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THE EFFECTS OF SOCIAL MEDIA ON PSYCHOLOGICAL DISTRESS:
CONTRIBUTIONS OF LONELINESS, FEAR OF MISSING OUT,
AND NEED SATISFACTION

GARETT R. HAWKINSON

48 Pages

Social media use is a major part of everyday American life and has continued to increase in the last decade particularly due to increased access of social media capable devices. The most frequent users of social media appear to be adolescent youth and college students. Being as pervasive as it is, the effects of social media use are worth exploring. Research has established associations between social media use and negative mental and physical health outcomes. A key area of study has explored loneliness and found social media use predicts increased feelings of loneliness. Other research contests these findings suggesting other factors beyond just usage, and some argue that social media use can even reduce loneliness. These conflicting findings suggest the potential role of motivation and intention for engaging in social media use. Such drivers of social media use may be found within self-determination theory, and fear of missing out. The study evaluated a moderated mediation model wherein the indirect effect of social media use on distress were mediated by loneliness, the latter of which was moderated by need satisfaction and FOMO. The results indicate that social media does not exhibit a moderated mediation effect. There was no evidence that need satisfaction and FOMO moderated the effect of social media usage on loneliness, which in turn was hypothesized to be linked to heightened psychological distress. Social media use was also not associated with higher levels of distress, nor did it predict

loneliness when moderated by FOMO or needs satisfaction. Finally, loneliness was positively associated with distress.

KEYWORDS: social media; fear of missing out; loneliness; psychological distress; self-determination theory; need satisfaction

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AND NEED SATISFACTION

GARETT R. HAWKINSON

A Dissertation Submitted in Partial
Fulfillment of the Requirements
for the Degree of

DOCTOR OF PHILOSOPHY

Department of Psychology

ILLINOIS STATE UNIVERSITY

2022

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ACKNOWLEDGMENTS

Throughout writing this dissertation, and during my academic career I have received an immense amount of support and guidance.

First I would like to thank Dr. Dan Lannin for all his time, patience and help with me on this immense task. I am extremely grateful for all of your hard work and guidance on this project. I would also like to thank Dr. Steven Landau, Dr. Leandra Parris, and Dr. Eric Wesselmann, who helped me with my early research experience, and introduced me to Dr. Lannin.

I would like to acknowledge Dr. Adana Meyers, Dr. Chang Su-Russell, and Dr. Eric Wesselmann for taking the time to share their knowledge and be a part of this project on my committee.

A final Thank you to Dr. Mark Swerdlik, for your guidance, mentorship, and support throughout my graduate career in school psychology.

G. R. H

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CHAPTER I: INTRODUCTION

Over the last few years, access to and participation in social media has increased dramatically (Smith & Anderson, 2018). Due to the fact that so much of college students engage in social media use it is important to understand the potential problems it may present. Among youth we see the most social media use, where roughly 92% of teens engage in daily online activities (Lenhart, 2015). Within the adult population we see usage rates of up to 84% for young adults, to 45% for seniors (Auxier & Anderson, 2021). Given these numbers it is evident that social media is most heavily used across the younger population and will likely continue to increase as youth transition into adulthood. Previous research has explored the relationship between social media use and negative outcomes finding increased risk of addictive behavior, depression, suicidal ideation, sleep problems, and loneliness (Jasso-Medrano & López-Rosales, 2018; Rozgonjuk et al., 2018; Scott & Woods, 2018; Velthoven et al., 2018). Yet, there is still much unknown regarding the psychological processes by which social media usage relates to psychological distress and mental health.

Loneliness may be a key factor that explains the relationship between social media use and other negative outcomes that students experience. Many correlational studies have found a relationship between social media use and increased feelings of loneliness (Cigna, 2020; Hunt et al., 2018; Pittman & Reich 2016; Wang et al., 2018). Loneliness is of particular concern due to its increase in mental health concerns, Alzheimer's disease and overall mortality (Cacioppo & Cacioppo, 2014; Holt-Lundstad et al., 2015; Meltzer et al., 2013; Sundström et al., 2019). Other research offers conflicting findings on the relationship between social media use and loneliness, suggesting that lonely individuals are more likely to use social media, rather than social media being a cause of their loneliness (Lemieux et al., 2013, & Song et al., 2014). Other research even

suggests that social media may be used to enhance existing relationships or create new ones ultimately reducing one's feelings of loneliness (Nowland et al., 2017).

Self-determination theory (Deci & Ryan, 1985; Deci & Ryan 2000) may provide additional insight into other factors that may relate to both social media usage and mental health. Specifically, self-determination theory suggests that social media use may help fulfill one's relatedness needs, and that individuals lower in relatedness engage in more social media use (Lin, 2016; Sheldon et al., 2011). It is therefore possible that the level to which one's core psychological needs are met may impact their motivation and intention for engaging in social media use, causing a direct impact on the relation between social media use and loneliness. Needs satisfaction is an important factor in determining whether or not an individual's social media use leads to negative mental or physical health concerns (e.g., loneliness, anxiety, depression, and physical symptoms). Need satisfaction may represent the extent to which a person meets their psychological needs of autonomy, relatedness, and competence. Additionally, the unique social context of social media sites may also highlight the salience of relationship needs, suggesting the importance of exploring additional factors such as Fear of Missing Out (FOMO). Previous research has found an association between FOMO and loneliness and that higher levels of FOMO predicted nighttime social media use, resulting in problematic sleep outcomes (Barry & Wong, 2020; Scoot & Woods, 2018). FOMO may be a potential moderating variable between the social media use and negative mental health or physical health outcomes.

Overview of the Present Study

Although empirical research examining the connection between social media usage and mental health is burgeoning, much of it is exploratory, atheoretical, or both. Therefore, the current explored and tested predictions of a well-established psychological theory (i.e., self-

determination theory; Deci & Ryan, 1985, 2000) to investigate psychological processes linking social media usage and mental health outcomes. Given the evidence for negative mental health outcomes as the result of social media use this area warrants investigation (Jasso-Medrano & López-Rosales, 2018; Rozgonjuk et al., 2018; Scott & Woods, 2018; Velthoven et al., 2018). Therefore, the present study examined a moderated mediation model. Specifically, it was examined whether social media usage was associated with distress due to the mediator of loneliness, and whether the interaction of social media usage with satisfaction of psychological needs and social media usage with fear of missing out (FOMO) moderated this mediating process in a sample of college students. The college student sample for the present study was conducted in the fall of 2021. At the time, the campus where students were surveyed had just resumed to its first semester of in-person instruction after a year of quarantine/online instruction. This information is important to take into account due to the potential number of unknown impacts the COVID-19 pandemic may have had.

CHAPTER II: REVIEW OF THE LITERATURE

Social Media

Social media has become a significant part of life for many in our society due to its ever-expanding popularity and an increase in access to technology to utilize it with (Smith & Anderson, 2018, Auxier & Anderson, 2021). Social media refers to “a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of User Generated Content” (Kaplan & Haenlein, 2010, p. 61). Web 1.0 content may have included things such as Encyclopedia Britannica Online, personal web pages, and content publishing, whereas Web 2.0 was first used in 2004 to help describe a shift in developer and end-user utilization of the world wide web; this shift went from content and applications being designed and published by an individual to being continually altered by all users (Kaplan & Haenlein 2010). Specifically, with Web 2.0 came blogs, wikis, and more collaborative works. Examples of social media under this definition would include social networking sites (e.g., Facebook, QQ, Google+, YouTube, Yelp, Pheed), professional networking sites (e.g., LinkedIN), chat boards and discussion forums, Tinder, Bumble and Instagram.

