure 1.

Most Comfortable Social Media Platforms for Posting Personal Content (N=158)

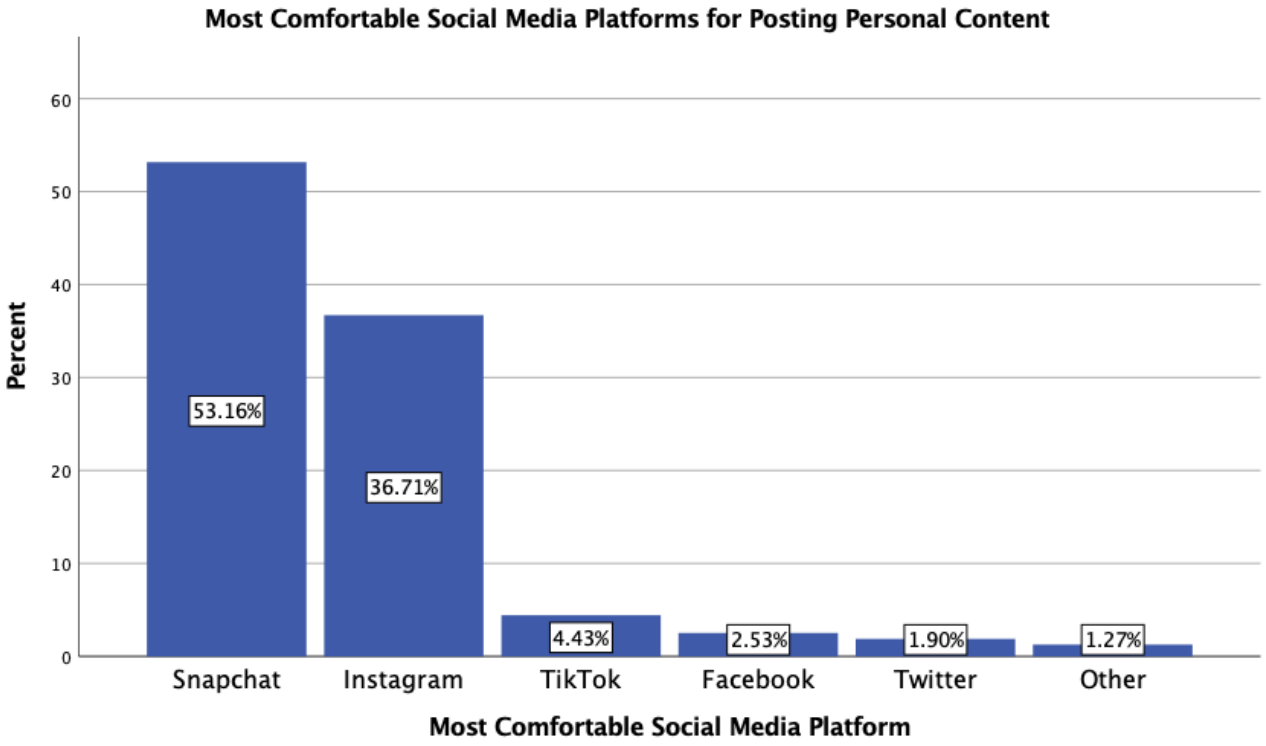


Figure 2.

Least Comfortable Social Media Platforms for Posting Personal Content (N=158)

