The Journal of Social Media in Society
Fall 2023, Vol. 12, No. 2, Page 126-143
thejsms.org

Social Media and Anxiety

Vincent Jeevar, Syndey Reif, and Megan Bliesener
Department of Psychological Science, Northern Michigan University, Marquette, MI

The current study was conducted using 47 students over 14 days with participants split into two groups. In the first week, one group was directed to continue using social media and news applications (SMNA), and the second asked to stop. The roles were switched in the second week. The findings showed a statistically significant relationship between SMNA use and self-reported levels of anxiety. Not only were these results significant, but the results showed an anxiety reduction was almost immediate upon cessation of SMNA use.

Keywords: Social media, news applications, anxiety, sleep.

The current study was conducted to understand the current relationship between social media and news apps (SMNA), and anxiety. SMNA has become commonplace in society, with 72% of Americans using social media to connect, engage with news, share information, or for entertainment (Pew Research, 2021). This trend has increased due to the rise of the COVID-19 pandemic which held the world at a standstill for more than a year. Data analytics company, Kantar researched the social media use of 25,000 people around the world and found the 18-34 age group showed the biggest increase in social media usage, with WhatsApp, Facebook, and Instagram all showing a 40%+ increase in usage (*COVID-19 Barometer: Consumer attitudes, media habits and expectations,* 2020).

Social media allows people to connect with peers in ways previously not possible, allowing them to find support that may not have been available in the past. However, there has also been a rise in a difficult-to-define phenomenon, social media addiction; as well as increasing reports of anxiety and depression among adolescents (Bányai et al., 2017; Li et al., 2017). Constant access to the lives of others using social media, and a consistent, overwhelming media cycle influences thoughts and beliefs and is, therefore, a factor in overall well-being.

There are positives to social media, and social media use is known to increase feelings of well-being and contentment with life. Kim and Kim (2017) found the increase in social capital that came with social media use increased students' perception of contentment and well-being. Social media allows for higher quantity, but lower quality social connections with fewer interactions resulting in true supportive help in difficult times. The key to success is balance, and while social media can be beneficial to many teens, recent research highlights the dangers of social media addiction, or more generally, internet addiction (Kim & Kim, 2017).

The current study examined the correlation between the use of SMNA. Based on the wealth of previous research, we hypothesized that social media and news application use would correlate with self-reported feelings of anxiety, and asked participants to abstain from SMNA for one week to answer the question:

R1: Does SMNA use correlate with self-reported feelings of anxiety?

Social media fatigue (SMF). defined as "high levels of information overload experienced due to extensive usage of social media" can result in declining academic performance, work and professional life, feelings of distress and exhaustion, and reduced general well-being and emotional health (Sunil et al., 2022). SMF is characterized by emotional fatigue, anxiety, depression, and reduced cognitive state (Hattingh et al., 2022).

LITERATURE REVIEW

Problematic Social Media Use

Internet and social media addiction is characterized by problematic internet use. This could be the result of excessive time spent on social networking sites, the content viewed, or both. Bettmann et al. (2020) defined social media use as problematic when behaviors become compulsive, obsessive, and dependent, and the individual experiences withdrawal-like symptoms when social media is inaccessible. Stockdale and Coyne (2020) found a correlation between the use of social media to reduce boredom and problematic internet use. Research has also shown some characteristics, such as the self-esteem of adolescents put them at a greater risk of excessive social media use (Bányai et al., 2017). Twenge et al. (2019) report a significant increase in the amount of time high school-aged students spent online and on social media between 2006 and 2016. In 2006 teenagers were

spending on average an hour a day on the internet, by 2016 adolescents reported between a 78% and 100% increase. Teenagers have effectively doubled the amount of time they are spending online. In addition to a time increase, Twenge et al. (2019) saw an increase in the times teenagers visited social media. In 2008 52% of high school participants reported visiting social media "almost" daily, and by 2016 82% of teenagers reported using social media daily.

Twenge (2020) found that between 2011 and 2018 screen time contributed to the declining well-being of adolescents. The correlation between technology use and lower well-being could be associated with reduced sleep. The demands on adolescents today are no lower than in the past, but with most adolescents spending 4 or more hours on devices each day, there is less time to complete all the work needed for school and other responsibilities.

RemedyLive is an organization offering support to students in middle and high school around the United States. Research conducted by RemedyLive (2020), supported the finding of Twenge (2020) and found that 65.8% of 3032 respondents reported 7 or fewer hours of sleep a night, and 6 out of 10 respondents reported using a mobile phone or tablet for 4 hours or more each day, with more than 4 out of 10 reporting 5 or more hours of use each day. Sleep is a major factor, with the importance of sleep well-documented, with Hale et al. (2018) stating "In a recent literature review, 90% of included studies found an association between screen media use and delayed bedtime and/or decreased total sleep time." The relationship between anxiety and poor sleep or sleep deprivation is well-documented (Goldstein et al., 2013; McMakin & Alfano, 2015).

