Smartphone and Social Networking Site Use: Does it Really Matter?

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Abstract

The use of digital technology, namely smartphones and social networking sites continue to increase in recent years, particularly since the COVID-19 pandemic. Although this pattern has corresponded with greater concerns about the potential impact of use and dependency on the technology, it remains unclear when these experiences with technology become problematic for adults' well-being and self-regulation. The current study examined the individual and simultaneous influences of smartphone and social networking site use and dependency on adults' well-being and self-regulation, and assessed the protective effects of social support from family, friends, and a significant other on these associations. Participants included 277 adults aged 18 to 80 (M_{age} = 29.64, *SD* = 13.86; 77.3% female) who completed self-report surveys on technology use, well-being, and self-regulation. Most participants reported a change in technology use, social support, well-being, and self-regulation since the COVID-19 pandemic. Smartphone use and dependency were positively associated with social networking site use and dependency, and all technology variables were negatively associated with well-being and self-regulation. Hierarchical regression models showed that friend support moderated the association between smartphone craving and withdrawal and self-regulation such that higher levels of smartphone craving and withdrawal were more strongly associated with lower levels of self-regulation when participants reported higher levels of friend support. The findings underscore the importance of developing and maintaining healthy technological habits.

Smartphone and Social Networking Site Use: Does it Really Matter?

Digital technology has become an integral part of the lives of all adults, particularly young adults (Jensen et al., 2019). Young adults typically between the ages of 18 and 24 years old (Park et al., 2006) are often working professionals or university students who rely on their smartphones to access information and communicate with others (e.g., friends, family members, and a significant other) (Demirci et al., 2015). Research with young adults demonstrates that greater smartphone use is negatively associated with indicators of both mental health (Guo et al., 2020) and well-being (Horwoord & Anglim, 2019; Yang et al., 2019). Greater use of smartphones is also associated with a greater vulnerability for smartphone dependency (Lee et al., 2016). Although smartphone dependency is associated with mental health concerns, the effects on well-being remain unclear. Unsurprisingly, the use of social networking sites has also increased (Azizi et al., 2019) and is negatively associated with indicators of mental health (Berryman et al., 2017) and well-being including self-regulation (Lin et al., 2014; Tangmunkongvorakul et al., 2019). Among young adults, greater use of social networking sites contributes to social networking site dependency (Burnell & Kuther, 2016), which, in turn, is associated with mental health concerns (Meena et al., 2015). Despite these patterns, research has yet to investigate the impact of social networking site dependency on the well-being of adults of varying ages.

Although research shows that social support is protective against the harmful effects of stressful experiences (Schreurs et al., 2012), it may be particularly important during the COVID-19 pandemic as technology is used increasingly more among adults to meet the demands of school and work (Shenoy et al., 2020), and to maintain relationships

(Hertlein & Ancheta, 2014). The current study will examine the unique experiences of adults during the COVID-19 pandemic by assessing the impact of technology use and dependency (i.e., smartphones and social networking sites) on well-being and self-regulation, and by assessing the protective effects of social support (i.e., family, friends, and a significant other) on these associations.

Access to and Use of Smartphones

Smartphones allow users to do almost anything from browsing the internet (e.g., reading news stories and exploring job opportunities), sending and receiving text messages or e-mails, and browsing a variety of apps (e.g., social networking sites, games, sports, dating, and banking) that can be easily downloaded (Elhai et al., 2016; Smith, 2015). In a 2018 survey of adults across the ten Canadian provinces, rates of smartphone ownership were highest among the young adult age group with 97.9% of those reporting access (Statistics Canada, 2018).

With the accessibility of smartphones and unlimited opportunities to connect with friends, family members, classmates, and strangers (Demirci et al., 2015), concerns about the increasing use of smartphones and potential impacts of these experiences remain (David et al., 2018). The use of smartphones is particularly important for university students as many university courses transitioned to a remote/online format during the COVID-19 pandemic. Specifically, these students may be using their device more to look up course information, engage with course content and classmates (Atas & Celik, 2019), take notes, complete assignments, and conduct research (Al-Daihani, 2018). Research with young adults shows that the increased use of smartphones is positively associated with mental health issues (e.g., depressive symptoms, symptoms of anxiety, self-esteem,

and post-traumatic stress symptoms) (Elhai et al., 2017; Grant et al., 2019), and are negatively associated with overall levels of well-being (Horwoord & Anglim, 2019). Other aspects of well-being such as self-regulation (e.g., the ability of individuals to manage their thoughts, feelings, and actions to reach their personal goals) are also negatively associated with smartphone use (Baumeister et al., 2018; Yang et al., 2019). While well-being is part of an adults' overall mental health, there are important distinctions between the two constructs. For example, well-being refers to a more general feeling, pleasure and fulfillment in life (Longo et al., 2017), or having positive self-regard, self-acceptance and optimism (Feeney & Collins, 2015), whereas mental health is more clinically-oriented involving the diagnosis of specific mental health illnesses (e.g., anxiety, depression), that may be more debilitating for performing daily tasks (Galderisi et al., 2015).

Associations with Smartphone Dependency

Unsurprising, young adults who use their smartphone more are also more likely to become dependent on their device (Lee & Goldstein, 2016). The risk for smartphone dependency appears to be highest for those who use their smartphones primarily for social purposes (e.g., to maintain relationships) (Deursen, 2015). Symptoms of smartphone dependency include preoccupation with a smartphone, loss of control over smartphone use, symptoms of withdrawal (e.g., feelings of anger and tension when the smartphone is not available), and functional/behavioral impairments (e.g., lying, arguments, or social isolation) due to time spent on their smartphone (Nikhita et al., 2015). These symptoms of smartphone dependency have been associated with mental health issues in young adults, such as greater depressive symptoms, greater symptoms of

anxiety, and increased feelings of loneliness (David et al., 2018; Lapierre et al., 2019). Although research has yet to examine links between smartphone dependency and overall well-being in young adults, self-regulation appears to be associated with smartphone dependency. Specifically, among young adults attending university, experiences of smartphone dependency were associated with poorer self-regulation skills (Gokcearslan et al., 2016; Deursen et al., 2015).

Access to and Use of Social Networking Sites

The ease of which social networking site apps can be downloaded on to smartphones has changed the way adults socialize and communicate with others (Doleck & Lajoie, 2018; Prema & Kalpana, 2020). In addition to smartphones, social networking sites can be accessed through technological devices such as tablets, laptops, and desktop computers (Heinrichs et al., 2011), meaning that specific access to a smartphone is not required. Having access to social networking sites allows users to share opinions and information, share or send pictures and videos, encourage collaboration between others (e.g., students), and socialize with a diversity of individuals or groups worldwide (Aichner & Jacob, 2015; Prema & Kalpana, 2020).

In recent years, the use of social networking sites has increased significantly, particularly among young adults (Azizi et al., 2019). In 2019, there were more than 3 billion active social networking users, up 1 million from the previous year (Kemp, 2019). Social networking sites can be used for different purposes such as for relationships (i.e., keeping in touch with friends and family) and for entertainment (i.e., exploring the lives of other people online) (Pang, 2018). Although Facebook remains one of the most used social networking sites with approximately 2.8 billion users in 2020 (Tankovska, 2021),

there is growing popularity in other sites such as Instagram, Snapchat, Twitter, and TikTok. For example, 79% of Canadian adults report using Facebook daily, 61% report using Instagram daily, and 60% report using Snapchat daily (Gruzd et al., 2018). The discrepancies in use may, in part be explained by the different purposes for using each site. For example, Facebook allows users to post and share content (i.e., statuses, and photos) to help them stay connected with family, friends, and others (Stec, 2015). Instagram is used for posting photos, videos, and live content (Rozgonjuk, 2021) but does not allow for posting status updates like Facebook. Snapchat is used exclusively to send photos and videos, which disappear a few seconds after they are opened (Utz et al., 2015). This feature is different from Facebook and Instagram where the photos can be available to the public for as long as preferred (Utz et al., 2015). In contrast, TikTok allows users to post short-form videos that are shorter than 1 min in duration (Wang, 2020). Rather than a newsfeed that is included on Facebook and Instagram, TikTok has a "For Your Page" in which the app automatically includes content to suit users' individual needs based on hashtags they are interested in (Stec, 2015). Collectively, these social networking sites are particularly popular among young adults attending university as they are used over five times more daily than any other app (David et al., 2018).

Unfortunately, there are also disadvantages with the growing use of social networking sites. Among young adults, the increased use of these sites is negatively associated with a host of mental health issues including greater symptoms of depression, greater symptoms of anxiety, increased feelings of loneliness, and greater suicidal thoughts (Berryman et al., 2017; Hussain & Griffiths, 2018; Meena et al., 2015). Similarly, with young adults attending university, the increased use of these sites is

negatively associated with indicators of well-being such as the inability to find purpose and meaning in life, reduced interest in daily activities, reduced feelings of optimism, and reduced feelings of self-respect (Tangmunkongvorakul et al., 2019). Not surprisingly, the increased use of social networking sites is associated with issues with self-regulation (e.g., missing classes and reports of greater conflict at work and within relationships) (Lee & Cheung, 2014; Lin et al., 2014).

Associations with Social Networking Site Dependency

Adults, particularly young adults, who spend more time on social networking sites are more likely to develop a dependency on social networking sites (Azizi et al., 2019; Burnell & Kuther, 2016). A social networking site dependency can occur when individuals' daily responsibilities are negatively impacted as a result of logging in to social networking sites at least once a day and spending more time on the site(s) than intended (Cheak et al., 2012). In particular, the use of social networking sites for social comparisons (e.g., comparing one's own life to others' experiences) increases adults' susceptibility for social networking site dependency because they become distracted and feel that their lives are lacking in some way (Clark et al., 2017). A dependency on social networking sites is problematic as it has been associated with mental health concerns such as increased depressive symptoms (Giota & Kleftaras, 2013), increased symptoms of anxiety, and higher levels of stress (Meena et al., 2015). An association between dependency on social networking sites and aspects of well-being, such as self-regulation has been established; with a social networking site dependency related to an inability to self-regulate one's use of social networking sites, and poor self-regulation skills in general among young adults (Burnell & Kuther, 2016; Turel, 2015). However, the

association between social networking site dependency and overall levels of well-being among adults remains unclear.

The Impact of Technology Use and Dependency on Well-Being and Self-Regulation

Despite increases in use of technology such as smartphones and social networking sites, it remains unknown when these experiences become problematic for adults' well-being and self-regulation. Considering the individual and simultaneous influences of smartphones and social networking sites (use and dependency) is necessary to understand how adults are uniquely impacted by these experiences and can help to shed light on strategies or recommendations for the promotion of healthy technological habits.