Social Media Use in Teens

Social media use among youth is quite frequent and a major part of their daily lives. The expansion of technology and its availability has played a major role in young people’s ability to access the internet. From the recent 2018 findings from the Pew Research Center it was found that 95% of teens have access to smartphones (Smith & Anderson, 2018). This percentage is higher from the previous findings in 2015 that found 73% of teens had access to a smartphone (Lenhart, 2015). In addition, the frequency of online usage in teens has jumped significantly

from the 2015 polling. The most recent findings indicate 45% of teens engage in near-constant online use, which is up from 24% found in 2015 (Smith & Anderson, 2018). Overall, approximately 92% of teens engage in online activity at least daily, with 56% of teens reporting multiple instances of going online per day (Lenhart, 2015). Another interesting finding from the surveys suggest that smartphones are the biggest avenues for online usage for teens.

Approximately 91% of teens get online through smartphones at least occasionally and of these teens 94% of them go online daily or more frequently (Lenhart, 2015). Engagement in various social media sites has seen a shift since the 2015 polling as well. Previously, 71% of teens engaged in Facebook use while 20% of teens engaged in Instagram usage (Lenhart, 2015). As of the most recent polling, only 51% of teens reported using Facebook while 72% reported using Instagram (Smith & Anderson, 2018). Interestingly across socio economic demographics teens of lower income families are more likely to utilize Facebook (70%) than teens from higher income families (36%). Given the significant spike in both access and online usage from just 2015 to 2018 it is evident that social media and online use in teens is here to stay, and thus needs to be addressed. Additionally, it is likely that teen social media use will continue into adulthood.

Social Media Use in Adults and College Students

While adult social media use may be lower than that seen in teens, there are more adults accessing social media than those who are not up until the age of 65. Across the adult population 84% of 18-29-year old's report social media use, while 81% of 30-49 year old's, 73% of 50-64 year old's, and 45% of 65+ year old's report social media use (Auxier & Anderson, 2021).

Though younger adults appear to engage in social media use more often than older adults, the use of social media across demographics is frequently present. From a recent polling, it is estimated that 81% of adults access YouTube, 69% of adults access Facebook, and 40% of adults

access Instagram (Auxier & Anderson, 2021). Across social media use for adults Facebook stands as the dominant platform that adults engage in, which has been consistent since the Pew Research Center began such surveys in 2012. Amongst the adult population 70% of Facebook users report daily visitation of the platform, with 49% reporting multiple visits per day. The second and third highest daily visitation rates by adults include snapchat at 59%, and Instagram at 59% (Auxier & Anderson, 2021). As stated above, young adults (18-29) have the highest percentages of social media use amongst the entire adult population. Additionally, this young adult population accounts for the majority of students in post-secondary institutions. Specifically, as of fall 2019, 11 million of enrolled students were between ages 18 to 24, and 6.1 million were over the age of 24 (Bustamante, 2019). Given this information, it is apparent that social media is here to stay, and the younger generations almost universal use of social media will likely continue as they enter adulthood.

Social Media Use and Psychological Distress

While technological change is inevitable given the passage of time, research has proposed an array of findings suggesting problematic outcomes that can be associated with individual social media use. These findings are often mixed, suggesting the need to examine mediating, and moderating factors. Some findings suggest social media use results in lower psychological well-being, increased psychological distress, and increased depression and anxiety symptomology (Keles et al. 2019; McCrae et al. 2017). Conflicting work suggests no relationship between social media use and psychological distress (Heffer et al. 2019; Jensen et al. 2019). Additionally, frequent access and utilization of social media may be similar to addictive behaviors which have been shown to predict negative psychological outcomes (Jasso-Medrano & López-Rosales, 2018). A previous study investigated the relationship between social media use,

addictive behavior, depression, and suicidal ideation (Jasso-Medrano & López-Rosales, 2018).

The study found that excessive use of social media is a risk factor for addictive behaviors which may ultimately manifest as depression, suicidal ideation, or other negative consequences.

Another study evaluated problematic phone use with depression and anxiety symptom severity, suggesting increased symptom severity and poorer academic outcomes as a result of problematic phone use (Rozgonjuk et al., 2018).

Smartphones are the most widely used tool for accessing social media (Lenhart, 2015). Problematic smart phone use can be described as “an inability to regulate one’s use of the mobile phone, which eventually involves negative consequences in daily life” (Velthoven et al., 2018, p. 1). Engagement in problematic phone use was found to be associated with psychopathology including depression and anxiety (Rozgonjuk et al., 2018). Interestingly it was found that the severity of depression and anxiety was not related to screen time minutes but was “negatively correlated with frequency of phone screen unlocking” (Rozgonjuk et al., 2018, p. 1). Other research has found that one’s average depressive mood per day across one week was positively correlated with one’s amount of problematic phone use (Rozgonjuk et al., 2018). Additional research on problematic phone use looked at similar aspects of problematic phone use and psychological parameters in adults. This study found that “chronic stress, low emotional stability, female gender, young age, depression, and extraversion” were associated with problematic phone use (Augner & Hacker, 2011, p. 437). Additional work evaluated social media use during college lectures, problematic smartphone use and procrastination in college students (Rozgonjuk et al., 2018). Ultimately, it was found that procrastination, problematic smartphone usage and use of social media during lectures were all positively correlated. Unfortunately, the problematic outcomes seen in social media engagement do not begin in

adulthood. Overall, there are reasons to be concerned given the increased availability and use of social media across all demographics accompanied by the potential negative outcomes associated with its use.

Loneliness, Distress, and Other Negative Outcomes

Loneliness is a major area of concern. Loneliness can be defined as “a distressing feeling that accompanies the perception that one’s social needs are not being met by the quantity or especially the quality of one’s social relationships” (Hawkley & Cacioppo, 2010, p. 218).

Loneliness refers to a person’s subjective perception of social isolation rather than the objective nature of these relationships (Hawkley & Cacioppo, 2010). For example, one person may have few friends and be objectively isolated from others but still report low feelings of loneliness, while another may be surrounded by friends, family and social interactions but still report high feelings of loneliness.

Ultimately, loneliness has a major impact on both mental and physical wellbeing, while also being a risk factor for overall mortality (Holt-Lunstad, et al., 2015). Research findings on the negative physical outcomes in relation to loneliness are extensive. Across all ages higher levels of reported loneliness were found to have negative impacts on sleep (Doane & Thurston, 2014; Harris et al., 2013; Hawley et al., 2010; Pressman et al., 2005). Specifically, these studies found significant reductions in both sleep quality and duration for individuals higher in reported loneliness. Increased loneliness has also been shown to increase inflammation (Creswell et al., 2012; Hackett et al., 2012; Jaremka et al., 2013). When met with stress, lonelier individuals are shown to exhibit proinflammatory phenotypes. Inflammation, especially when chronic, has been shown to greatly impact health, with chronic inflammation being linked to cardiovascular and neurodegenerative diseases (Ershler & Keller, 2000; Hansson, 2005). Increased systolic blood

pressure has also been associated with loneliness (Hawkley et al., 2006). A follow up to this study found that “higher initial levels of loneliness were associated with greater increases in SBP over a 4-year period” (Hawkley et al., 2010, p. 132).