RemedyLive (2020) also reported the top stressor (14.34%) of the 767 students responding was body image or self-esteem, although social media ranked last at only 0.97%. It is interesting to note that 45.21% of 2236 students stated that screen time did affect mental health. There is an argument that the RemedyLive data and the wealth of research conducted suggest students are unable to connect the dots between social media use and the challenges faced. Although many students realize the negative effects that social media has on mental health, behaviors are not changing to mitigate the increasing rates of teen anxiety and depression cases.

In a study of 467 Scottish students ages 11-17 years old Woods and Scott (2016), 97% of the students used social media, with 47% of the participants labeled as anxious, and 21% labeled with depression. Overall, the study found the more emotional investment participants had in social media accounts, the more likely it became that an adolescent would experience anxiety and depression. The study suggests that if an adolescent views social media as an important part of life and uses social media daily, it could correlate to adverse effects.

Furthermore, an observational study conducted by Banjanin et al. (2015) using 336 high school students in Belgrade, Serbia found a positive correlation between internet addiction and increased depression symptoms. Also, there was no difference between males and females and gender did not play a factor. This study supports that increased internet use and social media created a significant difference in an adolescent's well-being.

Anxiety

During the COVID pandemic students could not attend school, and where possible, completed work remotely. Arend et al. (2021) reported increased amounts of internet use, and more broadly, screen time generally amongst a wide portion of participants. Most people reported spending much of the increased screen time watching television and browsing social media; followed closely by news consumption. In the past 15 years, time spent online has increased, with researchers speculating the increase may be a contributing factor to the rising rates of anxiety reported by adolescents (Arend et al., 2021).

The increasing number of students experiencing anxiety continues into college. The Association for University and College Counseling Center Directors (AUCCCD) report compiled data from July 2018 to June 2019 including results from 562 counseling center directors, and over 155,000 students from colleges and universities nationwide. Of the institutions responding, 43.9% had gained staff positions, for a total of 325.4 gained positions, while there were only 22 positions lost. The mean expense for counseling center salaries across 298 responding institutions was $1,035,895 putting the cost in the hundreds of millions of dollars (LeViness et al., 2019). However, the cost of not providing these services may be even greater. 66.2% of students using counseling services stated the services helped them with academic performance, and 62.3% stated the services helped

them stay in school. Even with additional positions, the situation is declining, and the AUCCID report states that 87.3% of directors reported an increase in demand during the year with a 12.2% increase between 2018 and 2019. There is a crisis concerning the mental health of young adults in the United States, with anxiety (60.7%), depression (48.6%), and stress (47%) being the most prevalent mental health struggles for college students using counseling services (LeViness et al., 2019).

Digital Media

Social media is not the only real estate in the "cyber world" fighting for the attention of society, and it is important to recognize the increasing influence of news websites over the last decade. Increasing political tensions, questions about the state of the world, social justice, and a global pandemic dominated the news cycle in 2020. Arend et al. (2021) reported that accessing the news was one of the top three ways people were spending time online. Kormelink and Meijer (2019) studied the way people engage in the news they consume and argued there is no linear association between time spent looking at media sites and the interest a person has in those sites, people spend time viewing material they have no interest in. Understanding the way people engage with SMNA can help researchers understand exactly what relationship many people have with media; why it can be overwhelming, and how it can increase anxiety.

In recent years there has been a shift in the way many people receive information, with social media users moving from news sites to following news outlets on social media. Heading to social media, rather than a news outlet website to find breaking news is now the norm. As Barnidge (2015) explains, "In simpler terms, social media exposes people to more information from more sources than they would otherwise be exposed to." Barnidge looked at the ways news has promoted political disagreement on social media and found there was greater disagreement between those who engaged with news sources and those who spent a substantial amount of time on social media platforms. With increasing numbers of people spending more time on both social media and news platforms, the potential for conflict increases (Barnidge, 2015). News and social media interact in such a way that it is possible to keep up to date on current events without ever having to visit a dedicated news site, consolidating information considered important by the majority, or, from a more cynical perspective, determined by the platform owners through algorithms.

A Venn diagram of news content, public opinion, and platform owner is now, for all intents and purposes, very close to one single circle. The current system adds to anxiety in those who are using social media to find information, and users of news applications are easily influenced by opinions rather than facts. This can lead to conflict and mistrust, causing more anxiety than social media alone.