Understanding the Role of Social Support in Well-Being and Self-Regulation

Social support plays an essential role in interpersonal relationships given the positive or negative impact it can have on adults' level of stress, well-being, and mental health (Haber et al., 2007). Social support can be defined as the amount individuals feel that they belong, are cared for, valued, and/or loved (Cobb, 1976) and is particularly important during stressful times as it can be used as a coping mechanism (Saltzman et al., 2020). Some research suggests that social support is a multi-dimensional construct that includes both the support individuals actually receive and the individuals' perceived level of support (Stewart et al., 2014). Research consistently demonstrates the benefits of social support on mental health and well-being (Kugbey et al., 2015; Secor et al., 2017). For example, higher levels of perceived social support are associated with greater mental health (e.g., fewer symptoms of anxiety and depression) among young adults attending university (Malkoc & Yalcin, 2015; Rankin et al., 2018). Similarly, higher levels of perceived social support are associated with indicators of well-being such as

improvement of individuals' relationships, increased self-acceptance, life purpose, and personal growth (Secor et al., 2017). Although it is likely that social support is associated with adults' levels of self-regulation, research has not examined this link.

To maintain a healthy lifestyle, support from family, friends, and a significant other is critical (Gokcearslan et al., 2018). However, some research suggests that the impact of social support on mental health may vary by the source of support (Alsubaie et al., 2019). For example, greater perceived social support from friends and a significant other were associated with fewer depressive symptoms in young adults attending university, whereas family support was not associated with depressive symptoms (Kugbey et al., 2015). In another study, only social support from friends (not family or a significant other) was associated with fewer feelings of loneliness and stress (Lee & Goldstein, 2016). The impact of social support on well-being may also vary by the source of support among young adults (Secor et al., 2017). For example, friend support was more positively associated with well-being than family support (Secor et al., 2017). Greater perceived support from family and friends was associated with a higher quality of life in comparison to support from a significant other (Alsubaie et al., 2019). Given the proximity and the sharing of experiences between friends, particularly in university, it is not surprising that this form of support may be especially beneficial for students to cope with the emotional, social, and academic stressors they experience (Alsubaie et al., 2019). The transition from high school to university is especially stressful for many students who are relocating for school and leaving their established support networks (Rankin et al., 2018). Peer relationships also tend to be more stable than relationships with a significant other across university (Lee & Goldstein, 2016).

Moreover, social support may be a protective factor for young adults. According to the Buffering Hypothesis, social support systems (e.g., friends, family, and a significant other) can protect individuals from the negative repercussions of potentially stressful situations (Cohen & Wills, 1985). Specifically, positive social support networks may provide a buffer against the negative effects of stress by strengthening individuals' coping abilities (Kawachi & Berkman, 2001). Research demonstrates the protective effects of social support for different types of stressful experiences. However, much of this research has focused on the buffer social support may provide against mental health concerns. For example, social support from family, friends, and/or a significant other moderated the association between perceived stress and depressive symptoms in university students; that is, the association between perceived stress and depressive symptoms was weaker when students reported higher levels of social support from all three sources (Raffaelli et al., 2012). In another study, friend support (family support or support from a significant other were not tested) moderated the relationship between cyber victimization and internalizing symptoms (e.g., symptoms of anxiety and depression) with the association between cyber victimization and internalizing symptoms reduced for individuals with high levels of friend support (Holfeld & Baitz, 2020).

To date, research has yet to investigate the role of social support as a moderator for associations between stressful experiences and well-being. It can be argued that the greater use of or dependency on technology (e.g., smartphones or social networking sites) is stressful given the negative correlates (e.g., mental health, well-being, self-regulation) associated with these experiences (Burnell et al., 2019; David et al., 2018; Lapierre et al., 2019). Thus, based on the Buffering Hypothesis, it is likely that social support may

mitigate the risks associated with increased use or dependency on smartphones and social networking sites, and may be particularly beneficial for friend support.

Changing Experiences Since the COVID-19 Pandemic

Since the COVID-19 pandemic, the use of digital technology such as smartphones and social networking sites have increased to make up for the inability to interact with others in face-to-face situations (Prinstein et al., 2020). This is particularly true for young adults attending university given the transition of courses to remote or online formats, which may have also increased students' dependency on the technology (Anuradha et al., 2017; Hamza et al., 2020). Emerging research shows that increased feelings of isolation due to social distancing guidelines and community restrictions have been associated with an array of negative effects on adults' mental health (Best et al., 2020; Gao et al., 2020), and well-being (Lades et al., 2020). Providing support for loved ones during the pandemic has also become challenging for many due to the protective restrictions put in place. The inability to visit family members may be detrimental and contribute to increase feelings of loneliness, extended feelings of isolation, and a general feeling of loss of social support (Gruber et al., 2020). Thus, social support, which is a key coping mechanism during the pandemic, plays an even greater role in well-being (Saltzman et al., 2020). Although smartphones or social networking sites can be used more frequently to reach friends, family members, or a significant other, it remains to be seen whether this has been helpful or harmful for adults' level of well-being and self-regulation skills.

The Current Study

In the current study, I will first examine how the use of and dependency on technology (e.g., smartphones and social networking sites) are associated with well-being

and self-regulation among adults during the COVID-19 pandemic. Specifically, I hypothesize that greater smartphone and social networking site use and dependency will be associated with poorer well-being and self-regulation. Second, I will examine whether social support provides a buffer against the harmful effects associated with smartphone and social networking site use and dependency, and assess whether these patterns vary by type of support. Given the findings of past research, I expect that support from friends will be particularly beneficial in mitigating these effects on well-being and self-regulation in comparison to support from family members or a significant other.

Method

Participants

A convenience sample of undergraduate students at Grenfell Campus, Memorial University of Newfoundland as well as members of the general public who were at least 19 years of age or a university/college student were recruited for this study. Participants included 277 adults aged 18 to 80 (M_{age} = 29.64, *SD* = 13.86; 77.3% female) with the majority of the sample identifying as Caucasian (67.9 %). Over half of the participants completed some university education, a bachelor's degree, or a graduate degree (64.6%). Participation in the study was completely voluntary.

Procedure

Participants were recruited through the Grenfell Campus psychology participant pool, the Grenfell psychology (majors/minors) Brightspace page, and through online posters (Appendix A) which were posted on my personal social networking pages (Appendix B) (e.g., Facebook and Instagram). A brief description of the study as well as a link to the online survey was provided to participants during the recruitment process. Participants were required to provide informed consent before completing the online survey.

Measures

An informed consent form (Appendix C), an online questionnaire (Appendix D), and an information/debriefing form (Appendix E) were used in this study. The informed consent form included information about the study such as the purpose, the task requirements including the duration, and any potential risks and/or benefits that are associated with participation. The informed consent form also informed participants that

their responses would be anonymous and voluntary, and that they had the right to withdraw from the study at any time. Contact information for the researcher and supervisor were also provided. The online questionnaire assessed participants' experiences with smartphones, social networking sites, perceived feelings of relationship support (e.g., friends, family, and a significant other), and well-being, as well as changes in these experiences since the COVID-19 pandemic.

COVID-19 Change Questions

Participants were asked about potential changes in their lifestyles and experiences since the COVID-19 outbreak. Specifically, participants were asked about changes in their smartphone use, social networking use, relationship support, and well-being. If participants indicated a change in any variable, they were asked a follow-up question about the direction of the change (i.e., positive, negative, positive and negative or not sure).

Smartphone Use and Dependency

Participants were asked to self-report their experiences with their smartphones. To assess smartphone use, participants were asked about whether they currently own a smartphone and the frequency and time spent on their smartphone in an average week. Participants were asked about their smartphone dependency using the Japanese Version of Smartphone Dependence Scale (J-SDS; Ezoe et al., 2016). Previous research has supported the reliability and validity of the J-SDS (D'Souza & Sharma, 2020). For this study, 10 items from the craving and withdrawal subscale (e.g., "*My smartphone is on my mind even when I am not using it*") and 8 items from the overuse and tolerance subscale (e.g., "*I involuntarily touch my smartphone*") were included. Modifications were made to

two of the questions in the craving and withdrawal subscale. Specifically, the item "*I feel impatient and restless when my smartphone is unavailable*" was changed to, "*I feel impatient when my smartphone is unavailable*", and the item "*I feel pleasant or excited while using a smartphone*" was changed to, "*I feel happy or excited while using a smartphone*". Participants were asked to rate each item on a 4-point Likert scale ranging from 0 (*strongly disagree*) to 3 (*strongly agree*). Items for each subscale were averaged with higher scores indicating a greater smartphone dependency (α ranged from .84 to .87).

Social Networking Site Use and Dependency

Participants were asked to self-report their experiences with social networking sites (e.g., Facebook, Instagram, Snapchat, and TikTok). To assess social networking use, participants were asked about their experiences with browsing and posting on social networking sites in an average day. Participants were also asked about their social networking dependency using the 5-item Bergen Social Media Addiction Scale (BSMAS; Andreassen et al., 2016). Previous research has supported the reliability and validity of the BSMAS (Shahnawaz & Rehman, 2020). For all items, the words "*social media*" were changed to "*social networking sites*" (e.g., "*Spent a lot of time thinking about social networking sites or planned use of social networking sites?*") to more accurately represent the experiences within social networking sites in particular. One item, "*Used social networking sites so much that it has had a negative impact on your job/studies?*" was split into two separate questions, "*Used social networking sites so much that it had a negative impact on your job?*", and "*Used social networking sites so much that it had a negative impact on your studies?*". Participants were asked to rate each item on a 5-point

Likert scale ranging from 1 (*very rarely*) to 5 (*very often*). Items were averaged with higher scores indicating greater social networking site dependency (α = .85).

Relationship Support

Participants were asked about their perceived relationship support using the 12-item Multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al., 1988). Previous research has supported the reliability and validity of the MSPSS (Stewart et al., 2014). Participants were asked about their perceived support from their family (e.g., "*I get the emotional help and support I need from my family*"), friends (e.g., "*I can count on my friends when things go wrong*"), and a significant other (e.g., "*There is a significant other who is around when I am in need*"). Participants were asked to rate each item on a 7-point Likert scale ranging from 1 (*very strongly disagree*) to 7 (*very strongly agree*). Items for each subscale were averaged with higher scores indicating greater levels of perceived support from family, friends, and a significant other (α ranged from .89 to .99).

Well-Being

Participants were asked to self-report their overall levels of well-being using the World Health Organization Well Being Index (WHO-5; World Health Organization, 1998**).** Previous research has supported the reliability and validity of the WHO-5 (Lowe et al., 2004). Participants were asked to rate their experiences over the past 2 weeks, (e.g., "*I have felt cheerful and in good spirits*") on a 6-point Likert scale ranging from 0 (*none of the time*) to 5 (*all of the time*). Items were averaged with higher scores indicating higher levels of well-being (α = .87).