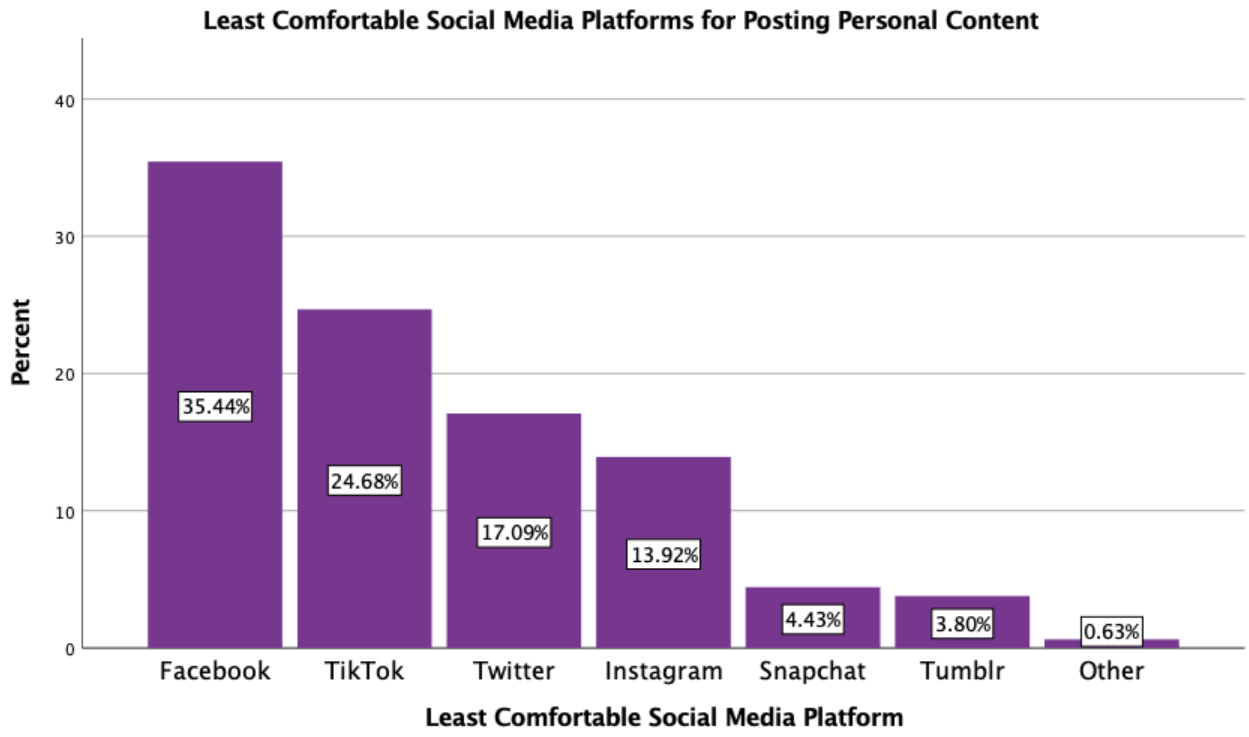


Figure 3.

Parallel Mediation Model for the Relationship between Attachment Anxiety and PSMU through Emotion Regulation Difficulties and Social Surveillance

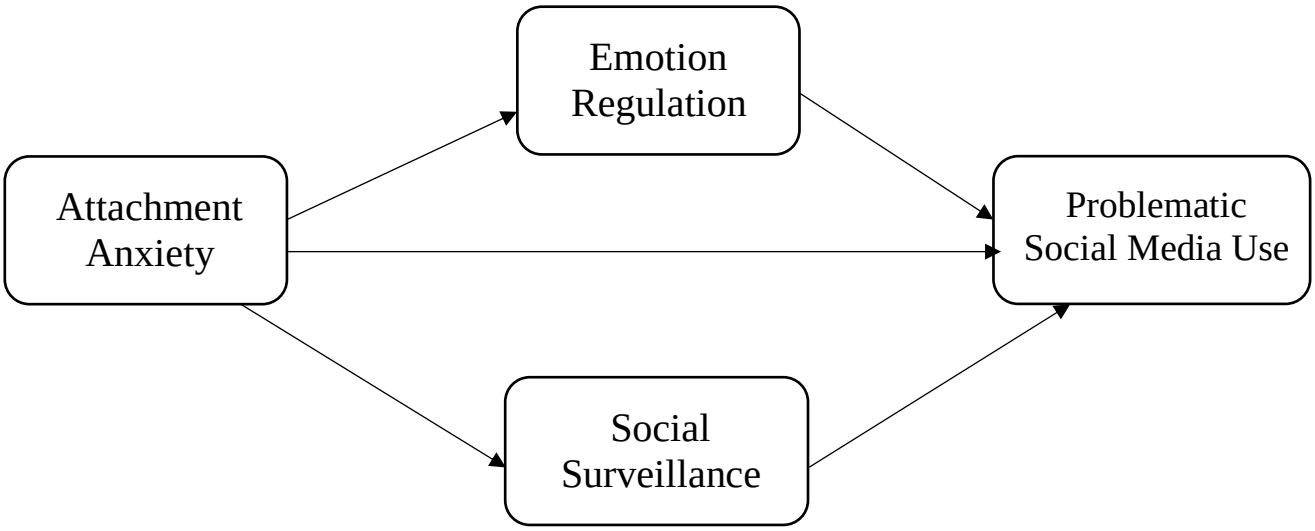
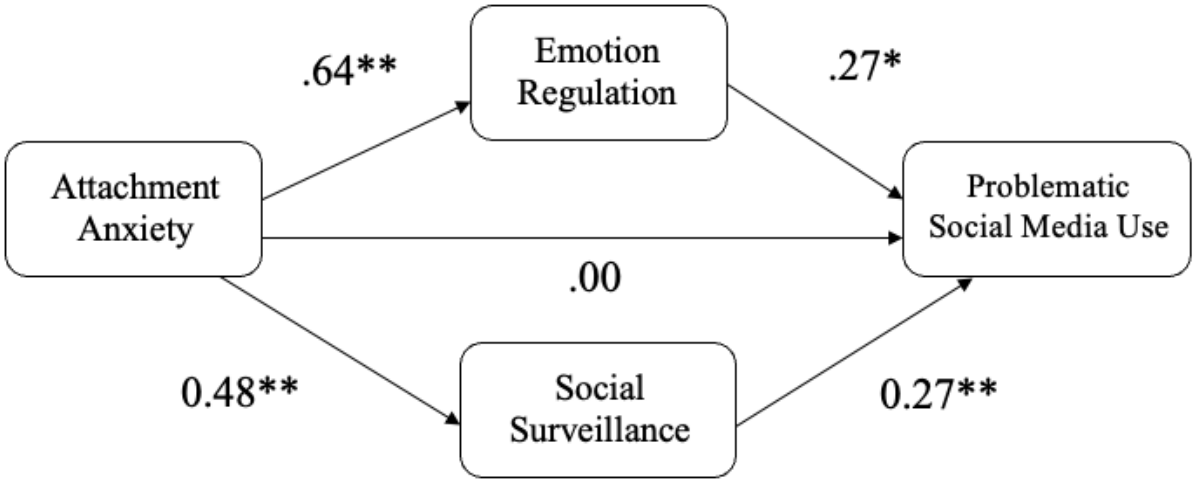