Traditionally, watching the news on television or reading a newspaper has been a relaxing experience. In contrast, digital media is a quick, condensed, and intense experience with eye-catching headlines, often loosely connected to the story they promote. Although not a scientific resource, the best contemporary demonstration of how the news has changed in nature and purpose is in the movie, Anchorman 2. News networks have shifted from deliverers of information to attention-hungry performances. Society is spending more time looking at digital news; it is efficient and has broadened most people's access to multiple news platforms. However, Kormelink and Meijer (2019) assert digital news is similar to social media in that there is an addictive quality to the constant scrolling and the ability to view updated news every couple of minutes. Of course, basic classical conditioning presents parallels between a social media user and the little red notification of a "like" or "thumbs-up", and Pavlov's dogs and a bell.

Kramer et al. (2014) conducted a controversial study in which Facebook manipulated timelines to reduce positive content, finding that people exposed to more negative content on social media were contagious in sharing negative content. Unfortunately, there are rewards for viral negativity, and Bellovary et al. (2021) found that negative news stories are more likely to see increased engagement than positive news stories. This was supported by Rathje et al., (2021) who conducted a study of over two million tweets from US politicians or news outlets and found a 67% increase in sharing if the tweet mentioned a political opponent. The inference of these studies is that negativity is contagious, and results in the sharing of negative views of the world with others. This presents the potential for a downward spiral in the mental well-being of users, in which users not only show lower mental well-being, but they are also more likely to share negative content with others.

When viewing this information through the eyes of a pandemic world with lockdowns in place, it is understandable why more people are spending more time online.

For many, the ability to connect to work, school, and loved ones has been an excellent way to cope with the stressors of today's world. However, much of the available literature points to a connection between increased general media use and a lower state of well-being and explains why many studies are now pointing to an increase in mental health issues due to the implementation of lockdowns and social distancing.

METHODS

Participants

Upon IRB approval from Northern Michigan University, participants were recruited and randomly divided into one of two groups. Participants were required to meet the required conditions to qualify for the study: Be a college student (either undergrad or graduate), be at least 18 years old, and have an active mobile phone number. Recruitment was conducted through university channels, and externally (ironically), through the social media accounts of the researchers. The only personally identifiable information the researchers asked for was the phone number for communication purposes only. Based on these criteria 47 participants were included in this study. Participants were not compensated for taking part in this study, and their levels of SMNA use before the study were not known. Over two weeks, five participants dropped out of the study or stopped responding to messages, and any data gathered from these participants was not used.

It was understood by the researchers that participants who had been asked to refrain from SMNA may continue to use them, most commonly as a result of fear of missing out, derived from fear of exclusion and a need for acceptance (Alabri, 2022). This could be seen as a limitation, but this was usable data demonstrating the reluctance people have to give up this content. Participants were informed they could answer or decline to answer any questions without pressure or coercion.

Procedure

Participants selected to participate were randomly assigned to one of two groups and was conducted in the spring of 2021. In the first week, Group A was asked to continue their normal use of SMNA. Group B was asked to remove, or at least not use, social media or news apps. Both groups were asked to respond to two text messages per day for two weeks asking whether social media or news apps have been used, and a self-report on

feelings of anxiety. In the second week, Group A was asked to remove or not use social media and news applications, while Group B was asked to use their applications as normal.

During each of the 14 days of the study, participants were sent two text messages using a mass texting service. The messages sent were a) Did you use social media or news applications today? and b) Rate your anxiety level today from 1-10. A crossover design was used as this enabled us to use one week of data with no change (Group B, week 1), one week of data with no SMNA (Group A, week 1 and Group B, week 2), and a return to being able to use SMNA (Group A, week 2).

Levels of anxiety were reported using a scale from 1 to 10; one was not at all anxious, and 10 was feeling extremely anxious. Anxiety scores were then averaged on each day, regardless of the group to which they were assigned. The procedure was repeated for the second week of the study with Group A being asked to abstain from SMNA use, and Group B being advised they could return to normal SMNA use.

Statistical results were compiled using SPSS for calculations, statistical tests, and descriptive statistics. This study was conducted to determine the effect of social media usage on self-reported levels of anxiety and used a One-Way Paired-Samples t-test. This measured self-reported levels of anxiety and SMNA use between two groups over the two weeks. Group A during week one was allowed to use social media as they wished, and Group B during week one was not allowed to use social media. During the second week, Group A was not allowed to use SMNA, and Group B was allowed to use SMNA. Not all subjects followed these specified guidelines, which likely influenced the results, although it is not possible to know exactly how the results were influenced due to the anonymity of participants.