Self-Regulation

Participants were asked about their self-regulation skills using the 13- item Short-Term Adolescent Self-Regulatory Inventory (ASRI; Moilanen, 2007). Previous research has supported the reliability and validity of the ASRI (Bergen-Cico et al., 2015). Participants were asked to rate each item (e.g., "*When I'm sad, I can usually start doing something that will make me feel better")* on a 5-point Likert scale ranging from 1 (*not at all true for me*) to 5 (*really true for me*). After reverse coding, items were averaged with higher scores indicating greater self-regulation skills ($\alpha = .74$).

Demographics

Participants were asked self-report questions about their age, gender, ethnicity, and level of education.

The information/debriefing form (Appendix D) thanked participants for their participation and provided them with contact information for the researcher and the chair of the Grenfell Research Office in case they had any concerns regarding the study. Participants were also notified that they could contact the researcher regarding the results after April 2021.

Data Analysis Plan

IBM SPSS Statistics version 27.0 was used to conduct all analyses. The relationship between all study variables was examined with descriptive statistics and bivariate correlations. Although 277 participants began the survey, data from 35 were removed due to incomplete or missing data resulting in a sample of 242 participants that was used for all analyses. Two hierarchical regression models were computed using the 'enter' method to examine how technology use and dependency (e.g., smartphones and social networking sites) and social support (e.g., friends, family, and a significant other)

were associated with well-being and self-regulation. For each model, variables were entered in the same order. In Step 1, covariates of age and gender were included. Main effects of smartphone use (e.g., time spent in an average day) and dependency (e.g., overuse and tolerance, and craving and withdrawal), social networking site use (e.g., time spent browsing each day) and dependency, friend support, family support, and support from a significant other were added to Step 2 of the model. Nine two-way interactions between the three smartphone variables and three types of support were added to Step 3 (e.g., smartphone use by family support). In Step 4, six two-way interactions between the two social networking site variables and three types of support were added (e.g., social networking site use by family support). To reduce the risk of multi-collinearity, interactions terms were created from mean-centered continuous variables. Significant interactions were probed using a Microsoft Excel template for two-way interactions created by Dawson (2014). Regression assumptions were also tested before models were run and indicated no concerns (VIF values ranged from 1.15 to 2.50; Tolerance values ranged from 0.40 to 0.87).

Results

Descriptive Statistics

As shown in Table 1, participants were asked to report a change in related study variables since the COVID-19 pandemic began. A majority of participants (85.0%) reported a change in their smartphone use. For some, the change was positive (17.4%), for others it was negative (20.7%), and for the most, it was both positive and negative (40.9%). A majority of participants (86.8%) also reported a change in their social networking site use. For some, the change was positive (19.4%), for others it was negative (24.8%), and for the most, it was both positive and negative (35.5%). Perceived support also changed for many participants, particularly regarding support from a significant other (76.1%). Although this change was positive for some participants (17.8%), many were not sure about the degree of change (23.1%). Levels of well-being changed for most participants (86.4%) with many (39.3%) reporting a negative change in well-being. The ability of participants to manage their emotions (i.e., self-regulation) also changed (ranging from 47.1% to 63.2%) with negative changes (ranging from 13.6% to 27.3%) or both positive and negative changes (ranging from 16.1% to 22.3%) being most common.

Almost all participants (98.3 %) reported owning a smartphone and spent an average of 5.41 hours on the device each day (see Table 2). Almost half of the sample (48.3%) spent 6 or more hours per day on their smartphone. Social networking site access and use were also high. Specifically, 76.7% of participants reported having at least one current account for Facebook, Instagram, Snapchat or Tiktok, and spent an average of 4.5 hours each day on these sites. Participants were most likely to report having a Facebook

account (97.1%), followed by an Instagram account (81.8%), Snapchat account (70.7%), and TikTok account (57%). Over half of participants (51.7%) reported having an active account for all four social networking sites. Participants (42.6%) reported being most dependent on Facebook compared to other social networking sites. Approximately 27.7% of participants reported browsing on social networking sites for 6 or more hours per day.

Bivariate correlations between all study variables are presented in Table 3. Smartphone use was positively associated with both smartphone overuse and tolerance (r = .49) and smartphone craving and withdrawal (r = .39). Smartphone use was negatively associated with family support (r = -.17) and significant other support (r = -.19) but not friend support (r = -.06). However, smartphone dependency scales were only correlated with support from a significant other (smartphone craving and withdrawal r = -.16 and smartphone overuse and tolerance r = -.25) but not friend or family support (r range = -.06 to -.12). Smartphone use was negatively associated with well-being (r = -.24) and self-regulation (r = -.29). Both smartphone dependency scales were also negatively associated with well-being (smartphone craving and withdrawal r = -.16 and smartphone overuse and tolerance r = -.32) and self-regulation among adults (smartphone craving and withdrawal r = -.28 and smartphone overuse and tolerance r = -.38). Increased use of smartphones was also highly correlated with increased use of social networking sites (r = .68). Similarly, smartphone dependency subscales were positively associated with social networking site dependency (smartphone craving and withdrawal r = .55 and smartphone overuse and tolerance r = .71). Social networking site use was positively associated with social networking site dependency (r = .50). Social networking site use was not correlated with any source of support (r ranging from -.01 to -.06). However, social

networking site dependency was negatively associated with friend support (r = -.15) and significant other support (r = -.22). Social networking site use was negatively associated with well-being (r = -.22) and self-regulation (r = -.27). Social networking site dependency was also negatively associated with both well-being (r = -.34) and self-regulation (r = -.49).

Hierarchical Regression Models

As presented in Table 4, the first hierarchical regression model predicted self-regulation. Step 1 was significant, $F(2, 219) = 13.63$, $p < .001$ and predicted 11% of the variance in self-regulation. Older age ($\beta = .33$, $p < .001$) was associated with greater self-regulation. Main effects were added to Step 2 resulting in a significant increase to R^2: F_{inc} (8, 211) = 6.36, $p < .001$, and a significant overall model, $F(10,211) = 8.35$, $p < .001$. Greater social networking site dependency ($\beta = -.38$, $p < .001$) was associated with lower levels of self-regulation. Greater family support ($\beta = .13$, $p = .050$) was marginally associated with higher levels of self-regulation. Moderation effects of smartphone use and dependency with each type of support were added to Step 3 resulting in a marginally significant increase to R^2: F_{inc} (9, 202) = 1.93, $p = .050$, and a significant overall model, $F(19,202) = 5.48$, $p < .001$. The interaction between smartphone craving and withdrawal and friend support was significant ($\beta = -.19$, $p = .014$). As shown in Figure 1, higher levels of smartphone craving and withdrawal (1 *SD* above the mean) was more strongly associated with lower levels of self-regulation when participants reported higher levels of friend support. Adding two-way interactions between social networking site use and dependency, and each type of support to Step 4 did not result in a significant increase to

R^2: F_{inc} (6, 196) = 0.95, p = .461 but was a significant overall model, F(25, 196) = 4.37, p < .001.

As presented in Table 5, the second hierarchical regression model predicted well-being. Step 1 was significant, F(2, 219) = 13.77, p < .001 and predicted 11% of the variance in well-being. Older age (β = .32, p < .001) was associated with greater well-being. Main effects were added to Step 2 resulting in a significant increase to R^2: F_{inc}(8, 211) = 7.75, p < .001, and a significant overall model, F(10, 211) = 9.64, p < .001. Greater levels of smartphone overuse and tolerance (β = -.22, p = .013) was associated with lower levels of well-being. Greater family support (β = .28, p < .001) and greater friend support (β = .17, p = .008) were associated with higher levels of well-being. Adding two-way interactions between smartphone use and dependency, and each type of support to Step 3 did not result in a significant increase to R^2: F_{inc}(9, 202) = 0.43, p = .916, but was a significant overall model, F(12, 202) = 5.12, p < .001. Similarly, adding two-way interactions between social networking site use and dependency, and each type of support to Step 4 did not result in a significant increase to R^2: F_{inc}(6, 196) = 0.39, p = .885, but was a significant overall model, F(25, 196) = 3.94, p < .001.

Discussion

As the use of technology continues to increase among adults, particularly during the COVID-19 pandemic, concerns persist about the potential impact on mental health and well-being. One type of technology, smartphones, are important to consider because most Canadian adults report owning and actively using their device (Statistics Canada, 2018). Similarly, the use of social networking sites has also increased in recent years with new sites continually being developed that can be easily accessed via smartphones or other technological devices (Kemp, 2019). Although the increased use of these forms of technology is associated with an increased risk for dependency on smartphones (Lee & Goldstein, 2016) and social networking sites (Azizi et al., 2019) , research typically examines the associations between smartphones and social networking sites separately (Deursen, 2015; Doleck & Lajoie, 2018; Nikhita et al., 2015). For example, past research demonstrates that greater smartphone use is associated with mental health problems (Elhai & Levine, 2019; Guo et al., 2020; Kang, 2016), deficits in well-being (Yang et al., 2019), and poorer self-regulation among adults (Baumeister et al., 2018). Greater social networking site use is also associated with mental health problems (Berryman et al., 2017; Hussain & Griffiths, 2018; Meena et al., 2015), deficits in well-being (i.e., reduced feelings of optimism) (Tangmunkongvorakul et al., 2019), and poorer self-regulation (Lee & Cheung, 2014). Moreover, both smartphone and social networking site dependency are associated with mental health concerns (David et al., 2018; Giota & Kleftaras, 2013; Lapierre et al., 2019; Meena et al., 2015), and poorer self-regulation (Burnell & Kuther, 2016; Gokcearslan et al., 2016). However, associations between adults' smartphone and social networking site dependency, and well-being remains

unknown. The current study addressed these gaps in the literature to examine the individual and simultaneous impact of smartphone and social networking site use and dependency on adults' well-being and self-regulation. Given the importance of social support during the pandemic, the current study also investigated the protective effects of social support on these associations and considered whether particular sources of support are differentially beneficial.

Associations between Smartphone and Social Networking Site Use and Dependency and Adults' Well-Being and Self-Regulation

The first hypothesis that greater smartphone and social networking site use and dependency would be associated with lower levels of well-being and self-regulation was only partially supported. Consistent with this hypothesis, smartphone and social networking site dependency were negatively associated with well-being and self-regulation after controlling for the effects of smartphone and social networking site use, and perceptions of social support. Specifically, greater smartphone overuse and tolerance was associated with lower levels of well-being, and greater social networking site dependency was associated with poorer self-regulation. Adults who use their smartphones across extended periods are often unable to control the use of their device (Ezoe et al., 2016). Thus, they may be more likely to miss important events or social interactions (i.e., poorer self-regulation), which can have a negative impact on their well-being. Adults who are dependent on smartphones are also more likely to have poor social skills and report more conflict with others (Scott et al., 2016). Moreover, adults may have become more reliant on their smartphones during the pandemic with restrictions limiting the amount and degree of face-to-face interactions with others. For example, in this study,

most participants reported a change in smartphone use following the pandemic with many of these participants reporting a negative change or change that was both positive and negative. It is possible that this negative change reflects an increase in smartphone use, which may contribute to a greater likelihood of smartphone dependency. It is also possible that adults are using their smartphones more often to find information regarding the pandemic (i.e., news updates), to use tracking apps to identify cases of the infection in the community (Iyengar et al., 2020), and to attend online appointments or meetings (Park et al., 2013). The constant need to check for updates and information (which may not be accurate) could result in greater feelings of fear and stress (Kumar & Nayar, 2020) and lower levels of well-being.

