

The Impact of Online Experiences across Social Networking Platforms

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A thesis submitted to the Psychology Program in partial fulfilment of the requirements for the degree of Bachelor of Science (Honours), School of

Arts and Social Science

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April 2020

Approval

The recommended acceptance of the thesis “The Impact of Online Experiences Across Social Networking Platforms” submitted by Sara J. Ford in partial fulfilment of the requirements for the degree of Bachelor of Science (Honours).

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## Acknowledgements

First, I would like to thank my supervisor, Dr. Brett Holfeld, for all the help that he has given me and all the patience that he has shown me throughout the process of completing this thesis. I would also like to thank my alternate reader, Dr. Daniel Nadolny, for taking the time to aid in this process.

Finally, I would like to thank my family who have shown me immeasurable support throughout my completion of my degree.

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## Abstract

Exclusion, one of the most frequent forms of relational victimization, is associated with negative psychological outcomes among adults. However, little is known about the emotional impact of online exclusion, particularly across social networking platforms. The current study used an experimental paradigm to examine 1) the impact of online exclusion (not being acknowledged in a group chat, not being included in a picture, and not being invited) across Facebook, Instagram, and Twitter on adults' emotions; and 2) the moderating effect of Fear of Missing Out (FOMO) on the association between social networking platform use and well-being. Participants included 270 adults aged 18 to 72 ( $M = 31.73$ ,  $SD = 13.95$ ; 84.9% females) who completed an online survey. The majority of participants reported having a social networking account and indicated greater use with Facebook in comparison to Snapchat or Instagram. Findings from 2-way independent measures analysis of variances (ANOVAs) indicated that participants felt more annoyed and surprised when excluded via a group chat than a picture and more betrayed when excluded via no invite than a group chat. Findings from a hierarchical regression model revealed that FOMO moderated the relationship between Snapchat use and well-being. Specifically, low Snapchat use was associated with higher well-being when levels of FOMO were low. The results of this study may help adults to recognize how online experiences such as exclusion can impact their own and others' emotions, and how the use of and connection with social networking platforms contributes to well-being.



### **The Impact of Online Experiences across Social Networking Platforms**

Peer victimization is a common experience for individuals of all ages. According to Hymel and Swearer (2015), 10% to 33% of children and adults report at least some experience with peer victimization. Although traditional forms of peer victimization have been studied extensively (Desjardins & Leadbeater, 2011; Park, Jensen-Campbell, & Miller, 2017; Wang, Iannotti, Luk & Nansel, 2010), one particular form of peer victimization that is important to consider is relational victimization. Relational victimization involves attempts to damage one's relationships or social reputation (Crick & Grotpeter, 1996), while other traditional forms of peer victimization (e.g., physical or verbal) may not share this common goal. Rather, these types of traditional peer victimization are intended to hurt an individual physically or mentally (Attar-Schwartz & Khoury-Kassabri, 2015; Lento, 2006). Relational victimization involves repeated and aggressive acts experienced by one or more peers through gossip, exclusion or rumours (Park, et al., 2017; Putallaz et al., 2007). Research demonstrates a clear link between relational victimization and psychological outcomes (Feinstein, Bhatia & Davila, 2014; Holterman, Murray-Close & Bresland, 2016; Wang et al., 2010). Specifically, higher levels of relational victimization are associated with poorer psychological outcomes like greater symptoms of depression or anxiety. However, the impact of specific forms of relational victimization is not known as research typically focuses on individuals' overall experiences of relational victimization (Desjardins & Leadbeater, 2011; Holterman et al., 2016). Since exclusion is one of the most frequent forms of relational victimization (Park et al., 2017), it is important to consider the unique impact of these experiences.

Exclusion can be defined as “the experience of being kept apart from others physically (e.g., social isolation) or emotionally (e.g., being ignored)” (Riva & Eck, 2016, p. 9). Exclusion can take many forms such as rejection (e.g., being told or implied that one is not wanted) or ostracism (e.g., being ignored or kept ‘out-of-the-loop’) (Wesselmann et al., 2016). Research shows that experiences of exclusion can be experienced at any point in the lifespan (Knack, Iyer & Jensen-Campbell, 2011) and may be associated with negative affect (e.g., anger, humiliation, sadness, or shame) and poor mental health (e.g., depression, anxiety, or low self-esteem) (Reavis, Donohue, & Upchurch, 2015; Wesselmann et al., 2016). As experiences of exclusion may vary, it is also possible that these experiences have a differential impact on individuals (Wesselmann, Butler, Williams & Pickett, 2010).