This study used paired samples t-tests to find out if the data from the responses were statistically significant in terms of comparison. The purpose of a paired samples t-test is to find whether there is a difference in the groups. The null hypothesis for each t-test conducted stated there would be no difference in results for that specific variable between the two levels of independent variables, which mostly consist of SMNA use and no SMNA use, whereas the alternative hypothesis stated there would be a difference in results for that specific variable between social media usage and no social media usage. If

the null hypothesis failed to be rejected, the findings would not have been considered statistically significant, meaning there was no reasonable evidence to state there was a difference in results for that specific variable between the two levels of independent variables. If the null hypothesis is rejected, the findings would have been considered statistically significant, meaning there was reasonable evidence to state a difference in results exists for that specific variable between the two levels of independent variables.

RESULTS

Throughout this two-week study, participants abstaining from SMNA showed lower levels of anxiety compared to those who used SMNA, as shown in Table 1. These results were consistent and supportive of past findings from other researchers correlating anxiety and the amount of SMNA use (Arend et al., 2021; Valkenburg, 2022). Anxiety levels fluctuated from day to day, but those who used social media consistently reported much higher levels of anxiety. During this study, three findings became clear. First, many participants found it particularly difficult to stop or give up SMNA when they were instructed to do so. Second, as the study progressed, some participants decided to continue abstaining from SMNA, even after they were free to access these platforms again. Finally, the average levels of anxiety for those who used SMNA and for those who chose to refrain were inverse for most of the study. These trends reinforce previous findings concerning how young people interact with social media.

Table 1

Paired samples.

	Mean	N	Std. Dev	Std. Error Mean
Anxiety Rating No SMNA	3.013	231	2.05253	0.13505
Anxiety Rating SMNA	3.6623	231	2.41342	0.15879

Results using a paired-samples t-test (Table 2) determined the mean of anxiety ratings for no SMNA use (M=3.013) is significantly statistically different than the mean of anxiety ratings for social media usage (M=3.6623), as the p-value is smaller than .05 as

p=.003. It can be determined the anxiety ratings are much higher for the participants who used social media than for the participants who did not use social media during this study.

Table 2

Paired samples effect sizes.

	Mean	N	Std. Dev	Std. Error Mean
Anxiety Rating No SMNA	3.013	231	2.05253	0.13505
Anxiety Rating SMNA	3.6623	231	2.41342	0.15879

Figure 1 shows the average levels of self-reported anxiety levels among participants over the two-week study.