Consistent with past research (Lee & Cheung, 2014), greater social networking site dependency was associated with poorer self-regulation. Research suggests that social networking site dependency occurs when the use of these sites begins to interfere with important daily activities and responsibilities (Walker, 2021). Given the context of the pandemic, life circumstances may have pressured adults to become more dependent on social networking sites, and thus, dampened their ability to self-regulate. For example, many businesses had to shift to online platforms such as social networking sites to reach and maintain existing customers who could not physically visit the store. The decreased face-to-face interactions may have also resulted in an increasing reliance on social networking sites for adults to maintain relationships both inside and outside of work (Gioia et al., 2021; Hamza, et al., 2020). For example, social networking sites are being used more for educational purposes for students to communicate with classmates given the remote or online format of many courses (Cavus et al., 2021). Although the current

study examined dependency of social networking sites overall, it is important to note that the dependency may vary by the type of social networking site. In this study, nearly all participants reported having an active Facebook account with more participants indicating a greater dependency on Facebook than any other social networking site. Thus, it is possible that a dependency on Facebook in particular would be more strongly associated with well-being and self-regulation compared to Instagram, Snapchat or TikTok; however, further research is needed to examine these possible relationships.

Contrary to hypothesis one, smartphone and social networking site use were not significantly associated with well-being and self-regulation in regression models after controlling for the effects of technology dependency and social support. Although the finding varies from past research that demonstrates a negative association between smartphones and social networking sites, and well-being and self-regulation (Baumeister et al., 2018; Horwoord & Anglim, 2019; Lee & Cheung, 2014; Tangmunkongvorakul et al., 2019), the effects of smartphone dependency are typically not controlled for in these studies. In the current study, showing that technological dependency is more strongly associated with well-being and self-regulation than technological use suggests that the use of technology may be particularly problematic when it is begins to interfere with daily tasks and relationships. It may be necessary to investigate how particular uses of technology are associated with adults' level of well-being and self-regulation. It may also be important for future research to consider which types of uses of technology may increase the risk for a dependency on smartphones or social networking sites.

Moderating Role of Social Support

The second hypothesis that support from friends would be particularly beneficial in mitigating the harmful effects of technology use and dependency on well-being and self-regulation was also partially supported. As expected, a moderation effect was found for friend support but not family support or support from a significant other. However, the moderation of friend support was only significant for the association between smartphone craving and withdrawal and self-regulation. In particular, greater smartphone craving and withdrawal (i.e., greater feelings of anxiety or impatience when a smartphone is not available) was more strongly associated with lower levels of self-regulation when participants reported higher perceived levels of friend support. Thus, unexpectedly, friend support did not provide a buffer in this association; rather, it actually strengthened the negative association. Although past research shows that friend support may provide a buffer against the harmful effects associated with stressful experiences such as cyber victimization (Holfeld & Baitz, 2020), this is the first study to examine the moderation effects for smartphone and social networking site use and dependency specifically.

Social support has been beneficial for many adults throughout the pandemic, as it can help those to cope with anxiety and stressful situations (Saltzman et al., 2020). However, the restrictions in place during the pandemic make it challenging to provide and receive the same level of support and may vary by the type of support/relationship. For example, the pressure to maintain relationships with friends through a smartphone could have unintended effects. Since smartphones allow adults to stay connected with friends (Lapierre & Lewis, 2016), it is possible that participants who have more friends feel a greater need to check their smartphones. This may be particularly true during the pandemic as restrictions limit the nature and extent of face-to-face interactions. The

constant need to check the device may be particularly important with friends who are more physically distant (Utz, 2007) and can make it more difficult for adults to regulate their emotions and behaviors during day-to-day activities (Ezoe et al., 2016).

Conversely, both family support and support from a significant other did not moderate any of the associations in this study. While many adults reported a positive change in their support from both family and a significant other during the pandemic, this support was not beneficial nor damaging on the associations between technology use and dependency, and well-being and self-regulation. Adults who exhibit symptoms of a smartphone or social networking site dependency may go unnoticed by family members or a significant other who may be living further away during the pandemic. Therefore, adults' well-being and ability to control their behaviours and emotions that may be associated with their technological dependency would be un-phased by the support from their family and a significant other who are not physically with them. Further, due to the distance, these sources of support may not know how to offer assistance for those who may be experiencing a technological dependency.

Implications

The current findings show that both smartphone and social networking site dependency are negatively associated with adults' well-being and self-regulation during the COVID-19 pandemic. Increased time spent at home due to lockdown measures have contributed to an increase in technology use (Prinstein et al., 2020), and put adults at a greater risk for developing a dependency on smartphones or social networking sites. Understanding the negative correlates of technological dependency is necessary for adults to make appropriate changes in their use (or reduced use) of technology. Setting aside

time each day to engage in screen free activities may help to mitigate the risk for and harmful effects of a smartphone or social networking site dependency. For example, spending more time outdoors, exercising, reading, and pursuing hobbies are effective for maintaining a greater well-being during the pandemic (Fullana et al., 2020; Lades et al., 2020). The use of free tracking software on smartphones may also help to cut down on use and create a more disciplined scheduled for use (Rooksby et al., 2016). Apps such as Quality Time (Android) helps to set limits on use (Quality Time, 2021), and Space (iOS and Android) helps to set goals of use and track daily progress (Space, 2018). While tracking screen time would help make adults aware of their use, educational strategies would also be beneficial in raising awareness of technology dependency.

Educational campaigns such as "Switch Off" raises awareness of digital dependency and provides education on the negative impacts of smartphones and social networking sites use (Switch Off Campaign, 2018). In addition, the "International 'Moodoff Day' to Raise Awareness of Smartphone Addiction" campaign encourages adults to stay off their smartphones for at least five hours on February 28th each year (Moodoff Day, 2011). Tracking screen time and learning more about technological dependency may help adults recognize symptoms associated with a dependency such as loss of control, feelings of withdrawal, and feeling isolated from society (Nikhita et al., 2015). Lastly, making active efforts to reduce number of devices and apps, setting assigned spots for use (e.g., making your bedroom an off-limit location for use), turning off notifications for a period of time, and making sure devices are put away during meals and other responsibilities could also reduce the risk of developing a dependency on technology (Cole, 2019).

Limitations

Although the current study highlights the impact of technology use and dependency on adults' well-being and self-regulation during the COVID-19 pandemic, there are some limitations that need to be discussed. First, the cross-sectional design of the study made it impossible to determine the direction of association; whether dependency on smartphones and social networking sites are leading to issues with well-being and self-regulation, or whether concerns with well-being and self-regulation are contributing to a dependency on smartphones and social networking sites. A longitudinal study is needed to highlight the trajectory of these variables and can provide insight into whether smartphone and social networking site dependency are risk factors for or consequences of well-being and self-regulation. A second limitation concerns the lack of sample diversity that was disproportionately female. Including more participants who identify as male or another gender would allow for comparisons across gender and shed further light on the role of technology in well-being and self-regulation. Lastly, assessments of smartphone and social networking site use only considered the amount of time adults spent on the device or site. It did not address how adults used the technology (e.g., entertainment, text messaging, social media, talking to friends, etc.) which may provide insight into what aspects of use may be most problematic for a smartphone or social networking site dependency.

Conclusion

Despite these limitations, the current study contributes to a growing body of research attempting to understand the effects of adults' experiences during the COVID-19 pandemic. Greater technological dependency was negatively associated with

indicators of well-being among adults. In particular, greater smartphone overuse and tolerance was associated with poorer overall levels of well-being, and greater dependency on social networking sites was associated with poorer self-regulation. Friend support moderated the association between smartphone craving and withdrawal and self-regulation such that greater smartphone craving and withdrawal was strongly associated with poorer self-regulation when adults reported higher friend support. Thus, having greater friend support may not necessarily be beneficial for those who have a smartphone dependency. Overall, the findings highlight the dangers of a technological dependency, and the importance of developing and maintaining healthy technological habits to reduce the risk for a dependency that is associated with lower levels of well-being and self-regulation.

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Table 1

COVID Change Questions

Variable	Amount of change (%)	Degree of change (%)			
		Positive	Negative	Positive and negative	Unsure
Smartphone use	85.0	17.4	20.7	40.9	9.1
Social networking site use	86.8	19.4	24.8	35.5	7.0
Support from significant other	76.1	17.8	6.6	8.7	23.1
Support from friends	63.6	33.1	31.8	30.5	4.5
Support from family	48.4	44.4	13.7	36.6	4.3
Well-being	86.4	12.4	39.3	32.2	2.5
Controlling emotions	63.2	10.7	27.3	22.3	3.7
Controlling thoughts	60.3	9.1	26.4	22.3	2.5
Controlling behavior	47.1	13.2	13.6	16.1	4.5

Note. $n = 242$

Table 2

Descriptive Statistics for Study Variables

Variable	*M (n)*	*SD (%)*
Age	29.59	13.91
Gender		
Male	(22)	(9.1)
Female	(214)	(88.4)
Smartphone use	5.41	1.79
Smartphone overuse and tolerance	2.62	.58
Smartphone craving and withdrawal	2.40	.56
Social networking site use	4.47	1.88
Social networking site dependency	2.46	.87
Family support	5.40	1.34
Friend support	5.51	1.28
Significant other support	4.60	2.82
Well-being	3.19	1.05
Self-regulation	3.06	.58

Note. Smartphone overuse and tolerance, and craving and withdrawal are subscales of smartphone dependency.