Figure 4.

Standardized Regression Coefficients for Mediation Model 1 through Emotion Regulation Difficulties and Social Surveillance (N=158)

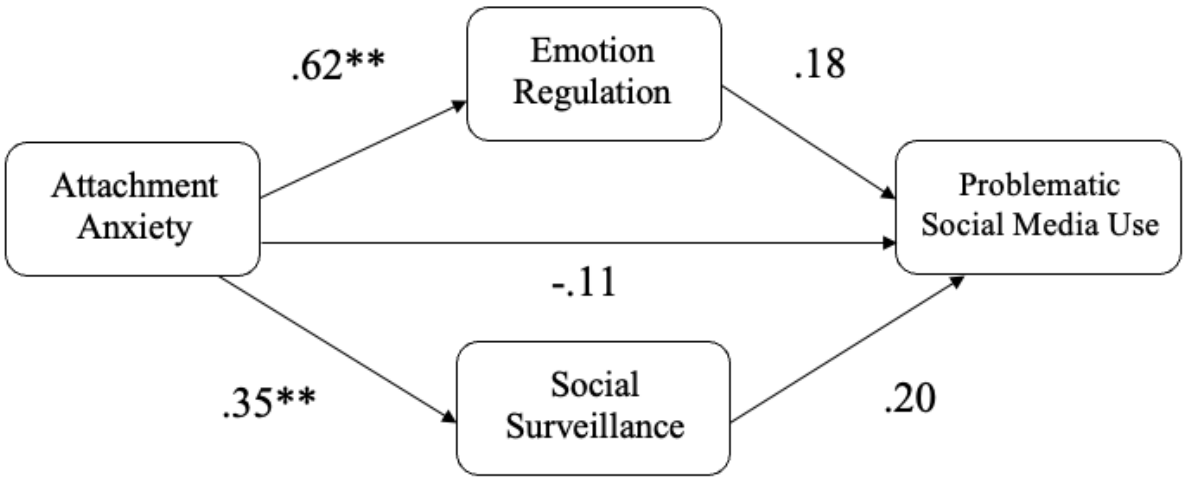


Note. Attachment avoidance was included as a covariate.

*p < .01, ** p < .001

Figure 5.

Standardized Regression Coefficients for Mediation Model 2 through Emotion Regulation Difficulties and Social Surveillance (N=76)



Note. Attachment avoidance and behavioral screen time were included as covariates.

**p < .001

Table 1.

Bivariate Correlations of Main Study Variables (N=158)

	DERS	IESS	Anxiety	Avoidance	BSMAS
DERS	--				
IESS	.32**	--			
Anxiety ECR-R	.66**	.42**	--		
Avoidance ECR-R	.29**	.01	.39**	--	
BSMAS	.35**	.35**	.29**	.08	--
Age	-.02	.01	.01	.01	.01

Note. DERS, Difficulties in Emotion Regulation Scale; IESS, Interpersonal Electronic Surveillance Scale; Anxiety ECR-R, Anxiety subscale of Experiences in Close Relationships – Revised; Avoidance ECR-R, Avoidance subscale of Experiences in Close Relationships – Revised; BSMAS, Bergen Social Media Addiction Scale.

** $p < .01$

Table 2.

Bivariate Correlations of Main Study Variables with Screen Time Subset (N=76)

	DERS	IESS	Anxiety	Avoidance	BSMAS	Screen Time
DERS	--					
IESS	.32**	--				
Anxiety ECR-R	.66**	.42**	--			
Avoidance ECR-R	.29**	.01	.39**	--		
BSMAS	.35**	.35**	.29**	.08	--	
Age	-.02	.01	.01	.01	.01	-.29*
Screen Time	-.05	-.03	-.04	-.12	.20	--

Note. DERS, Difficulties in Emotion Regulation Scale; IESS, Interpersonal Electronic Surveillance Scale; Anxiety ECR-R, Anxiety subscale of Experiences in Close Relationships – Revised; Avoidance ECR-R, Avoidance subscale of Experiences in Close Relationships – Revised; BSMAS, Bergen Social Media Addiction Scale.