Although face-to-face experiences of exclusion appear to have a similar negative impact to online experiences within a chat room (Filipkowski & Smyth, 2012), little is known about the impact of these experiences across social networking platforms. Research that has considered exclusion via social networking platforms have examined hypothetical experiences (Smith, Morgan & Monks, 2017) or experiences via Facebook only (Covert & Stefanone, 2018; Hayes, Wesselmann & Carr, 2018). However, experiences of exclusion also occur through other popular social networking platforms such as Instagram and Snapchat but have not been investigated. Further, past research has not explored the impact of different experiences of exclusion on emotions across these social networking platforms. The present study will address these gaps in the literature to examine the impact of online exclusion experiences on adults’ emotions across Facebook, Instagram, and Snapchat.

### **Exclusion Experiences in Face-to-Face Settings**

Research with adolescents shows that face-to-face experiences of exclusion are associated with negative emotional reactions (e.g., increased feelings of anger or aggression), a decrease in expression of positive emotions and a range of negative psychological outcomes such as depression or anxiety (Smith et al., 2017; Wirth et al., 2017). Williams (2009) described a few different paradigms that can be used to study exclusion. These include the ball toss paradigm (e.g., Cyberball) in which a participant is sitting in a waiting room with two confederates when a game of ball toss emerges. The participant only receives the ball a few times, and then never again while the confederates continue to toss the ball to only each other. Williams and Sommer (1997) used this paradigm and found that participants experienced negative affect and threat to their basic needs. Similar results can be seen in the conversation paradigm which includes a group discussion where two confederates begin only talking to each other and not to the participant. The use of different exclusion paradigms highlights the unique impact it can have on individuals.

Responses to exclusion can also depend on the type of exclusion experienced. For example, Tuscherer et al. (2016) examined reactions to perceived fair and unfair exclusion. Participants were given one of two writing prompts: “think about a time that you were excluded from a group (e.g., group of friends, teammates, organizations you belong to), even though you did nothing clearly wrong or inappropriate” or “think about a time that you were excluded from a group for something you did that was wrong or inappropriate”. Results revealed a decreased in need satisfaction in both groups, however, it was exacerbated in the unfair exclusion condition.

Similarly, Wirth, Bernstein, Wesselmann and LeRoy (2017) instructed participants to imagine themselves playing a trivia game with opponents whose behavioural cues were described as being inclusionary (i.e., happy tone, encouraging comments) or exclusionary (i.e., angry tone, disparaging comments). Based on these cues, participants then indicated how much they expected to be excluded by the other players in future games. Participants were assigned to read one of two scenarios based on whether the other players would want to play with them in the future: “your group decides and *no one* chooses you as someone they’d like to play with” or “your group decides and *everyone* chooses you as someone they’d like to play with”. Participants who received exclusionary cues reported a greater expectation that they would be excluded in future rounds of the game than those who received inclusionary cues. The researchers found that participants felt worse when rejected after receiving inclusionary cues than if they were rejected after receiving exclusionary cues. These results show that the impact of exclusion on individuals depends on whether they experience expected or unexpected exclusion. Further, these results highlight another example of how different types of exclusion can produce differing impacts on people.

### **Relatedness, Belonging and Connectedness in Understanding Social Networking**

#### **Platform Use**

There are several theories that describe the importance of human relationships for satisfying basic human needs. According to Deci and Ryan’s (2000) Self-Determination Theory, humans have three basic psychological needs that are essential for optimal development and well-being: Autonomy, competence and relatedness. Autonomy can be described as a feeling of volition and psychological freedom (Gillett et al., 2019).

Competence can be described as “the degree to which individuals feel effective in their ongoing interactions with the social environment” (Bartholomew et al., 2011, p. 1459).

The need for relatedness involves the need to feel connected with others. When the need for relatedness is satisfied, higher levels of well-being are reported among adults (Shiraki & Igarashi, 2018). However, if the basic psychological needs are not satisfied, a deficit in well-being and overall mental health can occur (Deci & Ryan, 2000). For the purpose of this study, I will focus primarily on the need for relatedness, as it relates directly to communication in online settings, such as social networking platforms.