Table 3

Bivariate Correlations for Study Variables

Variable	1	2	3	4	5	6	7	8	9	10	11
1. Age	-										
2. Gender	-.05	-									
3. Smartphone use	-.37***	.02	-								
4. Smartphone overuse and tolerance	-.35***	.05	.49***	-							
5. Smartphone craving and withdrawal	-.10	.09	.39***	.54***	-						
6. Social networking site use	-.25***	.15*	.68***	.39***	.32***	-					
7. Social networking site dependency	-.48***	.14*	.49***	.71***	.55***	.50***	-				
8. Family support	.21**	-.01	-.17*	-.07	-.06	-.08	-.11	-			
9. Friend support	.15*	.11	-.06	-.09	-.12	-.01	-.15*	.38***	-		
10. Significant other support	.20**	-.03	-.19**	-.25***	-.16*	-.06	-.22**	.22**	.17*	-	
11. Well-being	.33***	-.08	-.24***	-.32***	-.16*	-.22**	-.34***	.39***	.31***	.21**	-
12. Self-regulation	.33***	.00	-.29***	-.38***	-.28***	-.27***	-.49***	.21**	.20**	.11	.46***

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

Table 4

Hierarchical Regression Model Predicting Self-Regulation

Variable	B at entry	SE B	β	R^2	ΔR^2
Step 1				**.11*** **	
Age	.02	.003	**.33*** **		
Gender	-.004	.13	-.002		
Step 2				**.28*** **	**.17*** **
Smartphone use	.00	.03	-.002		
Smartphone overuse and tolerance	-.07	.09	-.07		
Smartphone craving and withdrawal	-.01	.08	-.01		
Social networking site use	-.002	.03	-.007		
Social networking site dependency	-.26	.07	**-.38*** **		
Family support	.06	.03	.13		
Friend support	.03	.03	.06		
SO support	-.01	.01	-.06		
Step 3				**.34*** **	.06
Smartphone use x family support	.02	.02	.09		
Smartphone use x friend support	-.03	.02	-.11		
Smartphone use x SO support	-.005	.009	-.04		
Smartphone overuse and tolerance x family support	-.003	.06	-.005		
Smartphone overuse and tolerance x friend support	.04	.06	.05		
Smartphone overuse and tolerance x SO support	-.02	.03	-.05		
Smartphone craving and withdrawal x family support	.03	.05	.05		
Smartphone craving and withdrawal x friend support	-.14	.06	**-.19***		
Smartphone craving and withdrawal x SO support	-.003	.03	-.008		
Step 4				**.36*** **	.02
Social networking site use x family support	-.02	.02	-.11		
Social networking site use x friend support	-.03	.02	-.15		
Social networking site use x SO support	.005	.01	.05		
Social networking site dependency x family support	.06	.06	.13		
Social networking site dependency x friend support	.05	.07	.09		
Social networking site dependency x SO support	.004	.03	.02		

Note. SO support = significant other support.

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

Table 5

Hierarchical Regression Model Predicting Well-Being

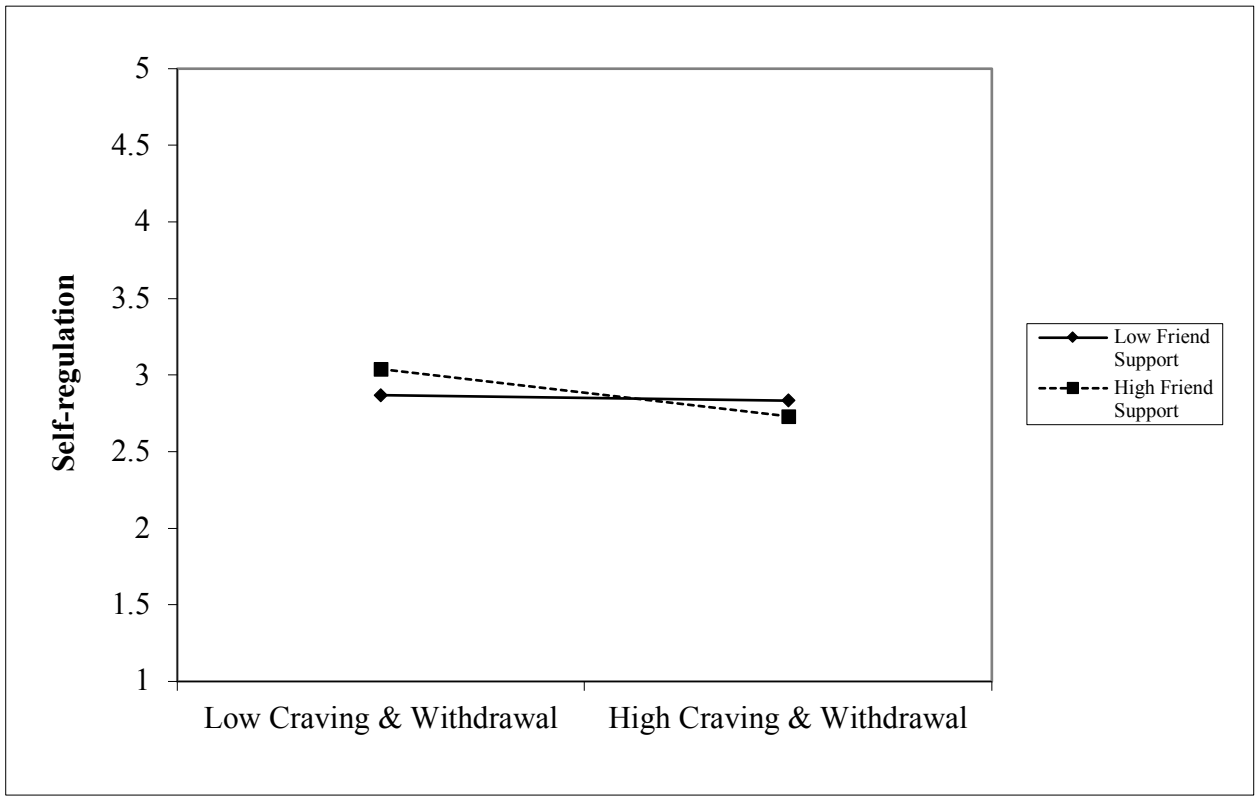
Variable	B at entry	SE B	β	R^2	ΔR^2
Step 1				**.11*** **	
Age	.03	.001	**.32*** **		
Gender	-.29	.22	-.08		
Step 2				**.31*** **	**.20*** **
Smartphone use	-.00	.05	-.00		
Smartphone overuse and tolerance	-.40	.16	**-.22***		
Smartphone craving and withdrawal	.14	.13	.08		
Social networking site use	-.02	.05	-.03		
Social networking site dependency	-.09	.12	-.08		
Family support	.21	.05	**.28*** **		
Friend support	.14	.05	**.17** **		
SO support	-.03	.02	.07		
Step 3				**.33*** **	.01
Smartphone use x family support	-.01	.03	-.01		
Smartphone use x friend support	-.04	.04	-.09		
Smartphone use x SO support	-.00	.02	-.00		
Smartphone overuse and tolerance x family support	-.02	.11	-.01		
Smartphone overuse and tolerance x friend support	.14	.11	.11		
Smartphone overuse and tolerance x SO support	-.03	.05	-.06		
Smartphone craving and withdrawal x family support	.03	.10	.03		
Smartphone craving and withdrawal x friend support	.03	.10	.03		
Smartphone craving and withdrawal x SO support	-.01	.05	-.02		
Step 4				**.33*** **	.01
Social networking site use x family support	-.02	.04	-.04		
Social networking site use x friend support	.02	.04	.05		
Social networking site use x SO support	.01	.02	.05		
Social networking site dependency x family support	-.05	.11	-.06		
Social networking site dependency x friend support	-.10	.12	-.11		
Social networking site dependency x SO support	.03	.05	.09		

Note. SO support = significant other support.

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

Figure 1

Interaction Between Smartphone Craving and Withdrawal and Friend Support on Self-Regulation



Appendix A

Smartphone and Social Networking Site Use: Does it Really Matter?

Heather Collins supervised by Dr. Brett Holfeld

Participants Needed ☺

As part of my Honours thesis, I will be examining whether your experiences with technology are associated with your relationship support and well-being. You will be asked to complete an online questionnaire that is 100% anonymous and will take 10 to 15 minutes to complete!

This study was approved by an ethics review process in the psychology program at Grenfell Campus, Memorial University and was found to be in compliance with Memorial University's ethics policy as well as Tri-council Policy on Ethics. If you have any questions, please contact Heather Collins at hecollins@grenfell.mun.ca or the research supervisor, Brett Holfeld at bholfeld@grenfell.mun.ca .

You must be 19 years of age or older OR a current post-secondary student to participate. If you are interested, please click the link below to participate! Thank you in advance ☺

Appendix B

Advertisement

Grenfell Psychology Participant pool:

Hi everyone! As part of my honours thesis, I am conducting a study where I will be examining whether your experiences with technology are associated with your relationship support and well-being. If you choose to participate, you will be asked to complete an online questionnaire that will take about 10-15 minutes to complete. This study was approved by an ethics review process in the psychology program at Grenfell Campus, Memorial University and was found to was found to be in compliance with Memorial University's ethics policy as well as Tri-council Ethics. If you have any questions, please contact Heather Collins at 709-638-5155 or the research supervisor, Brett Holfeld at 709-639-2740. Participation for this study is 100% voluntary and anonymous. Please note that you must be 19 years of age or older OR a current post-secondary student. If you would like to participate, please click the link below. Thank you in advance

Brightspace page for Psychology majors/minors:

Hi psych friends! As part of my honours thesis, I am conducting a study where I will be examining whether your experiences with technology are associated with your relationship support and well-being. If you choose to participate, you will be asked to complete an online questionnaire that will take about 10-15 minutes to complete. This study was approved by an ethics review process in the psychology program at Grenfell Campus, Memorial University and was found to be in compliance with Memorial University's ethics policy as well as Tri-council Policy on Ethics. If you have any questions, please contact Heather Collins at 709-638-5155 or the research supervisor, Brett Holfeld at 709-639-2740. Participation for this study is 100% voluntary and anonymous. Please note that you must be 19 years of age or older OR a current

post-secondary student. If you would like to participate, please click the link below. Thank you in advance ☺

Facebook:

Hi Facebook friends! As part of my Honours thesis, I am conducting a study where I will be examining whether your experiences with technology are associated with your relationship support and well-being. If you choose to participate, you will be asked to complete an online questionnaire that will take about 10-15 minutes to complete. This study was approved by an ethics review process in the psychology program at Grenfell Campus, Memorial University and was found to be in compliance with Memorial University's ethics policy as well as Tri-council Policy on Ethics. If you have any questions, please contact Heather Collins at 709-638-5155 or the research supervisor, Brett Holfeld at 709-639-2740. Participation for this study is 100% voluntary and anonymous. Please note that you must be 19 years of age or older OR a current post-secondary student. If you would like to participate, please click the link below. Thank you in advance ☺

*** I will post a picture of my poster on my Facebook story ***

Instagram:

*** I will post a picture of my poster on my Instagram story ***

Appendix C

Smartphone and Social Networking Site Use: Does it really Matter?

Informed Consent Form

The purpose of this Informed Consent Form is to ensure you understand the nature of this study and your involvement in it. This consent form will provide information about the study, giving you the opportunity to decide if you want to participate.

Researchers: This study is being conducted by Heather Collins as part of the course requirements for Psychology 4951 and Psychology 4959 (Honours project in Psychology I and II) under the supervision of Dr. Brett Holfeld at Grenfell Campus, Memorial University of Newfoundland

Purpose: The study will examine whether your experiences with technology are associated with your relationship support and well-being. The results will be used to write an Honours thesis as part of the course requirements for PSYC 4959. The results will be presented and may be published in the future.