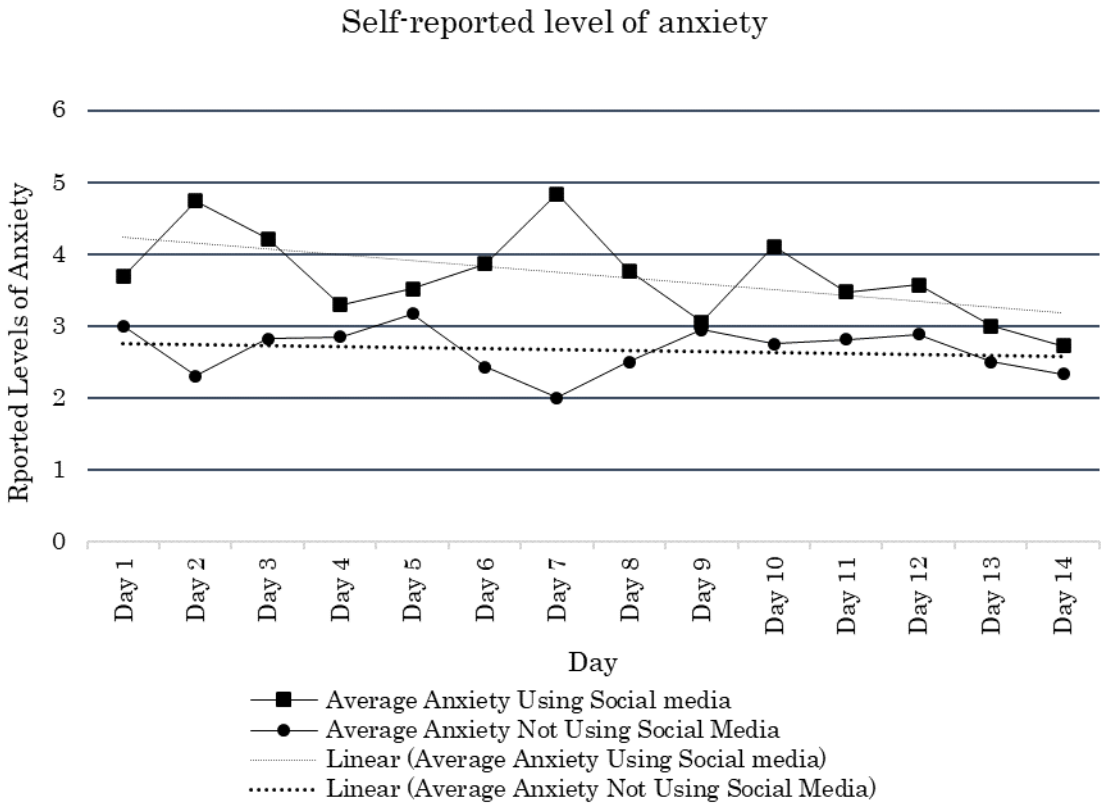

Figure 1. *Self-reported level of anxiety.*

DISCUSSION

At the beginning of this study, some participants found it challenging to stop using SMNA. This was expected given the amount of time a typical student spends browsing and engaging with social media. On the first day, only a few participants reported not using social media. While the exact reasons this occurred are unknown, it might argued that changing or removing a habit is particularly difficult at first. This speaks to how integral the use of SMNA has become in everyday life with habit, rather than purpose being a driver of usage (Hossain, 2019). It is not known how much time each participant in the study spent on social media and this might be a factor in how difficult the participant found it to be giving up SMNA use. However, given the number of people who did use SMNA, regardless of their assigned group, it seems likely that many participants accessed SMNA simply because it is a habitual behavior, as found by Gan et al. (2017).

As the study progressed, more participants reported not using social media, although for some it was apparent this task was a difficult one to remember. Many participants switched between using social media and abstaining. With some participants finding it difficult to abstain from SMNA use, self-reported levels of anxiety shed light on how the effects of SMNA can affect anxiety levels daily. Based on the results, we found that anxiety can increase with one day of social media use; for one participant anxiety levels consistently varied by up to a seven-point change on a day-to-day basis dependent on SMNA use. Our study shows that SMNA does not only cause an increase in anxiety over the long term, but the use of social media can influence anxiety levels from day to day and it is possible to reduce some anxiety with an almost immediate effect. This, we believe, is the most important finding in this study.

However, many participants chose to continue refraining from social media even when they were allowed to access it. This group represents a small number of the total participants; however, this small group presents some of the lowest levels of anxiety in the study. It is encouraging to note that the longer these participants refrained from social media the lower levels of anxiety they reported. As a self-reported study, there is potential for participants to have accessed SMNA on the days they were most anxious to cope with anxiety, and less anxious participants may have been less inclined to use SMNA.

It is difficult to determine why these participants decided not to use social media for the entirety of the study. For some participants, it could be they simply did not use SMNA very often, and due to having less habitual use this would make it easier to avoid SMNA use (Gan et al., 2017). While this seems like the most likely reason there is also the possibility the Hawthorne effect was a factor. Having been prompted to monitor SMNA use, participants were more mindful and had an opportunity to reflect on social media use which could influence participants' use of these platforms. Regardless of the reason, participants who chose not to access social media for longer periods saw the lowest and most consistent levels of anxiety. Although measuring lower levels of anxiety was the primary focus of this study, the consistency of lower levels of anxiety is important to note. As noted previously, people with lower levels of anxiety are more likely to have higher self-esteem and greater emotional control, compared to those with higher levels of anxiety. It is important to note that participants who abstained from social media for most of the study only used social media for the first two days. Our study suggests even a short amount of time without social media can be helpful with a reduction in anxiety increasing the with less time spent on social media.

Current research, along with this study, suggests that SMNA increases feelings of anxiety, leading to other concerns, including a reduced sense of self-esteem. These findings are particularly interesting given the constant connection young people have with social media. It is one thing to recognize a problem exists, it is a completely different task to create a solution. The problem of excessive SMNA use and resulting increased levels of anxiety is a complex and deeply personal matter to resolve. Data from RemedyLive (2020) suggested young people often feel overwhelmed by social media use, implying adolescents and young adults are recognizing the negative effects of social media. Despite the recognition that excessive SMNA use may have negative effects, many teenagers report having trouble stepping away from social media or taking a break. This problem needs simple and easy-to-employ solutions to help students who feel overwhelmed and are potentially addicted to SMNA.