The impact of loneliness on mortality has been shown to be comparable to other early mortality factors including smoking, sedentary lifestyles, and obesity (Holt-Lundstad et al., 2015). The authors further report that there was a 26% increased likelihood of death for reported loneliness, 29% for social isolation, and 32% for those living alone. Finally, loneliness has also been associated with an increased risk for heart disease (Valtorta et al., 2016). Ultimately the health impacts of loneliness are severe, resulting in increased risk of age-related disease and overall mortality. Loneliness has also been associated with a vast amount of mental health concerns. Previous research has suggested that increased loneliness is associated with psychosis (Lim et al., 2018; Michalska et al., 2017), cognitive functioning (Gow et al., 2013; O’luanaigh et al., 2012; Shankar et al., 2013), depression (Cacioppo & Cacioppo, 2014; Meltzer et al., 2013), suicidal ideation and behavior (McClelland et al., 2020), and Alzheimer’s disease (Sundström et al., 2019).

Overall, loneliness has been shown to have significant negative impacts on both physical and mental well-being. Research has found that loneliness is a pervasive concern in societies with the highest levels of social media use (Pittman & Reich 2016). Given the high levels of accessible technology and use across demographics in the United States, it is likely that this is an area for concern. Across the United States loneliness has been steadily increasing. According to Cigna’s 2020 Loneliness Index, approximately three in five adults report themselves as lonely (Cigna, 2020). Unfortunately, this finding comes as an estimated 13% increase from their 2018 findings (Bruce et al., 2019). Their reports also indicted that social media has a significant

impact on loneliness, suggesting that heavier users are more likely to report feeling alone, isolated, left out and without companionship (Cigna, 2020).

Social Media Use and Loneliness

Heavy users of social media are more likely to report feeling lonely than those who are not engaged in such heavy use. Over the years research has focused heavily on the direct link between social media use and its outcomes on wellbeing, and specifically has found concerns with social media use and increased loneliness (Cigna, 2020). On the other hand, other work has contested this relationship suggesting that at times social media use can result in lower feelings of loneliness (Nowland et al., 2017). Previous research evaluated public Facebook use in teens and its relationship with feelings of loneliness. It was found that “active Facebook use” predicted a decrease in one’s social and emotional loneliness for those who engaged in moderate use (Wang et al., 2018), but users who engaged in heavy use were predictive of increased social and emotional loneliness. These findings indicate that social media use can have some benefits when used moderately, but frequent and excessive engagement may instead result in negative outcomes. Additional research has investigated the effects on subjective wellbeing in response to a direct reduction in weekly social media use. Specifically, Hunt et al., (2018) found that participants who limited their social media use saw significant reductions in ratings of depression and loneliness. While this study did not specifically look at the link between one’s baseline social media use and their subjective wellbeing, it suggests that a general reduction still has positive outcomes for feelings of loneliness.

Motivations for utilizing social media may be key factors that explain the relationship between social media usage and loneliness, and self-determination theory (Deci & Ryan, 1985; Deci & Ryan 2000) may provide insight into the nature of these relationships. For example, one

study looking at Facebook use, affinity seeking, social loneliness, and social avoidance suggests that lonely individuals who are unsatisfied with their interpersonal relationships may instead be utilizing Facebook to compensate for this deficit (Lemieux et al., 2013). The authors also argue that Facebook is an outlet for those who avoid social situations and are lonely. Another study presents similar arguments, suggesting that lonely individual use Facebook more, rather than Facebook use causing individuals to feel lonely (Song et al., 2014). Other researchers even argue that if social media is used as tool for enhancing current relationships or creating new social connections there is reduction in loneliness (Nowland et al., 2017). It is conceivable that moderating variables influence the relationship between social media usage and loneliness.

Self Determination Theory and Needs Satisfaction

Self-determination theory is an approach to understanding human motivation and innate psychological needs may serve as a potential driver of motivation for social media use (Deci & Ryan, 1985, 2000). There are three proposed universal psychological needs that motivate behavior and are related to overall health and well-being (Ryan & Deci, 2000). The three core psychological needs are autonomy, competence, and relatedness. Autonomy refers to an individuals need to be the deciding figure in their own life. To fulfill this need individuals must have some degree of control over their life, and to feel that they are also in control of their own behavior. Competence refers to ones need to achieve, be knowledgeable and be skillful. To fulfill this need individuals must develop mastery in areas that are important or relevant to their life. Relatedness refers to an individuals need to acquire a sense of belonging and connection with others. To fulfill this need individuals must develop close and affectionate relationships with others. Adequately fulfilling these needs is seen as a necessary part of psychological growth (Deci & Ryan, 2000).

When one is able to fulfill these core needs they are likely to experience better overall wellbeing than those who are unable to fulfill these needs. Previous work has yielded a positive relationship between satisfaction of these needs and optimal functioning across both interpersonal and intraindividual levels (Deci & Ryan, 2008). Self-determination theory suggests that the more these three core needs are satisfied the more an individual will engage in autonomous functioning, meaning that the actions they engage in are due to their enjoyment and interest in them, rather than an external reward or punishment. This aspect of self-determination theory is known as intrinsic motivation. Ryan and Deci (2000), describe intrinsic motivation as “the inherent tendency to seek out novelty and challenges, to extend and exercise one's capacities, to explore, and to learn” (p. 70). Individuals whose needs are fulfilled, engage in more intrinsically motivated actions and goal setting. This results in aspirations of personal growth, connectedness, personal health and community wellbeing. Meeting psychological needs has been linked to better mental health outcomes and autonomous forms of self-regulation, leading to better health outcomes and behaviors (Ng et al., 2012)

Conversely, when an individual's needs are not satisfied, they are more likely to engage in what Ryan and Deci, (2000), describe as extrinsic motivation. They describe extrinsic motivation as actions that are performed to acquire a separable outcome, rather than sole satisfaction derived from the performance of that action itself. Extrinsically motivated individuals also develop separate aspirations from those found in intrinsically motivated individuals. Specifically, extrinsically motivated individuals strive for financial success, social status and fame, and personal image. Research has found that those prioritizing extrinsic values is a predictor of negative outcomes (e.g., debt, relationships, conflicts), while those holding intrinsic values experience more positive outcomes (Kasser, 2016). Additional research has

found that those who place less emphasis on materialistic values and goals have improved well-being while those who place more emphasis on materialistic values and goals see a decrease in well-being (Kasser et al., 2014). Ultimately, self-determination theory provides an understanding of motivation and individual wellbeing resulting from their level of needs satisfaction.

Within the framework of self-determination theory, previous research has found associations between aspects of needs satisfaction and factors related to social media use. For example, social interaction is the most salient motivator for social media use (Smock et al., 2011), which suggests that many individuals may be motivated to satisfy their need for relatedness through social media. One study argues that Facebook use may strengthen an individual's ability to socialize and fulfill their need for relatedness (Lin, 2016). Such individuals may value the ability to form positive relationships providing a sense of inclusion and connectedness. Sheldon et al., (2011), found that individuals failing to satisfy relatedness needs satisfaction engaged in more Facebook use. Additionally, they found that while Facebook use helped satisfy positive relatedness needs there was no reduction in disconnection.