Task Requirements: You will be asked to complete a short questionnaire about your experiences with technology (e.g., smartphones and social networking sites), relationships, emotions, and well-being. There are no right or wrong answers; we are only interested in your experiences. You may omit any questions you do not wish to answer. By participating in this study, you acknowledge that you are at least 19-years-old or a college/university student.

Duration: The online questionnaire will take approximately 10-15 minutes to complete.

Risks and Benefits: There are no obvious risks or benefits involved with your participation in this study.

Anonymity and Confidentiality: Your responses will be anonymous. IP addresses will not be collected. All information will be analyzed and reported on a group basis. Thus, individual responses cannot be identified.

Right to Withdraw: Your participation in this research is totally voluntary and you are free to stop participating at any time. However, once you complete this survey and click submit, your data cannot be removed because we are not collecting any identifying information and therefore we cannot link individuals to their responses.

Contact Information: If you have any questions or concerns about the study, please feel free to contact myself, Heather Collins at hecollins@grenfell.mun.ca or my supervisor, Dr. Brett Holfeld at 709-639-2740 or bholfeld@grenfell.mun.ca. As well, if you are interested in knowing the results of the study, please contact myself or Dr. Brett Holfeld after April 2021.

This study has been approved by an ethics review process in the psychology program at Grenfell Campus, Memorial University of Newfoundland and has been found to be in compliance with Memorial University's ethics policy. ----------

By clicking next, I acknowledge that I am at least 19-years old and/or a college/university student; I have been informed of, and understand, the nature and purpose of the study, and I freely consent to participate.

Appendix D

Smartphone and Social Networking Site Use: Does it really Matter?

<u>Part 1.</u> ***Please answer the following questions about your experiences since the COVID-19 outbreak.***

1. Has your smartphone use changed?

0	*1*	*2*	*3*	*4*
No change		*Some change*		*A lot of change*

2. Has your social networking use (i.e. Facebook, Instagram, Snapchat, TikTok) changed?

0	*1*	*2*	*3*	*4*
No change		*Some change*		*A lot of change*

3. Have your perceptions of support from your significant other changed?

0	*1*	*2*	*3*	*4*	*N/A*
No change		*Some change*		*A lot of change*	

4. Have your perceptions of support from your friends changed?

0	*1*	*2*	*3*	*4*
No change		*Some change*		*A lot of change*

5. Have your perceptions of support from your family members changed?

0	*1*	*2*	*3*	*4*
No change		*Some change*		*A lot of change*

6. Has your overall sense of well-being changed?

0	*1*	*2*	*3*	*4*

No change	*Some change*	*A lot of change*

7. Has your ability to control your emotions changed?

0	*1*	*2*	*3*	*4*
No change		*Some change*		*A lot of change*

8. Has your ability to control your thoughts changed?

0	*1*	*2*	*3*	*4*
No change		*Some change*		*A lot of change*

9. Has your ability to control your behaviour changed?

0	*1*	*2*	*3*	*4*
No change		*Some change*		*A lot of change*

For all questions above, if participants indicated a change they will be asked a follow-up question:

What was the direction of this change?

a) Positive
b) Negative
c) Both positive and negative
d) Not sure

<u>Part 2.</u> ***Please answer the following questions about your smartphone use and experiences.***

1. Do you currently own a smartphone?

Yes ____ *No* ____

2. In general, how often do you use your smartphone on an average day in a given week?

0	*1*	*2*	*3*	*4*

Not at all often *Not very often* *Somewhat often* *Often* *Very often*

3. In general, how much time do you spend on your smartphone on an average day in a given week?

Less than hour *1 hour* *2 hours* *3 hours* *4 hours* *5 hours* *6 hours* *7+ hours*

Please answer the following questions about your experiences with your smartphone.

4. My smartphone use has increased.

0 *1* *2* *3*

Strongly disagree *Disagree* *Agree* *Strongly agree*

5. I have missed planned work due to smartphone use.

0 *1* *2* *3*

Strongly disagree *Disagree* *Agree* *Strongly agree*

6. I involuntarily touch my smartphone.

0 *1* *2* *3*

Strongly disagree *Disagree* *Agree* *Strongly agree*

7. I have reduced my study time due to smartphone use.

0 *1* *2* *3*

Strongly disagree *Disagree* *Agree* *Strongly agree*

8. I use my smartphone for longer periods than I had intended.

0 *1* *2* *3*

Strongly disagree	*Disagree*	*Agree*	*Strongly agree*

9. I need to spend an increasing amount of time using my smartphone to achieve the same satisfaction as before.

0	*1*	*2*	*3*
Strongly disagree	*Disagree*	*Agree*	*Strongly agree*

10. I have tried to shorten my smartphone use time, but always fail.

0	*1*	*2*	*3*
Strongly disagree	*Disagree*	*Agree*	*Strongly agree*

11. Spending a lot of time on my smartphone has become a habit.

0	*1*	*2*	*3*
Strongly disagree	*Disagree*	*Agree*	*Strongly agree*

12. I feel anxious when I forget to take my smartphone with me or when I am not able to use my smartphone.

0	*1*	*2*	*3*
Strongly disagree	*Disagree*	*Agree*	*Strongly agree*

13. I feel impatient when my smartphone is unavailable.

0	*1*	*2*	*3*
Strongly disagree	*Disagree*	*Agree*	*Strongly agree*

14. I feel happy or excited while using a smartphone.

0	*1*	*2*	*3*

Strongly disagree	*Disagree*	*Agree*	*Strongly agree*

15. My smartphone is on my mind even when I am not using it.

0	*1*	*2*	*3*
Strongly disagree	*Disagree*	*Agree*	*Strongly agree*

16. I would not be able to tolerate not having a smartphone.

0	*1*	*2*	*3*
Strongly disagree	*Disagree*	*Agree*	*Strongly agree*

17. I feel anxious when I have not prepared my charging pack or battery for my smartphone.

0	*1*	*2*	*3*
Strongly disagree	*Disagree*	*Agree*	*Strongly agree*

18. I use my smartphone while walking.

0	*1*	*2*	*3*
Strongly disagree	*Disagree*	*Agree*	*Strongly agree*

19. I am able to get rid of stress by using a smartphone.

0	*1*	*2*	*3*
Strongly disagree	*Disagree*	*Agree*	*Strongly agree*

20. I don’t really want to go to places where smartphone signals are weak.

0	*1*	*2*	*3*
Strongly disagree	*Disagree*	*Agree*	*Strongly agree*

21. It would be painful if I was not allowed to use a smartphone.

0	*1*	*2*	*3*
Strongly disagree	*Disagree*	*Agree*	*Strongly agree*

<u>Part 3.</u> ***Please answer the following questions about your social networking use.***

1. In general, how often do you *browse* on social networking sites (i.e. Facebook, Instagram, Snapchat, and TikTok) on an average day in a given week?

0	*1*	*2*	*3*	*4*
Not at all often	*Not Very often*	*Somewhat often*	*Often*	*Very Often*

2. In general, how often do you *post* on social networking sites (i.e. Facebook, Instagram, Snapchat, and TikTok) on an average day in a given week?

0	*1*	*2*	*3*	*4*
Not at all often	*Not Very often*	*Somewhat often*	*Often*	*Very Often*

3. In general, how many hours do you spend *browsing* on social networking sites (i.e. Facebook, Instagram, Snapchat, and TikTok) on an average day in a given week?

Less than 1 hour *1 hour* *2 hours* *3 hours* *4 hours* *5 hours* *6 hours* *7+ hours*

4. In general, how many hours do you spend *posting* on social networking sites (i.e. Facebook, Instagram, Snapchat, and TikTok) on an average day in a given week?

Less than 1 hour *1 hour* *2 hours* *3 hours* *4 hours* *5 hours* *6 hours* *7+ hours*

5. Please indicate the social networking site(s) you currently have at least one active account.

Facebook *No* _____ *Yes* _____

Instagram *No* _____ *Yes* _____

Snapchat *No* _____ *Yes* _____

TikTok *No* _____ *Yes* _____

Below you find some questions about your relationship to and use of social networking sites (Facebook, Instagram, Snapchat, TikTok). Choose the response option for each question that best describes your experience(s).

How often since the COVID-19 pandemic have you ...

1. Spent a lot of time thinking about social networking sites or planned use of social networking sites?

1	*2*	*3*	*4*	*5*
Very rarely	*Rarely*	*Sometimes*	*Often*	*Very often*

2. Felt an urge to use social networking sites more and more?

1	*2*	*3*	*4*	*5*
Very rarely	*Rarely*	*Sometimes*	*Often*	*Very often*

3. Used social networking sites to forget about personal problems?

1	*2*	*3*	*4*	*5*
Very rarely	*Rarely*	*Sometimes*	*Often*	*Very often*

4. Tried to cut down on the use of social networking sites without success?

1	*2*	*3*	*4*	*5*
Very rarely	*Rarely*	*Sometimes*	*Often*	*Very often*

5. Become restless or troubled if you have been prohibited from using social networking sites?

1	*2*	*3*	*4*	*5*

Very rarely	*Rarely*	*Sometimes*	*Often*	*Very often*

6. Used social networking sites so much that it had a negative impact on your job?

1	*2*	*3*	*4*	*5*	*N/A*
Very rarely	*Rarely*	*Sometimes*	*Often*	*Very often*	

7. Used social networking sites so much that it had a negative impact on your studies?

1	*2*	*3*	*4*	*5*	*N/A*
Very rarely	*Rarely*	*Sometimes*	*Often*	*Very often*	

8. Used social networking sites so much that it had a negative impact on your sleep quality?

1	*2*	*3*	*4*	*5*
Very rarely	*Rarely*	*Sometimes*	*Often*	*Very often*

9. Which social networking account are you most dependent on?
    a. Facebook
    b. Instragram
    c. Snapchat
    d. Tik Tok
    e. Other (please specify) _____

<u>Part 4.</u> ***Read each statement carefully and indicate how you feel about each.***

1. There is a significant other who is around when I am in need.

0	*1*	*2*	*3*	*4*	*5*	*6*	*7*
N/A	*Very strongly disagree*	*Strongly disagree*	*Mildly disagree*	*Neutral*	*Mildly agree*	*Strongly agree*	*Very strongly agree*

2. There is a significant other with whom I can share joys and sorrows.

0	*1*	*2*	*3*	*4*	*5*	*6*	*7*
N/A	*Very strongly*	*Strongly disagree*	*Mildly disagree*	*Neutral*	*Mildly agree*	*Strongly agree*	*Very strongly*

disagree *agree*

3. My family really tries to help me.

1	*2*	*3*	*4*	*5*	*6*	*7*
Very strongly disagree	*Strongly disagree*	*Mildly disagree*	*Neutral*	*Mildly agree*	*Strongly agree*	*Very strongly agree*

4. I get the emotional help and support I need from my family.

1	*2*	*3*	*4*	*5*	*6*	*7*
Very strongly disagree	*Strongly disagree*	*Mildly disagree*	*Neutral*	*Mildly agree*	*Strongly agree*	*Very strongly agree*