The problem arises that Social Media Use Disorder is not a recognized or diagnosable illness, making it difficult to pinpoint and treat. While there is no specific diagnosis addressing anxiety and depression related to SMNA, clinicians can use the

Social Media Use Disorder Scale (van den Eijnden et al., 2016) to help guide treatment plans. Both scales use basic Likert scale questions to determine how problematic social media use may be for a client. These questions often reach the root of the problem, asking questions about fears, addiction traits, and self-esteem; all of which are closely connected to problematic social media use. As with most mental disorders, the symptoms can often be noticed by those closest to the person experiencing them. SMNA-induced anxiety and depression are no different. While different scales, questionnaires, and tests can be helpful for clinicians; the biggest factor in whether social media is becoming problematic for a young adult is whether it negatively affects daily life. When social media begins to interfere with life it can be defined as problematic, and the data from RemedyLive (2020) presents a picture in which 60% of middle and high school students use screens for non-academic activities for four or more hours each day, and 47% of middle and high school students get six or fewer hours of sleep each night. Although not provable as a causational relationship, the demands on adolescents today are no lower than in the past, but with most adolescents spending 4 or more hours on devices each day, there is less time to complete all the work needed for school and other responsibilities. It does not take a great leap of logic to draw the inference that time sleeping is the primary activity sacrificed in favor of screen time activities.

Once social media use is defined as "problematic" it must be treated. Treating problematic social media use is a careful balance between removing harmful things from a daily schedule and demonstrating caution to avoid cutting off communication or creating isolation. This balance is difficult to strike, but research shows that depending on the child, there may be a way for social media to be a part of a daily routine while avoiding the harmful effects. According to Bettmann et al. (2020), some of the most valuable forms of treatment involve setting limits on the amount, type, or timing of social media platforms that an adolescent is allowed to access safely. By setting these limits clinicians can help young adults recognize the specific features of SMNA which are most problematic for a particular client. This form of treatment would continue to allow young people to engage with social media and create potentially helpful connections while limiting exposure to anxiety-inducing content. By setting limits on adolescent use of SMNA, it is possible to teach adolescents to engage with social media in healthy ways. Teaching these skills

would allow for treatment to have long-lasting effects and promote better mental health. The most restrictive form of treatment, involving total removal of SMNA would remove all harmful exposure and would remove all risk of engaging in harmful or anxiety-inducing content, but this may not be entirely feasible in the connected world society has created.

Implications for Future Research

Social media platforms and news applications are a part of life and have become interwoven into society in a way that suggests they will be around for some time to come. We recommend researchers continue to investigate the ways SMNA use can affect those who choose to use it with a focus on qualitative research. Clinicians must be aware of this large part of how SMNA interacts in the life of a young adult. This study showed a basic but important connection between social media use and anxiety, as well as how difficult it can be for some to refrain from social media, deeply understanding what causes these connections is important given the amount of time young people are spending on social media. Future research should not only research the connection between mental health issues and SMNA but should also explore the causes of this connection. A longitudinal study exploring the long-term decisions of participants could also provide insight into the long-term effects of participation, such as whether participants reduced their time using SMNA. Given the scope of this study, it is shown that a relationship between SMNA and increased anxiety exists, but it remains unknown why participants felt more anxious when they used SMNA. More research is needed to understand exactly what content on social media is connected to anxiety, as well as how best to create a social media platform that reduces the risk of experiencing anxiety. One approach future researchers might take would be the use of the Social Media Use Disorder Scale (van den Eijnden et al., 2016) to measure differences between participants in average self-reported anxiety levels. Social media is an integral way for adolescents and young adults to communicate with friends and form social connections, and understanding how to engage with these platforms while reducing risk is an important next step to take in this relatively new area of study.

Limitations

While the results of this study support much of the previous research's findings on this topic, there are limitations. First, the sample size used for this study is small compared to the sample sizes typically used in this type of study. The bulk of the sample

comprised a small group of college students at one university, which may make it difficult to generalize to other college students and the wider population. Secondly, given the self-reported nature of this study, it is difficult to know if everyone followed the instructions and if they were reporting honestly. This study also asked participants to report feelings of anxiety using a Likert scale, and while this is one of the best ways to collect these types of data, it is unknown how each participant may rate their level of anxiety. A confounding factor could be isolation during COVID-19, resulting in people being in quarantine, although this would more likely result in anxiety increases while not using SMNA. The study was completed after mandatory lockdowns had been removed. Finally, the short duration of the study does not provide data for the long-term effects of SMNA abstinence. Because of these limitations, future studies in this area could benefit from larger sample sizes from broader populations, asking participants more questions about how they are feeling, and for a longer duration. Using these techniques, researchers may be able to achieve a better idea of how SMNA use affects college students or a broader scope of the population in general.