The need for belonging which is similar with the need for relatedness involves the need to feel connected with others. It has been suggested that the need for belonging is an innate human characteristic (Baumeister & Leary, 1995). According to Baumeister and Leary, the need for belonging can be described as “a pervasive drive to form and maintain at least a minimum quantity of lasting, positive, and significant interpersonal relationships” (p. 497). In order to satisfy the need for belonging, frequent and pleasant interactions with others are necessary. Maslow (1968) also discusses the need for belonging, placing it in the middle of his hierarchy of needs, after physiological and safety needs. The need for relatedness and the need for belonging together have been described as social connectedness (Van Bel et al., 2009). According to Cruwys et al. (2014), the impairment of social connectedness can cause or maintain depressive symptoms. These basic human needs can be easily satisfied by connecting with family and friends in online settings.

Many social relationships and interactions take place online due to the increased popularity of social networking platforms such as Facebook, Snapchat and Instagram

(Twenge, Martin & Spitzberg, 2018; Twenge, Spitzberg & Campbell, 2019). These online platforms have become a primary means of communication for individuals of all ages, particularly for young adults (Lima, Marques, Muinos & Camilo, 2017). Social networking platforms support different types of communication. For example, targeted, composed communication consists of written text for a specific individual (e.g., typically on a wall post or comment). “One click” communication consists of targeted feedback such as “likes” or “favorites”. Finally, broadcasted communication includes status updates or sharing photos that are aimed at wide audiences (Burke & Kraut, 2016). Communication is essential for maintaining social relationships and using social networking platforms for this purpose is one way to satisfy the need for relatedness and the need for belonging.

An individual’s ability to communicate with others can be threatened by certain experiences such as exclusion. For example, in a case where an individual’s status on a social networking platform receives a lack of expected feedback, they may perceive it as a form of exclusion (Deters & Mehl, 2013). When individuals are excluded from social interactions in online settings, the need for relatedness or belonging may not be satisfied and can contribute to both social and emotional distress (Bernstein & Claypool, 2012). These effects may be exacerbated when exclusion occurs within social networking platforms.

In Canada, 94% of adults aged 18 or older report using at least one social networking account. Among these adults, 84% report having a Facebook account, 37% report having an Instagram account and 22% report having a Snapchat account (Mai, 2018). Facebook may be the most popular social networking platform because it offers

the widest range of use in comparison to other platforms (Hughes, Rowe, Batey & Lee, 2012). For example, Facebook gives users the ability to post thoughts *without* a character count, share other people's posts (i.e., statuses, photos and videos) with friends instantly, post on friends' profiles, be a part of different social groups, buy and sell items and keep up with the news. Similarly, Instagram allows users to post photos and interact with others directly however it differs from Snapchat because posts can remain on your account indefinitely. Snapchat differs from both Facebook and Instagram because Snapchat's sent to friends only last for a few seconds before disappearing. Snapchat's use is limited to communicating directly with friends and posting pictures for friends to view. Instagram and Snapchat, while still widely used, offer a much narrower range of use than Facebook. Neither Instagram nor Snapchat give users the option to join specific social groups, post with an unlimited character count, post on friends' profiles or buy and sell items. Given that these social networking platforms are used for different purposes, it is possible that the impact of exclusion would also differ across the platforms. Based on the popularity and widespread use of Facebook, it is expected that exclusion via Facebook would have a more negative impact on adults' emotions in comparison to the same experiences via Instagram or Snapchat.

### **Online Exclusion Including through Social Networking Platforms**

Although investigations of online exclusion are limited (Sacco, Bernstein, Young & Hugenberg, 2014; Wesselmann, Wirth & Bernstein, 2017), emerging research suggests that the impact of these experiences may be similar to face-to-face exclusion (Filipkowski & Smyth, 2012; Schneider et al., 2017). Past research that has examined exclusion in online settings provides a framework for the current study. For example, Filipowski and

Smyth (2012) compared adult's reactions to being excluded face-to-face and in an online chatroom. In both conditions, participants were meant to have a 'get to know you' conversation with two confederates. During these conversations, the first confederate would ask the real participant something about themselves. Later, both the confederates discover that they have a similar interest in a band that is not commonly known and continue to talk about it. If the real participant attempted inclusion after this, their comments or questions were ignored by the confederates, which simulated exclusion. The researchers found that the face-to-face and chatroom conditions produced similar reactions in terms of affect. Participants experienced a decrease in positive affect after being excluded in either condition.

Another example of how online exclusion can elicit negative reactions comes from Wirth et al. (2017) who had participants complete an online version of the get acquainted paradigm in which they answered 10 questions about themselves and read the responses of the other participants (experimenter-controlled). Participants were either given a score of 8, indicating that the other participants liked them or a score of 3, indicating the other participants disliked them. Participants indicated how much they expected to be rejected by the other participants in the future, based on the scores they received. The participants then learned that either all of the other participants or none of the other participants wanted to work with them. The results showed that when participants received a high score and then experienced rejection from the other participants, they reported greater feelings of ostracism. However, when the participants were given a lower score and then experienced rejection by the other participants, they



reported low feelings of ostracism. These findings are relevant because they suggest that different types of online exclusion may produce a unique impact on individuals.