5. I have a significant other who is a real source of comfort to me.

0	*1*	*2*	*3*	*4*	*5*	*6*	*7*
N/A	*Very strongly disagree*	*Strongly disagree*	*Mildly disagree*	*Neutral*	*Mildly agree*	*Strongly agree*	*Very strongly agree*

6. My friends really try to help me.

1	*2*	*3*	*4*	*5*	*6*	*7*
Very strongly disagree	*Strongly disagree*	*Mildly disagree*	*Neutral*	*Mildly agree*	*Strongly agree*	*Very strongly agree*

7. I can count on my friends when things go wrong.

1	*2*	*3*	*4*	*5*	*6*	*7*
Very strongly disagree	*Strongly disagree*	*Mildly disagree*	*Neutral*	*Mildly agree*	*Strongly agree*	*Very strongly agree*

8. I can talk about my problems with my family.

1	*2*	*3*	*4*	*5*	*6*	*7*
Very strongly	*Strongly disagree*	*Mildly disagree*	*Neutral*	*Mildly agree*	*Strongly agree*	*Very strongly*

disagree *agree*

9. I have friends with whom I can share my joys and sorrows.

1	*2*	*3*	*4*	*5*	*6*	*7*
Very strongly disagree	*Strongly disagree*	*Mildly disagree*	*Neutral*	*Mildly agree*	*Strongly agree*	*Very strongly agree*

10. There is a significant other in my life who cares about my feelings.

0	*1*	*2*	*3*	*4*	*5*	*6*	*7*
N/A	*Very strongly disagree*	*Strongly disagree*	*Mildly disagree*	*Neutral*	*Mildly agree*	*Strongly agree*	*Very strongly agree*

11. My family is willing to help me make decisions.

1	*2*	*3*	*4*	*5*	*6*	*7*
Very strongly disagree	*Strongly disagree*	*Mildly disagree*	*Neutral*	*Mildly agree*	*Strongly agree*	*Very strongly agree*

12. I can talk about my problems with my friends.

1	*2*	*3*	*4*	*5*	*6*	*7*
Very strongly disagree	*Strongly disagree*	*Mildly disagree*	*Neutral*	*Mildly agree*	*Strongly agree*	*Very strongly agree*

<u>Part 5:</u> ***Please indicate how you have been feeling over the past 2 weeks.***

1. I have felt cheerful and in good spirits.

0	*1*	*2*	*3*	*4*	*5*
None of the time	*Some of the time*	*Less than half the time*	*More than half the time*	*Most of the time*	*All of the time*

2. I have felt calm and relaxed.

0	*1*	*2*	*3*	*4*	*5*

None of the time	*Some of the time*	*Less than half the time*	*More than half the time*	*Most of the time*	*All of the time*

3. I have felt active and vigorous.

0	*1*	*2*	*3*	*4*	*5*
None of the time	*Some of the time*	*Less than half the time*	*More than half the time*	*Most of the time*	*All of the time*

4. I woke up feeling fresh and rested.

0	*1*	*2*	*3*	*4*	*5*
None of the time	*Some of the time*	*Less than half the time*	*More than half the time*	*Most of the time*	*All of the time*

5. My daily life has been filled with things that interest me.

0	*1*	*2*	*3*	*4*	*5*
None of the time	*Some of the time*	*Less than half the time*	*More than half the time*	*Most of the time*	*All of the time*

<u>Part 6.</u> ***Please answer how true each of the following statements are for you.***

1. When I'm sad, I can usually start doing something that will make me feel better.

1	*2*	*3*	*4*	*5*
Not at all true for me	*Not very true for me*	*Neither true nor untrue for me*	*Somewhat true for me*	*Really true for me*

2. When I'm bored I fidget or can't sit still.

1	*2*	*3*	*4*	*5*
Not at all true for me	*Not very true for me*	*Neither true nor untrue for me*	*Somewhat true for me*	*Really true for me*

3. I can usually act normal around everybody if I'm upset with someone.

1	*2*	*3*	*4*	*5*

Not at all true for me	*Not very true for me*	*Neither true nor untrue for me*	*Somewhat true for me*	*Really true for me*

4. I am good at keeping track of lots of things going on around me, even when I'm feeling stressed.

1	*2*	*3*	*4*	*5*
Not at all true for me	*Not very true for me*	*Neither true nor untrue for me*	*Somewhat true for me*	*Really true for me*

5. I can start a new task even if I'm already tired.

1	*2*	*3*	*4*	*5*
Not at all true for me	*Not very true for me*	*Neither true nor untrue for me*	*Somewhat true for me*	*Really true for me*

6. Little problems detract me from any long-term plans.

1	2	3	4	5
Not at all true for me	*Not very true for me*	*Neither true nor untrue for me*	*Somewhat true for me*	*Really true for me*

7. I forget about whatever else I need to do when I'm doing something really fun.

1	*2*	*3*	*4*	*5*
Not at all true for me	*Not very true for me*	*Neither true nor untrue for me*	*Somewhat true for me*	*Really true for me*

8. During a dull class, I have trouble forcing myself to pay attention.

1	*2*	*3*	*4*	*5*
Not at all	*Not very*	*Neither true*	*Somewhat*	*Really*

true for me	*true for me*	*nor untrue for me*	*true for me*	*true for me*

9. After I'm interrupted or distracted, I can easily continue working where I left off.

1	*2*	*3*	*4*	*5*
Not at all true for me	*Not very true for me*	*Neither true nor untrue for me*	*Somewhat true for me*	*Really true for me*

10. If there are other things going on around me, I find it hard to keep my attention focused on whatever I'm doing.

1	*2*	*3*	*4*	*5*
Not at all true for me	*Not very true for me*	*Neither true nor untrue for me*	*Somewhat true for me*	*Really true for me*

11. I never know how much more work I have to do.

1	*2*	*3*	*4*	*5*
Not at all true for me	*Not very true for me*	*Neither true nor untrue for me*	*Somewhat true for me*	*Really true for me*

12. It's hard to start making plans to deal with a big project or problem, especially when I'm feeling stressed.

1	*2*	*3*	*4*	*5*
Not at all true for me	*Not very true for me*	*Neither true nor untrue for me*	*Somewhat true for me*	*Really true for me*

13. I can calm myself down when I'm excited or all wound up.

1	*2*	*3*	*4*	*5*
Not at all true for me	*Not very true for me*	*Neither true nor untrue for me*	*Somewhat true for me*	*Really true for me*

<u>Part 7:</u> ***Please answer the following questions about yourself. With the exception of gender, demographic information will be used to describe participant population and not for any analyses.***

1. How old are you? _____ years old.

2. What is your gender?
   a) Male
   b) Female
   c) Another gender
   d) I prefer not to answer

3. How would you describe your race or ethnicity? _____

4. What is the highest education level that you have completed?
   a) Elementary school
   b) Junior high school
   c) High school diploma
   d) Some post-secondary education
   e) Complete post-secondary education
   f) Some university education
   g) Complete Bachelor's degree
   h) Graduate degree

Appendix E

Debriefing Form

Thank you so much for participating in my study that looked at the impact of technology use on relationship support and well-being. If you have any questions or concerns about the study, please feel free to contact myself, Heather Collins, at hecollins@grenfell.mun.ca or my supervisor, Dr. Holfeld at bholfeld@grenfell.mun.ca. As well, if you are interested in knowing the results of the study, please contact myself or Dr. Holfeld after April 2021.

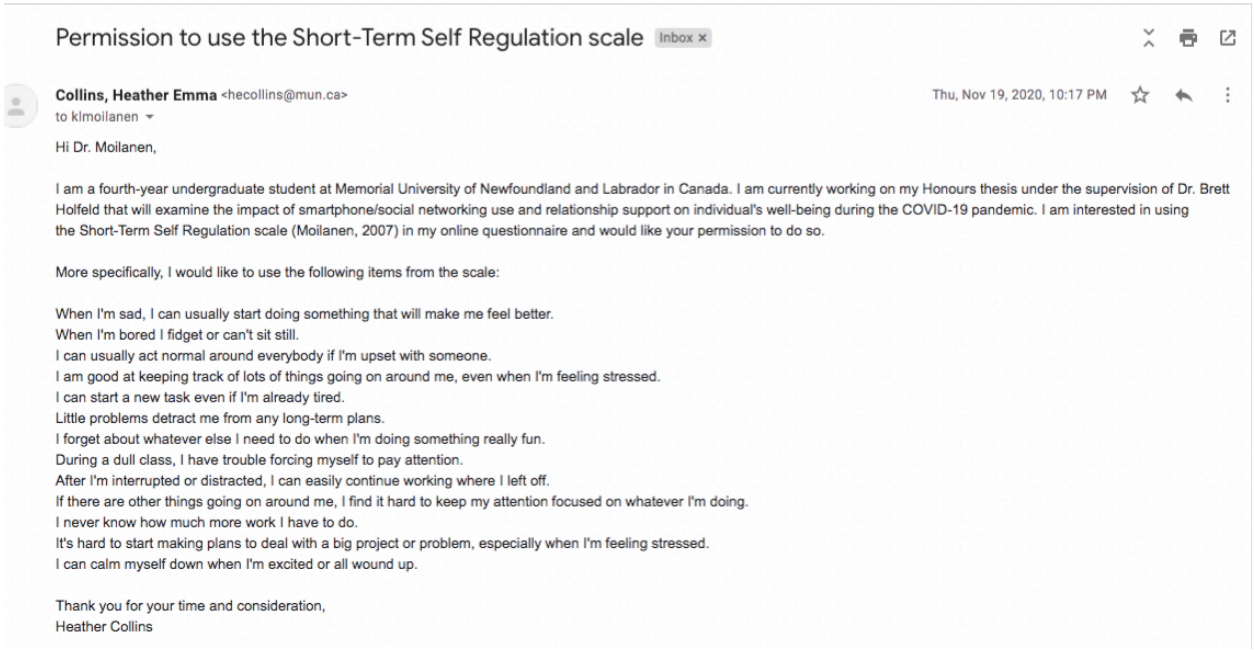
This study was approved by an ethics review process in the psychology program at Grenfell Campus, Memorial University and was found to be in compliance with Memorial University's ethics policy as well as Tri-council Policy on Ethics. If you have any questions, please contact Heather Collins at hecollins@grenfell.mun.ca or the research supervisor, Brett Holfeld at bholfeld@grenfell.mun.ca. If you have ethical concerns about the research (such as the way you have been treated or your rights as a participant), you may contact the Grenfell Campus Research Ethics Board through the Grenfell Research Office (gcethics@grenfell.mun.ca) or by calling 709-639-2736.

If this study raises any concerns for you, please contact the NL Mental Health Crisis Line at 1-888-737-4668 or the Canadian Crisis Hotline at 1-888-353-2273

Thank you again, I appreciate your participation immensely!