Conclusion

There is a correlation between increased use of SMNA and increased levels of anxiety. Given that SMNA is so prevalent, more research is needed to investigate the long-term effects of SMNA-induced anxiety; in addition to the creation of effective coping strategies to help people manage increased anxiety. In closing, although the findings show SMNA and anxiety are closely related is not a surprise, the surprising finding was how soon levels of anxiety can increase and decrease based on SMNA use. Participants reported an almost immediate decrease in anxiety levels correlating with their abstaining from SMNA. This does suggest all is not lost, and the negative effects of SMNA can be reversed.

The next steps should include repeating the study with a larger number of participants from a broader demographic and using the Social Media Use Disorder Scale (van den Eijnden et al., 2016) before gathering data. Repeating the study under the same conditions now there is time between the original study being conducted sooner after COVID lockdown anxiety and a semblance of normalcy might also provide support for the results we found.

References

Alabri, A. (2022). Fear of missing out (FOMO): The effects of the need to belong, perceived centrality, and fear of social exclusion. *Human Behavior and Emerging Technologies.*

Andreassen, C. S., Pallesen, S., & Griffiths, M. D. (2017). The relationship between addictive use of social media, narcissism, and self-esteem: Findings from a large national survey. *Addictive Behaviors*, *64*, 287–293. https://doi.org/10.1016/j.addbeh.2016.03.006

Arend, A.-K., Blechert, J., Pannicke, B., & Reichenberger, J. (2021). Increased screen use on days with increased perceived COVID-19-related confinements - A day level ecological momentary assessment study. *Frontiers in Public Health*, *8*. https://doi.org/10.3389/fpubh.2020.623205

Barnidge, M. (2015). The role of news in promoting political disagreement on social media. *Computers in Human Behavior*, *52*, 211–218. https://doi.org/10.1016/j.chb.2015.06.011

Banjanin, N., Banjanin, N., Dimitrijevic, I., & Pantic, I. (2015). Relationship between internet use and depression: Focus on physiological mood oscillations, social networking and online addictive behavior. *Computers in Human Behavior*, *43*, 308–312. https://doi.org/10.1016/j.chb.2014.11.013

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). https://doi.org/10.1371/journal.pone.0169839

Bellovary, A., Young, N. A., & Goldenberg, A. (2021, February 24). Left- and right-leaning news organizations' negative tweets are more likely to be shared. https://doi.org/10.31234/osf.io/2er67

Bettmann, J. E., Anstadt, G., Casselman, B., & Ganesh, K. (2020). Young adult depression and anxiety linked to social media use: Assessment and treatment. *Clinical Social Work Journal*. https://doi.org/10.1007/s10615-020-00752-1

COVID-19 Barometer: Consumer attitudes, media habits and expectations. (2020, April 03). Retrieved from https://www.kantar.com/Inspiration/Coronavirus/COVID-19-Barometer-Consumer-attitudes-media-habits-and-expectations

Gan, C., Liang, X., & Yu, X. (2017). Continuance intention on mobile social networking service: examine the effects of habit and gratifications. *WHICEB.*

Goldstein, A. N., Greer, S. M., Saletin, J. M., Harvey, A. G., Nitschke, J. B., & Walker, M. P. (2013). Tired and apprehensive: Anxiety amplifies the impact of sleep loss on aversive brain anticipation. *Journal of Neuroscience, 33*(26), 10607-10615. doi:10.1523/jneurosci.5578-12.2013

Hale, L., Kirschen, G. W., LeBourgeois, M. K., Gradisar, M., Garrison, M. M., Montgomery-Downs, H., Kirschen, H., McHale, S. M., Chang, A. M., & Buxton, O. M. (2018). Youth screen media habits and sleep: Sleep-friendly screen behavior recommendations for clinicians, educators, and parents. *Child and adolescent psychiatric clinics of North America, 27*(2), 229–245. https://doi.org/10.1016/j.chc.2017.11.014

Hattingh, M.J., Dhir, A., Ractham, P., Ferraris, A., & Yahiaoui, D. (2022). Factors mediating social media-induced fear of missing out (FoMO) and social media

fatigue: A comparative study among Instagram and Snapchat users. *Technological Forecasting and Social Change.*

Hossain, M. (2019). Effects of uses and gratifications on social media use. *PSU Research Review, 3*(1), 16-28. https://doi.org/10.1108/prr-07-2018-0023

Kim, B., & Kim, Y. (2017). College students' social media use and communication network heterogeneity: Implications for social capital and subjective well-being. *Computers in Human Behavior*, *73*, 620–628. https://doi.org/10.1016/j.chb.2017.03.033