Importantly, those who experience low levels of relatedness need satisfaction may experience short term gratification while using social media, but their underlying lack of relatedness need satisfaction is not being resolved (Sheldon et al., 2011). Other research has found aspects of social media that relate to autonomy and competence as well. For instance, individuals using social media have a large amount of control in how they present themselves on the platform, with a tendency towards displaying more positive feelings or experiences (Krämer & Haferkamp, 2011; Reinecke & Trepte, 2014). This online autonomy within the realm of social media reflects a digital space where users are the final arbiter in what they wish to display about themselves to others. Additionally, these positive presentations have been found to increase

one's feelings of self-esteem, potentially satisfying one's needs for competence (Gonzales & Hancock, 2011).

Other research has suggested that social media sites such as Facebook allow for increased opportunities of social comparison. Specifically, downward social comparisons of other users (e.g., inferior status, image, success) may increase one's perceptions of their own competence (Haferkamp & Krämer, 2011). As stated before when one's basic psychological needs are satisfied, they are more likely to engage in intrinsically motivated actions. One's motivation for engaging in social media use is significant in terms of its negative or positive outcomes (Manuoğlu & Uysal, 2019). Specifically, Facebook users who expressed intrinsic motivation for their Facebook use displayed higher levels of daily well-being than extrinsically motivated users (Manuoğlu & Uysal, 2019).

In sum there is evidence for both positive and negative consequences of social media use in relation to one's needs satisfaction and overall well-being. Given the importance of one's motivation for using social media the level of their needs satisfaction may be a crucial factor in whether their use results in positive or negative outcomes. Specifically, individuals with higher needs satisfaction, who are more intrinsically motivated may engage in social media because they value the feelings and positive enjoyment they experience when using them. As a result, these individuals may be protected from or at a reduced risk of the negative consequences seen with overactive social media use (e.g., loneliness). On the other hand, individuals with lower needs satisfaction, who are more extrinsically motivated may engage in social media for external reasons. With this in mind, there is likely more to the linear association between overall social media use and negative outcomes such as feelings of loneliness, which are frequently seen in the research. Perhaps it can be seen as a sliding scale, as the higher your basic needs are met, the

more likely social media use may embolden or improve them, while the lower your basics needs, the more harm may be done.

Self Determination Theory of Fear of Missing Out

Fear of Missing Out (FOMO) is another factor that may be seen as a response to one attempting to resolve their relatedness need, acting as a motivator for their social media use. FOMO is defined as “a general state of anxiety at missing out on rewarding experiences, often driving social media engagement” (Scott & Woods, 2018, p. 61). Previous research has found that loneliness is associated with high levels of FOMO (Barry & Wong, 2020), which makes sense because individuals who feel they are missing out on rewarding experiences may be more aware of their lack of social interactions than those lower in FOMO. Additional research has found that higher levels of FOMO were also predictive of increased social media usage (Blackwell et al., 2017).

Those who experience higher levels of FOMO may often respond by engaging in behaviors—such as using social media to reduce their anxieties or feelings of missing out. Higher FOMO ratings appeared to be predictive of sleep problems by motivating nighttime social media use (Scott & Woods, 2018). That is to say, fueled by motivations of FOMO, those engaging in social media use at night may experience delayed or later bedtimes, increased pre-sleep cognitive arousal, and delays in falling asleep (Scott & Woods, 2018). Young individuals often report feeling disconnected without social media communication, which may lead to a desire to ever more connected to their smart phones and social media feeds (Scott & Woods, 2018). Overall, Given the importance of sleep for academic performance and social emotional, and physical well-being, obsession with social media use to stay involved and up to date is one of many negative impacts of FOMO driven social media use. these findings stress the harm that

constantly connection to social media may entail, and suggests that FOMO serves as a potential example of a moderator that could exacerbate the influence of social media usage.

Purpose of this Study

Social Media usage can be linked to distress, but this link is not robust across studies, suggesting the presence of important mediating and moderating factors (Keles et al. 2019; McCrae et al. 2017; Heffer et al. 2019; Jensen et al. 2019). With social media use becoming a dominant part of daily living, the impacts of such phenomenon warrant study (Lenhart, 2015; Smith & Anderson, 2018, Auxier & Anderson, 2021). Previous research has established concerning associations between excessive social media use and poor mental and physical health outcomes including depression, addictive behaviors, suicidal ideation, sleep problems, and loneliness (Jasso-Medrano & López-Rosales, 2018; Rozgonjuk et al., 2018; Scott & Woods, 2018; Velthoven et al.,2018). Research in this area has focused heavily on loneliness outcomes and predominantly found that increased social media use is associated with increased feelings of loneliness (Cigna, 2020; Hunt et al., 2018; Pittman & Reich 2016; Wang et al., 2018). Yet, some research has contested these more common findings, suggesting social media use can potentially reduce loneliness (Lemieux et al., 2013, & Song et al., 2014). These counterfindings give reason to explore the role of motivations and intentions behind social media use, and whether these factors influence the relationship between social media use and loneliness. Therefore, the purpose of this study was to examine predictions of self-determination theory as they pertain to processes and outcomes of social media environments. Specifically, I evaluated whether aspects related to need satisfaction—satisfaction of psychological needs and fear of missing out—moderate the relationship between social media use and loneliness, which in turn is hypothesized to predict psychological distress.

Research Questions

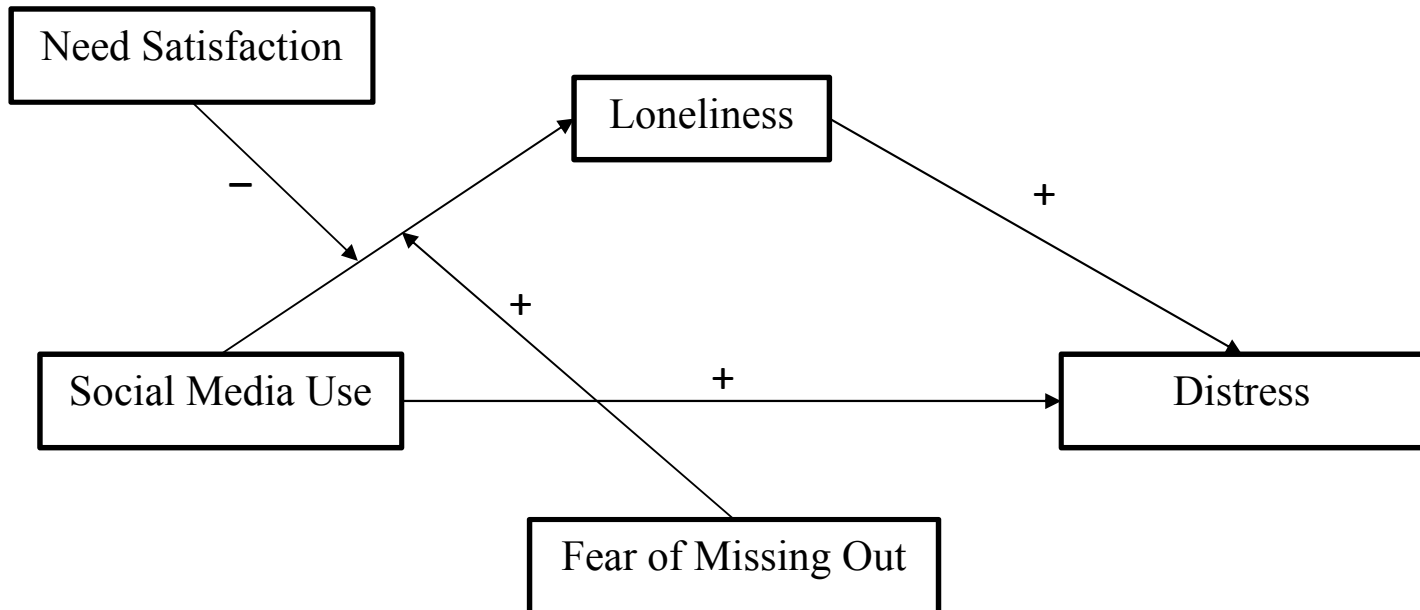
The current study aimed to answer the two following research questions relating the social media use and loneliness through a moderated mediation model.