In early research, Bernstein and Claypool (2012) examined the impact of exclusion via a computer game among undergraduate students. The researchers had participants complete a Cyberball paradigm in which they believed they were playing a virtual game of ball toss with two other individuals over a computer. Participants in the exclusion condition (e.g., had the ball tossed to them a few times and then never again) reported lower emotional well-being and fulfillment of psychological needs (e.g., relatedness) than participants in the inclusion condition (e.g., received the ball consistently throughout the game).

To date, only 3 studies (Covert & Stefanone, 2018; Hayes et al., 2018; Smith et al., 2017) have examined exclusion experiences specifically on social networking platforms. However, these studies used hypothetical scenarios and consider exclusion via Facebook only. For example, Smith et al. (2017) asked participants to read a hypothetical short story involving exclusion and imagine themselves as the main character. The story involved an individual noticing that people were not interacting with them on Facebook as much as they used to. The individual discovers that a few of their friends have de-friended them on this social networking platform but continue to use it since they have been commenting on other people's posts. The individual also notices that when they comment on other people's posts, their comments are ignored. After participants read this story, they were instructed to think about how they would feel if they were in that situation. Participants reported that the hypothetical exclusion scenario would decrease

their mood (i.e., positive affect such as reduced excitement and interest) and pose a threat to the satisfaction of their basic psychological needs.

Similarly, Covert and Stefanone (2018) examined the impact of exclusion via Facebook. In this online study, undergraduate participants were asked to write the first names of their two closest friends. Then, participants were randomly assigned to either an exclusion condition or an inclusion condition and presented with a hypothetical scenario. The scenario described an exchange on Facebook between their two closest friends in which they were included or excluded. The participants in the exclusion condition were asked to imagine that their two closest friends had been posting on each other's Facebook walls and failed to include them. In the inclusion condition, participants were asked to imagine that their two closest friends had been frequently interacting with them by posting on their Facebook wall. The excluded individuals displayed more negative emotional responses (e.g., anger, resentment, helplessness) compared to participants who were in the inclusion condition. One particular study investigated the lack of acknowledgement of a Facebook post as being a type of exclusion (e.g., being ignored) that can occur (Hayes et al., 2018). Focus groups were created, and the groups were asked to discuss their reactions when posts made on Facebook did not receive the amount of likes that were expected. During discussions, participants frequently mentioned that they felt "bummed", embarrassed or perplexed when their posts on Facebook received few or no likes. However, it was found that participants experienced a feeling of perceived exclusion when significant individuals in their lives (e.g., friends, romantic partner or other connections considered socially meaningful) did not like their posts.

Although past research shows how different types of exclusion (offline, hypothetical, Facebook) may impact individuals in different ways, no study to date has examined how different types of exclusion experienced across popular social networking platforms impacts adults' emotions. The current study will extend past research by examining how exclusion experienced on Facebook, Snapchat, and Instagram can influence adults' emotions. Specifically, online exclusion included experiences such as: 1) not being acknowledged in a group chat; 2) not being included in photos; and 3) not being invited to hang out with friends but later seeing them post online about hanging out. Given that Facebook is the only social networking platform that has been studied in relation to exclusion, it is expected that Facebook will have more of an impact on adult's emotions than Instagram or Snapchat.

### **Fear of Missing Out**

One factor that might explain how an individual reacts to exclusion experienced through social networking platforms is their desire to stay connected with what others are doing. Specifically, fear of missing out (FOMO) is defined as "a pervasive apprehension that others might be having rewarding experiences from which one is absent" (Przybylski et al., 2013, p. 1841). FOMO is not only experienced by social networking site users but individuals who are high in FOMO may feel more compelled to constantly check their accounts on social networking platforms, in order to avoid feeling left out (Oberst et al., 2017).