Appendix F

Permission to use Developed Scales



Permission to use the Short-Term Self Regulation scale Inbox ×

Collins, Heather Emma <hecollins@mun.ca> Thu, Nov 19, 2020, 10:17 PM
to klmoilanen

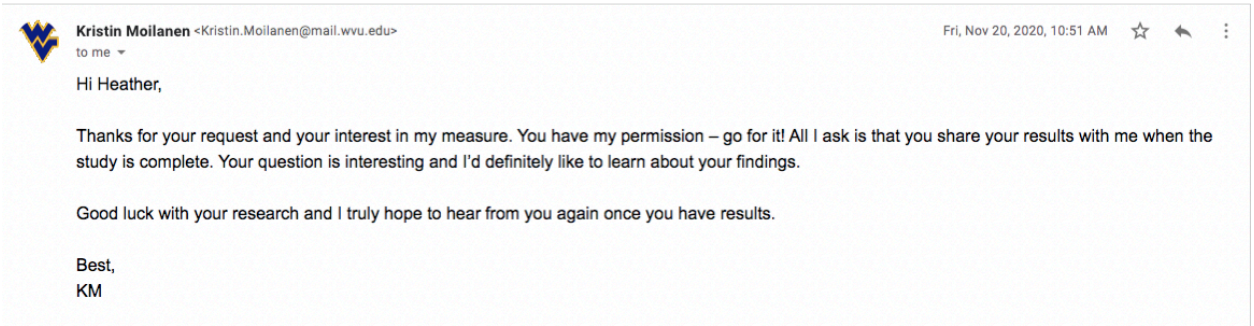
Hi Dr. Moilanen,

I am a fourth-year undergraduate student at Memorial University of Newfoundland and Labrador in Canada. I am currently working on my Honours thesis under the supervision of Dr. Brett Holfeld that will examine the impact of smartphone/social networking use and relationship support on individual's well-being during the COVID-19 pandemic. I am interested in using the Short-Term Self Regulation scale (Moilanen, 2007) in my online questionnaire and would like your permission to do so.

More specifically, I would like to use the following items from the scale:

When I'm sad, I can usually start doing something that will make me feel better.
When I'm bored I fidget or can't sit still.
I can usually act normal around everybody if I'm upset with someone.
I am good at keeping track of lots of things going on around me, even when I'm feeling stressed.
I can start a new task even if I'm already tired.
Little problems detract me from any long-term plans.
I forget about whatever else I need to do when I'm doing something really fun.
During a dull class, I have trouble forcing myself to pay attention.
After I'm interrupted or distracted, I can easily continue working where I left off.
If there are other things going on around me, I find it hard to keep my attention focused on whatever I'm doing.
I never know how much more work I have to do.
It's hard to start making plans to deal with a big project or problem, especially when I'm feeling stressed.
I can calm myself down when I'm excited or all wound up.

Thank you for your time and consideration,
Heather Collins



Kristin Moilanen <Kristin.Moilanen@mail.wvu.edu> Fri, Nov 20, 2020, 10:51 AM
to me

Hi Heather,

Thanks for your request and your interest in my measure. You have my permission – go for it! All I ask is that you share your results with me when the study is complete. Your question is interesting and I'd definitely like to learn about your findings.

Good luck with your research and I truly hope to hear from you again once you have results.

Best,
KM

Collins, Heather Emma <hecollins@mun.ca> Sun, Dec 13, 2020, 2:51 PM
to satoezoe

Hi Dr. Ezoe,

I have previously got in touch with you with requested permission to use your Japanese Version of the Smartphone Dependency Scale (J-SDS; Ezoe, Iida, Inoue & Toda, 2016), which you have generously granted. After some revision, I am looking to add more items from your scale to my current study, and I would like to make changes for two items from the scale.

Just as a reminder from my last email: I am a fourth-year undergraduate student at Memorial University of Newfoundland and Labrador in Canada. I am currently working on my Honours thesis under the supervision of Dr. Brett Holfeld that will examine the effects of smart-phone and social networking use as well as perceptions of relationship support on individual's well-being during the COVID-19 pandemic. I am interested in using some of the questions from your Japanese Version of the Smartphone Dependency Scale (J-SDS; Ezoe, Iida, Inoue, & Toda, 2016) in my online questionnaire and would like your permission to do so.

Specifically, I am interested in using the following items from the scale (all items from both the 'craving and withdrawal' and 'overuse and tolerance' subscales):

My smartphone use has increased.
I have missed planned work due to smartphone use.
I involuntarily touch my smartphone.
I have reduced my study time due to smartphone use.
I use my smartphone for longer periods than I had intended.
I need to spend an increasing amount of time using my smartphone to achieve the same satisfaction as before.
I have tried to shorten my smartphone use time, but always fail.
Spending a lot of time on my smartphone has become a habit.
I feel anxious when I forget to take my smartphone with me or when I am not able to use my smartphone.
I feel impatient when my smartphone is unavailable. **(NOTE: Changed from "I feel impatient and restless when my smartphone is unavailable")**
I feel happy or excited while using a smartphone. **(NOTE: Changed from "I feel pleasant or excited while using a smartphone")**
My smartphone is on my. mind even when I am not using it.
I would not be able to tolerate not having a smartphone.
I feel anxious when I have not prepared my charging pack or battery for my smartphone.
I use my smartphone while walking.
I am able to get rid of stress by using a smartphone.
I don't really want to go places where smartphone signals are weak.
It would be painful if I was not allowed to use a smartphone.

Thank you for your time and consideration,
Heather Collins

江副　智子 <medicochan@yahoo.co.jp> Jan 13, 2021, 8:43 PM (2 days ago)
to me, satoezoe@med.shimane-u.ac.jp

Thank you for your email.　I replied to your email about a month ago.　You may use the J-SDS.

Satoko Ezoe, MD., Ph.D
Professor, Health Service Center, Shimane University
...
****
江副　智子

国立大学法人　島根大学　学術研究院　教育研究推進学系　教授
（保健管理センター　教授・副センター長）

〒693-8501 島根県出雲市塩冶町89-1
Tel: 0853-20-2098
Fax: 0853-20-2097
E-mail: satoezoe@med.shimane-u.ac.jp

Permission to use MSPSS scale Inbox ×

Collins, Heather Emma <hecollins@mun.ca> Sat, Jan 16, 9:50 PM (1 day ago)
to gzimet

Hi there,

I am an undergraduate student at Memorial University of Newfoundland in Canada. I am hoping to use the MSPSS scale as part of my honours thesis, and I was wondering if I needed permission to use this scale?

Thank you,

Heather

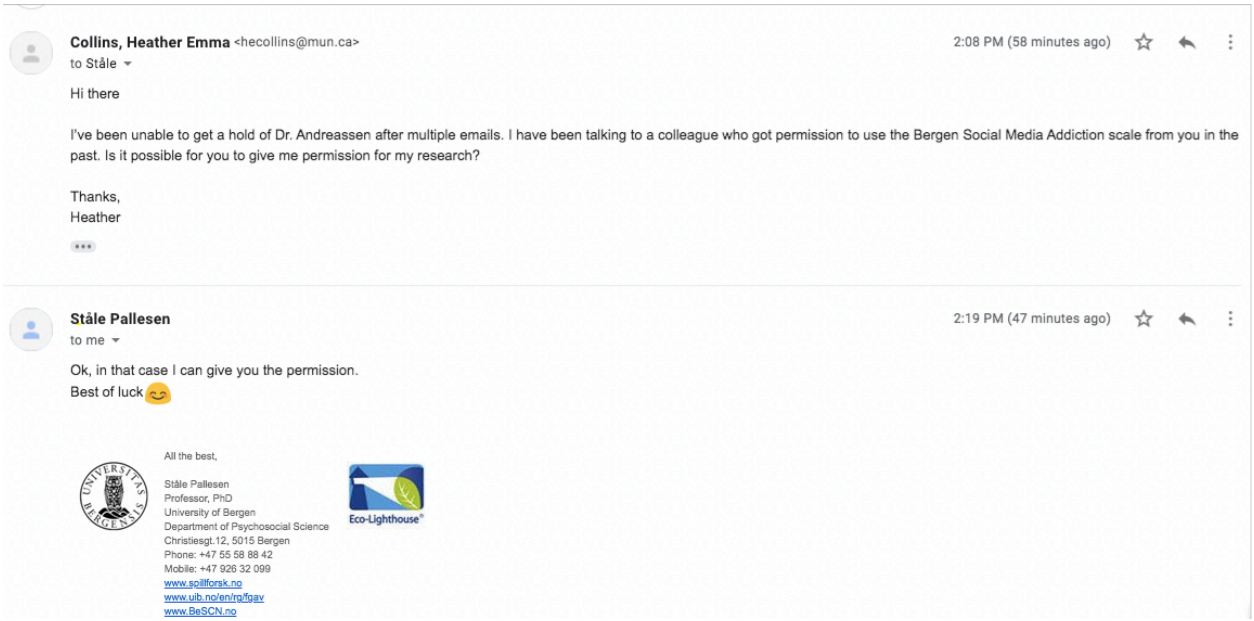
Zimet, Gregory D 4:08 PM (6 hours ago)
to me

Dear Heather,

You have my permission to use the Multidimensional Scale of Perceived Social Support (MSPSS) in your research. I have attached the original English language version of the scale (with scoring information on the 2nd page), a document listing several of the articles that have reported on the reliability and validity of the MSPSS, and a chapter that I wrote about the scale.

I hope your research goes well.

Best regards,
Greg Zimet



Collins, Heather Emma <hecollins@mun.ca> 2:08 PM (58 minutes ago)
to Ståle

Hi there

I've been unable to get a hold of Dr. Andreassen after multiple emails. I have been talking to a colleague who got permission to use the Bergen Social Media Addiction scale from you in the past. Is it possible for you to give me permission for my research?

Thanks,
Heather

Ståle Pallesen 2:19 PM (47 minutes ago)
to me

Ok, in that case I can give you the permission.
Best of luck

All the best,

Ståle Pallesen
Professor, PhD
University of Bergen
Department of Psychosocial Science
Christiesgt.12, 5015 Bergen
Phone: +47 55 58 88 42
Mobile: +47 926 32 099
www.spillforsk.no
www.uib.no/en/rg/fgav
www.BeSCN.no

Eco-Lighthouse

Scoring and interpretation

The WHO-5 consists of five statements, which respondents rate according to the scale below (in relation to the past two weeks).

- All of the time = 5
- Most of the time = 4
- More than half of the time = 3
- Less than half of the time = 2
- Some of the time = 1
- At no time = 0.

The total raw score, ranging from 0 to 25, is multiplied by 4 to give the final score, with 0 representing the worst imaginable well-being and 100 representing the best imaginable well-being.

Terms of use

The WHO-5 is free of charge and does not require permission to use.