1. *Does needs satisfaction and FOMO moderate the effect between social media use and loneliness?*
2. *Does loneliness mediate the moderated links between social media usage and distress?*

To examine these questions, I hypothesized a moderated mediation model wherein the indirect effect of social media use on distress was mediated by loneliness, the latter of which was moderated by need satisfaction and FOMO. As seen in Figure 1, this model entails several hypotheses.

Figure 1.

Hypothesized moderated mediation model of social media use and psychological distress.



Hypotheses

Hypothesis One

It was first hypothesized that social media use would exhibit a moderated mediation effect on distress via need satisfaction and FOMO.

Hypothesis Two

Second, it was hypothesized that social media use would be associated with increased levels of distress. This hypothesis is expected due to the body of research supporting these cross-sectional associations (Cigna, 2020; Hunt et al., 2018; Pittman & Reich 2016; Wang et al., 2018).

Hypothesis Three

Third, it was hypothesized that social media use would be moderated by FOMO predicts loneliness, with increased FOMO exacerbating the positive relation between social media use and loneliness. This notion is supported by the relation between FOMO and increased social media usage, as well as its feeling of disconnection from peers (Scott & Woods, 2018).

Hypothesis Four

Fourth, it was hypothesized that need satisfaction would moderate social media use to predict lower loneliness, with increased need satisfaction buffering the positive relation between social media use and loneliness. This notion is supported by evidence that those lower on need satisfaction often exacerbate their situation by focusing on tangible extrinsic foci (e.g., money, status, and social approval), whereas those who satisfy their psychological needs may be less apt to experience disconnection from others and a feeling of emptiness (Deci & Ryan, 2000).

Hypothesis Five

Finally, it was hypothesized that loneliness would be positively associated with psychological distress, which is supported by a robust theoretical and empirical literature (Cacioppo & Cacioppo, 2014; Holt-Lundstad et al., 2015; Meltzer et al., 2013; Sundström et al., 2019).

CHAPTER III: METHODOLOGY

Participants

Recruitment

Participants for the study were recruited via SONA, the Psychology Research Sign-Up System, which included students who were enrolled in an undergraduate psychology course at the time of data collection. Participants receive extra credit for completing departmental research studies. Survey data was collected in the fall of 2021. The semester in which this data was collected was the first semester of in-person instruction after the university went to online courses during the COVID-19 pandemic. Students were mandated to either be vaccinated or subject to weekly COVID-19 testing.

Power Analysis

There is an established relationship between social media use and psychological distress (Lup et al., 2015). While other research has examined relationship between social media use and psychological distress (Lup et al., 2015; Song et al., 2014; Wang et al., 2018), no research to date has examined moderated mediation models that incorporate aspects of self-determination theory. Therefore, I conducted three power analyses: a conservative estimate (assuming a small effect size), a moderate estimate (assuming a more moderate effect size), and a more liberal estimate (assuming a larger effect size). The power analyses were conducted on G-Power 3.0.10 software, and specified F-tests linear multiple regression: fixed model, R^2 increase, with a priori: compute required sample size – given α , power, and effect size. For the analyses, α error probability was equal to .05, power was equal to .80, and the number of tested and total predictors was 7. For the conservative estimate, I specified effect size as a small effect (0.02), for

the moderate estimate, I specified effect size as a moderate effect size (0.08), and for the liberal estimate, I specified effect size as a medium effect (0.15).

A conservative estimate indicated that approximately 725 participants would be required to achieve a critical F value of 2.02, with an actual power equal to .80. A moderate estimate indicated that approximately 187 participants would be required to achieve a critical F value of 2.06, with actual power equal to .80. A more generous estimate indicated that approximately 103 total participants would be required to achieve a critical F value of 2.12, with actual power equal to .80. To balance between achieving sufficient power while accounting for limitations of data collection, the moderate estimate is sufficient as a guideline for sampling, with a target of 250, which will account potential random and extreme response patterns.

Participant Characteristics

Participants were sampled from students at Illinois State University (ISU). A total of 409 participants between the ages of 18 and 55 were examined. The mean age of the participants was 19.65, with a standard deviation of 2.50. A total of 414 students initiated the survey. Of those, 5 were removed due to incomplete survey items or extremely unordinary response times. This left a final sample of 409 students. Of the 409 respondents 12.0% were male, 85.6% were female, 0.5% were transgender, 1.2% were non-binary, and 0.7% self-identified as demisexual, or genderfluid. Regarding sexual orientation, 77.5% identified as heterosexual, 1.5% as gay, 2.2% as lesbian, 8.8% as bisexual, 2.9% as pansexual, 2% as questioning, and 4.9% self-identified as asexual, demisexual, straight, fluid, queer, or preferred not to answer. Racial demographics included white (n = 288), African American/Black (n = 40), Asian American or Pacific Islander or Asian (n = 10), Hispanic/Latino/Latina (n = 35), Multiracial (n = 33), and self-identified other (n = 3). Of the 409 respondents 41.3% were freshmen, 21.0% were sophomore, 21.8% were

junior, 14.9% were senior, .5% were graduate students and .5% were other. When asked if they have a physical or mental disability 77.3% said no, 14.9% said yes, and 7.8% said they were unsure.

Procedure

Prior to implementing the study, I obtained approval by the University's IRB. Once participants clicked on a SONA link to participate, they accessed the study's survey through the Illinois State Qualtrics Survey Platform, where they were prompted to review an informed consent form before continuing with the study. If participants reviewed, and subsequently consented, they were directed to the social media use survey.

Participants were instructed to provide demographic information and then complete a social media usage assessment as well as assessments of loneliness, psychological distress, FOMO, and needs satisfaction. Participants completed a total of five measures for the study. Participants recruited through the Illinois State University Sona system were compensated for their participation with extra credit points for their psychology course work.

Measures

Social Media Use

The Social Networking Time Use Scale (SONTUS) was utilized to measure the time and degree to which participants engaged in social media activity and is considered highly reliable, $\alpha = .92$ (Olufadi, 2016). The SONTUS contains 29 items that asks participants to indicate how often they use social networking sites (e.g., Facebook, Instagram, WhatsApp, Twitter, Myspace, Pinterest) on a 1 to 11 Likert scale. The scale produces a Global SONTUS score that places participant into four categories including low user of social networking sites, average user of

social networking sites, higher user of social networking sites, and extremely high user of social networking sites (Olufadi, 2016). The internal consistency in the present sample was $\alpha = .91$.