*$p < .05$, ** $p < .01$

Table 3.

Descriptive Statistics of Main Study Variables for Part 1 Participants (N=158)

	M	*SD*	Range
Emotion Regulation (DERS)	89.18	4.48	38.00 – 153.00
Social Surveillance (IESS)	30.82	9.15	12.00 – 60.00
Attachment Anxiety (ECR-R)	3.16	1.26	1.00 – 6.44
Attachment Avoidance (ECR-R)	2.51	1.02	1.00 – 6.44
Problematic Social Media Use (BSMAS)	15.73	4.48	6.00 – 29.00

Note. DERS, Difficulties in Emotion Regulation Scale; IESS, Interpersonal Electronic Surveillance Scale; Attachment Anxiety ECR-R, Anxiety subscale of Experiences in Close Relationships – Revised; Attachment Avoidance ECR-R, Avoidance subscale of Experiences in Close Relationships – Revised; BSMAS, Bergen Social Media Addiction Scale.

Table 4.

Descriptive Statistics of Main Study Variables for Part 2 Participants (N=76)

	M	*SD*	Range
Emotion Regulation (DERS)	90.97	23.21	48.00 – 153.00
Social Surveillance (IESS)	31.29	8.61	18.00 – 55.00
Attachment Anxiety (ECR-R)	3.31	1.24	1.06 – 6.44
Attachment Avoidance (ECR-R)	2.52	0.88	1.00 – 4.78
Problematic Social Media Use (BSMAS)	16.25	4.31	6.00 – 27.00

Note. DERS, Difficulties in Emotion Regulation Scale; IESS, Interpersonal Electronic Surveillance Scale; Attachment Anxiety ECR-R, Anxiety subscale of Experiences in Close Relationships – Revised; Attachment Avoidance ECR-R, Avoidance subscale of Experiences in Close Relationships – Revised; BSMAS, Bergen Social Media Addiction Scale.

Table 5.

Descriptive Statistics of Weekly Mean Time Spent on Social Media (N=76)

	M	*SD*	Range
Total Time Spent	15:20	11:07	0:00 – 57:40
TikTok	5:18	6:19	0:00 – 26:06
Instagram	4:42	5:26	0:00 – 35:34
Snapchat	3:55	4:35	0:00 – 22:06
Facebook	0:43	4:17	0:00 – 37:14
Twitter	0:19	0:50	0:00 – 4:52

Note. Total Time Spent is indicative of all the platforms combined for a week. Results shown are in hours and minutes (hh:mm).

Table 6.

Model 1 Coefficients for PSMU and Predictors, Covariates, and Mediators (N=158)

	Consequent variable					
	Emotion regulation (M_1)		Social Surveillance (M_2)		Problematic Social Media Use (Y)	
Antecedent variable	β	*SE*	β	*SE*	β	*SE*
Constant	47.32	4.69	23.67	2.06	7.37	1.59
Attachment anxiety (X)	.64***	1.29	.48***	.57	.00	.38
Emotion regulation (M_1)	--	--	--	--	.27**	.02
Social Surveillance (M_2)	--	--	--	--	.27***	.04
Attachment avoidance (C_1)	.04	1.59	-.18*	.70	.00	.35
	R^2 = .43, F(2, 155) = 58.42, p < .001		R^2 = .20, F(2, 155) = 19.28, p < .001		R^2 = .19, F(4, 153) = 8.84, p < .001	

*p < .05, **p < .01, ***p < .001

Table 7.

Model 2 Coefficients for PSMU and Predictors, Covariates, and Mediators (N=76)

	Consequent variable					
	Emotion regulation (M_1)		Social Surveillance (M_2)		Problematic Social Media Use (Y)	
Antecedent variable	β	*SE*	β	*SE*	β	*SE*
Constant	46.66	7.89	29.85	3.70	7.08	2.75
Attachment anxiety (X)	.62***	1.80	.35**	.79	-.11	.53
Emotion regulation (M_1)	--	--	--	--	.18	.03
Social Surveillance (M_2)	--	--	--	--	.20	.06
Attachment avoidance (C_1)	.10	2.60	-.239*	1.22	0.19	.63
Behavioral Screen Time (C_2)	-.02	.00	-.05	.00	0.24*	.00
	R^2 = .44, F(3, 72) = 19.07, p < .001		R^2 = .11, F(3, 72) = 3.03, p < 0.05		R^2 = .15, F(5, 70) = 2.56, p < .05	

*p < .05, **p < .01, ***p < .001