Kormelink, T., & Meijer, I. (2019). A user perspective on time spent: Temporal experiences of everyday news use. *Journalism Studies*, *21*(2), 271–286. https://doi.org/10.1080/1461670x.2019.1639538

Kramer, A. D., Guillory, J. E., & Hancock, J. T. (2014). Experimental evidence of massive-scale emotional contagion through social networks. *Proceedings of the National Academy of Sciences, 111*(24), 8788-8790. doi:10.1073/pnas.1320040111

LeViness, P., Gorman, K., Braun, L., Koenig, L., & Bershad, C. (2019). *The association for university and college counseling center directors annual survey*. Retrieved from https://www.aucccd.org/assets/documents/Survey/2019%20AUCCCD%20Survey-2020-05-31-PUBLIC.pdf20surveypublicapr26.pdf.

Li, J.-B., Lau, J. T., Mo, P. K., Su, X.-F., Tang, J., Qin, Z.-G., & Gross, D. L. (2017). Insomnia partially mediated the association between problematic Internet use and depression among secondary school students in China. *Journal of Behavioral Addictions*, *6*(4), 554–563. https://doi.org/10.1556/2006.6.2017.085

McMakin, D. L., & Alfano, C. A. (2015). Sleep and anxiety in late childhood and early adolescence. *Current opinion in psychiatry*, *28*(6), 483–489. https://doi.org/10.1097/YCO.0000000000000204

Pew Research Center. (2021, April 7). *Social Media Fact sheet.* Pew Research Center: Internet, Science & Tech. https://www.pewresearch.org/internet/fact-sheet/social-media/

Rathje, S., Van Bavel, J., & van der Linden, S. (2021). Out-group animosity drives engagement on social media. *Proceedings Of The National Academy Of Sciences*, *118*(26), e2024292118. doi: 10.1073/pnas.2024292118

RemedyLive (2020). *Get Schooled Tour*, Unpublished raw data.

Shafi, R. M. A., Nakonezny, P. A., Miller, K. A., Desai, J., Almorsy, A. G., Ligezka, A. N., Morath, B., Romanowicz, M., & Croarkin, P. E. (2021). Altered markers of stress in depressed adolescents after acute social media use. *Journal of Psychiatric Research*, *136*, 149–156. https://doi.org/10.1016/j.jpsychires.2021.01.055

Sunil, S., Sharma, M. K., Amudhan, S., Anand, N., & John N. (2022) Social media fatigue: causes and concerns. *International Journal of Social Psychiatry*, *68*(3):686-692. doi:10.1177/00207640221074800

Stockdale, L., & Coyne, S. (2020). Bored and online: Reasons for using social media, problematic social networking site use, and behavioral outcomes across the transition from adolescence to emerging adulthood. *Journal Of Adolescence, 79*(1), 173-183. https://doi.org/10.1016/j.adolescence.2020.01.010

Twenge, J. M., Martin, G. N., & Spitzberg, B. H. (2019). Trends in U.S. adolescents' media use, 1976–2016: The rise of digital media, the decline of TV, and the (near) demise of print. *Psychology of Popular Media Culture*, *8*(4), 329–345. https://doi.org/10.1037/ppm0000203

Twenge, J. M. (2020). Why increases in adolescent depression may be linked to the technological environment. *Current opinion in psychology*, *32*, 89–94. https://doi.org/10.1016/j.copsyc.2019.06.036

Valkenburg, P. M., Peter, J., & Schouten, A. P. (2006). Friend networking sites and their relationship to adolescents' well-being and social self-esteem. *CyberPsychology & Behavior*, *9*(5), 584–590. https://doi.org/10.1089/cpb.2006.9.584

Valkenburg, P. M. (2022). Social media use and well-being: What we know and what we need to know. *Current Opinion in Psychology, 45*, 101294.

van den Eijnden, R. J. J. M., Lemmens, J. S., & Valkenburg, P. M. (2016). The social media disorder scale. *Computers in Human Behavior, 61*, 478–487. https://doi.org/10.1016/j.chb.2016.03.038

Vogel, E. A., Rose, J. P., Roberts, L. R., & Eckles, K. (2014). Social media, social comparison, and self-esteem. *PsycEXTRA Dataset*. https://doi.org/10.1037/e512142015-699

Woods, H. C., & Scott, H. (2016). #Sleepyteens: Social media use in adolescence is associated with poor sleep QUALITY, anxiety, depression and low self-esteem. *Journal of Adolescence*, *51*, 41–49. https://doi.org/10.1016/j.adolescence.2016.05.008

Funding and Acknowledgements

The authors declare no funding sources or conflicts of interest.