Loneliness

The most frequently used approach to measure loneliness is the UCLA Loneliness scale. The UCLA Loneliness Scale (Russell et al., 1980). This scale was utilized to measure self-reported feelings of Loneliness. The UCLA Loneliness Scale is a 20-item scale created to measure individual and subjective feelings of loneliness in addition to feelings of social isolation. A shorter 3 item variant of the UCLA Loneliness Scale was created to be used in larger surveys (Hughes et al., 2004). Participants respond to each item by rating them on a scale from 1 (Hardly Ever) to 3 (Often). Survey items include the statements “How often do you feel that you lack companionship”, “How often do you feel left out”, and “How often do you feel isolated from others.” The utilized method for measuring loneliness includes appropriate construct validity and internal consistency based on prior research, $\alpha = 0.72$ (Hughes et al., 2004). The internal consistency in the present sample was $\alpha = .81$.

Psychological Distress

Distress was assessed with the K6+, a six-item measure developed for epidemiological assessment of nonspecific psychological distress in the U.S. National Health Interview Survey (Kessler et al., 2002). Participants read the sentence stem, “During the past 30 days, about how often did you feel . . .” and rate answers such as “nervous” and “hopeless” from 1 = *all the time* to 5 = *none of the time*. Evidence for validity has been established by the ability of the K6+ to distinguish between different levels of severity of psychological distress for adult and adolescent populations (Prochaska et al., 2012). A clinical score is calculated by first converting items so that 0 = *none of the time* and 4 = *all of the time*, and then summing all six scores, with higher

scores representing greater distress. Scores lower than 5 are indicative of low distress, scores greater than or equal to 5 are indicative of moderate distress, and scores greater than or equal to 13 are indicative of severe distress and the likely presence of a DSM–IV disorder occurring in the last 12 months (Prochaska et al., 2012). The internal consistency in the present sample was $\alpha = .88$.

Needs Satisfaction

The Basic Psychological Need Satisfaction Scale (Deci & Ryan, 2000; Gagné, 2003) was utilized to measure self-reported need satisfaction. The Basic Psychological Need Satisfaction Scale is a 21-item scale that measures general need satisfaction in one’s life. Participants respond to each item by rating them on a scale from 1 (not at all true) to 7 (very true). Survey items include statements such as “I feel like I am free to decide for myself how to live my life” (autonomy), “People I know tell me I am good at what I do” (competence), and “People in my life care about me” (relatedness). The Basic Psychological Need Satisfaction Scale is a reliable measure yielding an internal consistency between .84 to .90 (Johnston & Finney, 2010). The internal consistency in the present sample was $\alpha = .87$

Fear of Missing Out

The Fear of Missing Out Scale (FoMOs; Pryzbylski et al., 2013) was used to measure respondent feelings of distress related to missing out on social experiences. The FoMOs is a 10-item measurement that asks respondents to rate their responses on a 1 (Not at all true of me) to 5 (Extremely true of me) scale. Sample items include “I fear others have more rewarding experiences than me”, and “It bothers me when I miss an opportunity to meet up with friends.” The FoMOs is considered a reliable measure ($\alpha = .87$). The internal consistency in the present sample was $\alpha = .87$.

CHAPTER IV: ANALYTIC APPROACH

Analytical Plan

I first examined missing data and conducted descriptive analyses. Then, to test my hypotheses, I examined a moderated mediation model (see Figure 1) in SPSS 25 utilizing Hayes (2017) PROCESS model (Template 9). This analysis examined whether there was a mediation effect from social media use to distress through loneliness and tested whether this effect was moderated by need satisfaction and FOMO. PROCESS analyses provided information about whether specific hypotheses were supported. Specifically, PROCESS outputs included regression coefficients along with an indication of statistical significance. An indirect mediation effect is indicated by a statistically significant indirect effect from social media usage to distress via loneliness. Moderation effects were indicated by statistically significant interaction coefficients.

CHAPTER V: RESULTS

Descriptive Statistics

Zero-order correlations, means, and standard deviations of all variables are shown below in Table 1. There was no missing data for individual scale items. A total of 414 people began the survey and were excluded from analysis if they did not complete more than 50% of survey items. Five of the most extreme survey takers (less than 173 seconds completion time) were removed based on box plot analysis. The final sample was $n = 409$. On average, participants reported a moderate level of distress ($M = 9.47$, $SD = 5.27$), with 19.1% reporting low distress, 52.3% reporting moderate distress, and 28.6% reporting severe distress. Previous research within a similar sample reported lower distress, ($M = 7.51, 8.00, SD = 4.65, 5.25$) suggesting a significant change in the overall sample's feelings of distress (Lannin et al., 2016, Lannin, Barrowclough & Vogel, 2020).

Review of bivariate correlations for the present sample appear to predominantly match expectations from previous research. Previous research suggests that increased use of social media is associated with negative outcomes and feelings of distress (Jasso-Medrano & López-Rosales, 2018; Rozgonjuk et al., 2018; Scott & Woods, 2018; Velthoven et al., 2018). In the present sample social media use and psychological distress were positively correlated. Previous work also suggests an association between social media use and loneliness (Cigna, 2020; Hunt et al., 2018; Pittman & Reich 2016; Wang et al., 2018). Social media use and loneliness were positive correlated in the present sample. Loneliness has also been previously associated with distress (Cacioppo & Cacioppo, 2014; Holt-Lundstad et al., 2015; Meltzer et al., 2013; Sundström et al., 2019). Loneliness and distress were also positively correlated in the present sample. Finally, previous research found a relationship between FOMO, social media use, and

loneliness (Barry & Wong, 2020; Scoot & Woods, 2018). In the present study, FOMO was positively associated with both loneliness and social media use.

Table 1
Sample Means, Standard Deviations, and Zero-Order Correlations (n = 409)

| Variables | M | SD | 1 | 2 | 3 | 4 | 5 |
|-----------------------|------|------|-------|--------|--------|--------|---|
| 1. Social Media Use | 5.68 | 1.55 | — | | | | |
| 2. Loneliness | 1.88 | 0.58 | .15** | — | | | |
| 3. FOMO | 2.69 | 0.84 | .28** | .33** | — | | |
| 4. Needs Satisfaction | 4.94 | 0.76 | -.04 | -.52** | -.33** | — | |
| 5. Psych Distress | 9.47 | 5.27 | .12* | .52** | .38** | -.60** | — |

$p < .05$ * $p < .01$ ** $p < .001$ ***

Hypothesis One

First, I originally predicted that social media use would exhibit a moderated mediation effect; specifically, social media's effect on loneliness would be moderated by need satisfaction and FOMO, and loneliness would in turn be linked to psychological distress. To test this hypothesis, a moderated mediation model was conducted using the PROCESS macro model number 9 (see Figure 2). Results indicate that the overall moderated mediation hypothesis was not supported (see Table 2). The indices of partial moderated mediation were not statistically significant for need satisfaction ($b = -0.08$, 95% CI = [-0.26, 0.10]) or for FOMO ($b = 0.05$, 95% CI = [-0.12, 0.22]).

Table 2
Regression Table with Loneliness as Outcome

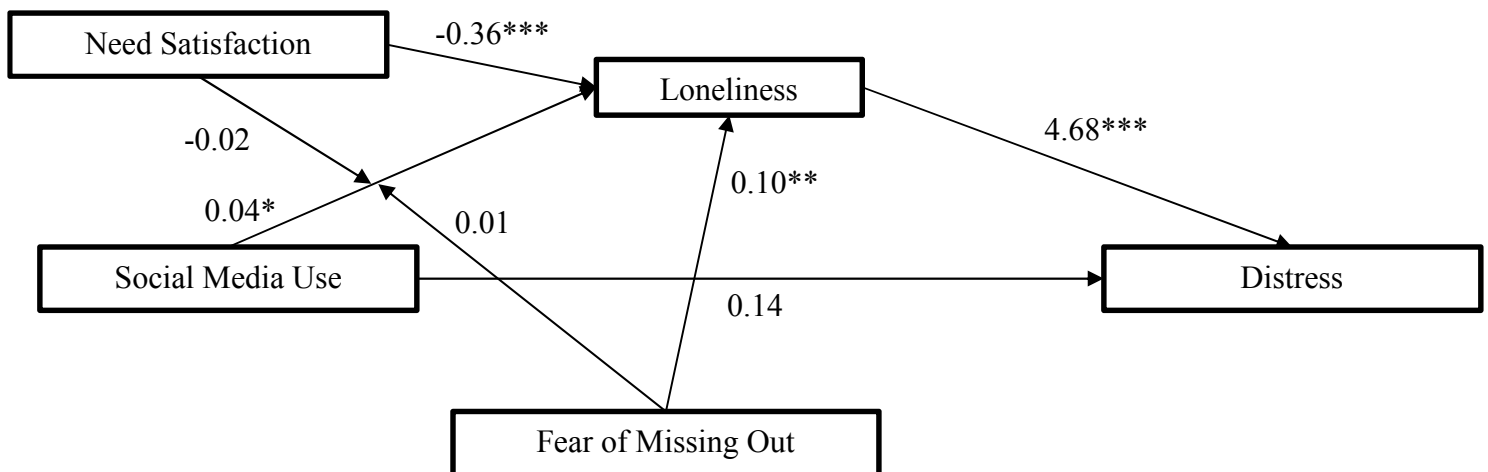
| Variables | <i>b</i> | <i>SE</i> | <i>t</i> | <i>p</i> | 95% CI of <i>b</i> LL, UL |
|--------------------------------------|----------|-----------|----------|----------|------------------------------|
| Constant | 1.88 | 0.03 | 74.58 | <.001 | 1.83, 1.93 |
| Social Media Use | 0.04 | 0.02 | 2.33 | .020 | 0.01, 0.07 |
| Needs Satisfaction | -0.36 | 0.03 | -10.66 | <.001 | -0.43, -0.30 |
| Social Media Use × Need Satisfaction | -0.02 | 0.02 | 0.79 | .428 | -0.06, 0.03 |
| FOMO | 0.10 | 0.03 | 3.06 | .002 | 0.04, 0.16 |
| Social Media Use × FOMO | 0.01 | 0.02 | 0.79 | .611 | -0.03, 0.05 |

Table 3
Regression Table with Distress as Outcome

| Variables | <i>b</i> | <i>SE</i> | <i>t</i> | <i>p</i> | 95% CI of <i>b</i> LL, UL |
|------------------|----------|-----------|----------|----------|------------------------------|
| Constant | 0.67 | 0.76 | 0.87 | .382 | -0.83, 2.16 |
| Social Media Use | 0.14 | 0.15 | 0.98 | .328 | -0.14, 0.43 |
| Loneliness | 4.68 | 0.39 | 12.09 | <.001 | 3.92, 5.44 |

Figure 2.

Moderated mediation model of social media use and psychological distress



Hypothesis Two

Second, I predicted that social media use would be directly associated with increased levels of distress, but this too was not supported. The direct effect of social media use on distress was not significant $b = 0.14$, $SE = 0.15$, $t(409) = 0.98$, $p = .328$.

Hypothesis Three

Third, I hypothesized that social media use moderated by FOMO would predict loneliness; increased FOMO will exacerbate the positive relationship between social media use and loneliness. Although there was a positive relationship between FOMO and loneliness, $b = 0.10$, $SE = 0.03$, $t(409) = 2.33$, $p = .002$, hypothesis 3 was unsupported because there was no evidence of a social media use \times FOMO interaction effect, $b = 0.01$, $SE = 0.02$, $t(409) = 0.51$, $p = .613$.

Hypothesis Four

Next, I hypothesized that social media use would be moderated by needs satisfaction, but this was not supported because the interaction effect was not statistically significant, $b = -0.02$, $SE = .02$, $t(409) = -0.79$, $p = .428$.

Hypothesis Five

Finally, I hypothesized that loneliness would be positively associated with distress. This hypothesis was supported as the direct effect was statistically significant, $b = 4.68$, $SE = .39$, $t(409) = 12.09$, $p < .001$.

Discussion

The current study explored the effects of self-determination theory on mental health in the context of social media. Specifically, I explored additional aspects of the relationship between social media use, loneliness, and distress (Jasso-Medrano & López-Rosales, 2018; Rozgonjuk et al., 2018; Scott & Woods, 2018; Velthoven et al., 2018). In line with self-determination theory, I hypothesized that needs satisfaction (intrinsic need) and fear of missing out (extrinsic need) would moderate the effects of social media use on loneliness, which in turn would be linked to worse mental health. The present research extends prior research by examining moderating variables of both social media and related psychological needs.

The results did not support my primary hypothesis that social media use would exhibit a moderated mediation effect. There was no evidence that need satisfaction and FOMO moderated the effect of social media usage on loneliness, which in turn was hypothesized to be linked to heightened psychological distress. There could be a variety of reasons for this outcome. First, need satisfaction and FOMO exhibited respective negative and positive main effects on loneliness, which may have accounted for the majority of variance in loneliness. It is possible that many college students may not need social media to satisfy their social needs because of their close proximity to others and instead, social media use may be a supplemental activity compared to the wide availability of in-person relationships and interactions on a college campus. Secondly, because FOMO is positively linked to social media usage it is possible that FOMO could serve more as a mediator of social media usage's effect on loneliness, as opposed to a moderator. Second, my population sample were predominantly comprised of females (85%) and a plurality of psychology majors (28.1%). It is possible that men and women vary in how they respond to deficits in needs satisfaction and how they attempt fulfill them. For example,

previous literature has found other gender differences in motivation type for online learning, physical activity, and career decision making (Barry & Wong, 2020, Guay et al., 2013, Lauderdale et al., 2015). Additionally, it is possible that psychology majors have learned about self-determination theory, and therefore may have responded differently to the survey than those who have not had more education or experience in the area.

The results also did not support my secondary hypothesis that social media use would be directly associated with higher levels of distress. This outcome contradicts some previous research that suggested associations between higher social media use and distress (Cigna, 2020; Hunt et al., 2018; Pittman & Reich 2016; Wang et al., 2018), while other research has observed the potential therapeutic effect of social media use (Nowland et al., 2017). Although social media use is noted to exacerbate FOMO and loneliness, others may find effective avenues of social connection through online relationships, group participation and other forms of connection. Overall, this suggests that there may be important moderators that influence whether social media usage will lead certain types of individuals to experience positive, negative, or no impact at all to their mental health. Such potential moderators could include internet addiction, negative social comparisons, body image concerns, and access to social interactions, local demographics. Future research may benefit from exploring these areas.

Next, the results did not support my third hypothesis that social media use, when moderated by FOMO, would predict loneliness. This finding is somewhat surprising because previous research had found increased levels of social media use for those with higher ratings of FOMO (Scott & Woods, 2018). Indeed, the present research found positive associations between social media use and FOMO, and between FOMO and loneliness, but there was no interaction effect. The present findings suggest that even though FOMO increases as social media usage

increases and exhibits a main effect on increased loneliness, it does not interact with social media usage to predict loneliness. FOMO and social media usage may exert independent effects on one another. FOMO may also motivate much of social media usage, and the relationship may be one of mediation rather than moderation.

My fourth hypothesis was also unsupported as there was no interaction effect. Specifically, need satisfaction was not found to significantly moderate the relationship between social media use and loneliness. Additionally, I found that needs satisfaction was not linked to social media use, but in line with self-direction theory it did significantly predict less loneliness (Deci & Ryan, 2000). That is to say, the tendency to satisfy psychological needs was linked to less loneliness. Regarding the null interaction effect, it is possible that social media may be more of a supplementary tool, and less of a primary means of satisfying psychological needs. As suggested earlier, this may be characteristic of the sample or due to the unique social environment offered by college campuses—namely one that allows for significant and sufficient opportunities to satisfy one's needs through varied social activities, groups and relationships. This interaction may be more likely in populations or settings where people cannot easily meet their needs in person, such as rural communities, isolated individuals, those in unhealthy relationships, minority groups, and those with medical concerns that limit their ability to attend social settings.

Finally, the results supported my fifth hypothesis that loneliness would be positively associated with distress. This was the strongest association and coincides with established research (Cacioppo & Cacioppo, 2014; Holt-Lundstad et al., 2015; Meltzer et al., 2013; Sundström et al., 2019). This finding continues to add to the exhaustive literature base that loneliness is predictive of problematic mental and physical health. Physically, loneliness increases one's risk of overall mortality, negatively impacts sleep, increases inflammation, blood

pressure, and heart disease. (Doane & Thurston, 2014; Harris et al., 2013; Hawley et al., 2010; Pressman et al., 2005, Holt-Lunstad, et al., 2015, Valtorta et al., 2016). Mentally, loneliness is associated with psychosis, impacted cognitive functioning, depression, and suicidal ideation/behavior (Lim et al., 2018; Michalska et al., 2017, Gow et al., 2013; O’luanaigh et al., 2012; Shankar et al., 2013, Cacioppo & Cacioppo, 2014; Meltzer et al., 2013, Sundström et al., 2019).

Implications

While there was no observed moderated mediation effect of social media usage on distress, the findings of the current study continue to emphasize the powerful influence loneliness has on mental health. An examination of bivariate correlations reveals that increased loneliness was linked to all predictor variables, i.e., increased social media usage, increased FOMO, and reduced need satisfaction. This points to each factor as relevant for intervention points to alleviate loneliness. Additionally, while needs satisfaction and FOMO did not show moderating effects they both exhibited positive relations with loneliness as well as social media use. Given the significant concerning outcomes related to increased levels of loneliness it is important to continue exploring processes like FOMO that are linked to increased loneliness, and what can be done to reduce these relationships and overall loneliness. It will be important to continue exploring what aspects lead to increased feelings of FOMO and how they may be reduced to ultimately protect against increased feelings of loneliness. For need satisfaction, it would be beneficial to explore effective ways in reducing specific needs deficits that increase one’s feelings of loneliness. For clinical practitioners, needs satisfaction may serve as a beneficial area to progress monitor in relation to therapeutic outcomes.

Identifying interventions that help undergraduates directly identify and satisfy their psychological needs may prove beneficial as well. Interventions focusing on fostering increased engagement in communities and areas related to the individuals value may be beneficial to increasing relatedness needs. Additionally motivating individuals to engage in challenging, but not overwhelming experiences may support increases in competence. Interventions targeting motivation, goal setting, and addressing barriers to initiation such as cognitive behavioral therapy could be useful to these ends. Allowing client perspectives, creating opportunities for client input and initiative may help foster autonomy through a therapeutic relationship.

Overall, while social media use, FOMO and needs satisfaction appear to predict loneliness, effective strategies for mitigating these effects or fulfilling areas of deficit could ultimately reduce feelings of loneliness and its associated negative outcomes. Fostering healthy and adaptive social media usage may help reduce loneliness. It may be helpful for undergraduates to learn ways of using social media in a goal-oriented manner to form direct relationships, join groups related to hobbies or interests, may assist individuals in receiving the therapeutic effects of social media use seen in some previous literature (Nowland et al., 2017). Practitioners could coach individuals through effective use of social media to increase these relationship opportunities which may in turn help to reduce FOMO, and further interrupt their relationships with loneliness. Additionally, mental health services and outreach programs may consider helping students quit social media entirely, due to reported levels of higher wellbeing (Tromholt, 2016).

Limitations/Future Directions

There are several limitations worth discussing. First, the study was conducted within the college education setting, which while convenient may not reflect dynamics of larger populations

and may limit external validity. The participant pool was heavily skewed towards White women who were psychology majors within the university. Additionally, the survey was distributed and completed during the COVID-19 pandemic, which could have any number of unforeseen impacts. Also, self-report-data can be somewhat unreliable, especially regarding social media usage (Scharnow, 2016). Perhaps social media usage was one of the only social avenues many students had due to COVID-19 quarantine protocols, or during social distancing measures. This could have limited variability in social media usage and may have reduced the observed effects. I also did not differentiate between the different types of social media platforms that participants engaged in, or whether their usage was passive (viewing) or more active (posting). Although many of my hypotheses were not supported, the results continue to reflect the established relationship between social media use and loneliness, and loneliness and negative outcomes. Continuing to probe for moderating and mediating variables that may contribute risk or protective factors for these predictive pathways could prove valuable for informing future interventions. Additionally, understanding the interaction of additional variables could help foster preventative measures to reduce problematic outcomes associated with high levels of social media use and loneliness.

Conclusion

The present study supports and builds upon the established relationship between social media use, FOMO, needs satisfaction and loneliness and psychological distress. Main effects were found for social media use, needs satisfaction, and FOMO on loneliness, suggesting that each may play a distinct role in perceptions of social connection and ultimately on mental health. This study highlights the importance of reducing loneliness as a key factor to improving mental health. It also highlights the mental health benefits that occur when psychological needs are met,

and suggests that online environments may be less than ideal to this end because too much social media may exacerbate FOMO and ultimately loneliness. Overall, the present research suggests that social media may be an avenue that many undergraduates pursue to feel connected with others, but this may be less beneficial to mental health when online activities fail to directly address satisfying deeper psychological needs and instead focus on addressing concerns that others might be having more fun or living a better life than them.

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