Increased levels of FOMO are associated with an unsatisfied need for relatedness, increased social networking platform use, and more negative emotional reactions (Alt, 2015; Blackwell et al., 2017; Przybylski et al., 2013; Wolniewicz et al., 2018). The

relationship between FOMO and the need for relatedness is demonstrated in a study conducted by Przybylski et al. (2013) in which adults completed an online survey. The researchers found that participants who reported high FOMO also reported low levels of satisfaction of their need for relatedness. For individuals with a high level of FOMO, it was important to stay 'in the loop'. When an individual felt 'out of the loop', they could be actively kept in the dark about a topic that is being discussed or they could be withheld information that others are given. When people are 'out of the loop', they may experience negative psychological effects (i.e., loneliness, depression) (Jones, Carter-Sowell, Kelly & Williams, 2009). The drive to stay constantly connected with others may also negatively impact ones' psychological well-being. For example, Fox and Moreland (2015) examined Facebook use among adults and found that high levels of FOMO were related to depressive symptoms. Even though participants displayed negative emotions about feeling 'tethered' to Facebook, they also stated that they could not cease using the social networking platform. The researchers found that participants frequently mentioned FOMO on new social information that they could receive on social networking platforms. Since individuals who are high in FOMO are compelled to stay in the loop to avoid negative psychological effects, it is expected that the association between social networking platform use and overall well-being would be heightened for individuals who experience greater FOMO.

### **Current Study**

In the current study, a scenario-based experimental design was used to examine how different types of exclusion (i.e., not being acknowledged in a group chat, not being included in photos and not being invited to hang out with friends) experienced across

social networking platforms (Facebook, Instagram and Snapchat) impacts adults' emotions. First, it was hypothesized that exclusion via Facebook would have a greater negative impact on adults' emotions than the experiences of exclusion via Instagram or Snapchat. Second, it was hypothesized that FOMO would moderate the association between social networking platform use and well-being. Specifically, it was expected that the association between social networking use and well-being would be heightened for adults who report high levels of FOMO compared to those who report low levels of FOMO.

## **Method**

### **Participants**

A convenience sample of undergraduate students at Grenfell Campus, Memorial University of Newfoundland and members of the general public who were at least 19 years of age or a college/university student were recruited for this study. There were 270 participants in total (84.9% females) aged 18 to 72 ( $M_{\text{age}} = 31.73$  years,  $SD = 13.95$ ) with the majority of the sample identifying as Caucasian (94.3%). Approximately half of the participants completed some university education, a bachelor's degree, or a graduate degree (46.5%). Participation in the study was completely voluntary.

Participants were recruited through the Grenfell Campus Psychology participant pool, through posters placed around campus, and through posts on my personal Facebook account. A brief description and a link were provided to participants during the recruitment process. Before participating in this online study, participants were asked to complete an informed consent form.

### **Procedure**

Participants were invited to respond to an online questionnaire administered on Qualtrics.com and were notified of the ongoing study on Facebook. After clicking on the link, participants were brought to an informed consent page (Appendix A). By proceeding to the next page, consent was assumed, and it was assumed that participants were at least 19 years of age or a college/university student.

Using an experimental paradigm, participants were randomly assigned to receive one of three online exclusion scenarios upon starting the questionnaire: not being acknowledged in a group chat, not being included in pictures, and not being invited to hang out with friends. Participants were also randomly assigned to one of three social networking platform conditions on which the hypothetical exclusion scenario would take place: Facebook, Instagram, or Snapchat. Participants then received the same questionnaire (Appendix B) and it took participants approximately 10 minutes to complete. Once the questionnaire was completed, participants were presented with an end of study form (Appendix D).

### **Materials**

An informed consent form, questionnaire and end of study form were used to complete the online questionnaire. The informed consent form (Appendix A) included contact information for the researcher and information about the study such as the purpose, task requirements, duration and any potential risks and/or benefits that are associated with participation. Participants were informed that their responses would remain anonymous and that they had the right to withdraw from the study at any time.

The online questionnaire assessed participant's experiences across social networking platforms (Facebook, Instagram and Snapchat). The questionnaire assessed

participants' emotional reactions to hypothetical exclusion scenarios. The questionnaire included 5 sections that are outlined below.

**Emotional reactions.** Participants were asked to read the hypothetical scenario that they were assigned and respond to the questions that followed based on how they would feel in that situation. Specifically, participants were asked to self-report their emotional reactions to being excluded. Participants were asked to indicate their level of 10 different emotions: anger, hurt, annoyance, surprise, nervousness, calmness, betrayal, confusion, insecurity and forgiveness. Arousal of each emotion was measured on a 5-point likert scale (1 = *Not at all*, 3 = *Somewhat*, 5 = *Very*).

**Experiences with social networking platforms.** Participants were asked to self-report their use of Facebook, Instagram and Snapchat. Participants were asked about their access to and use of each social networking platform. For example, if participants indicated that they currently had at least 1 active account on Facebook, they were asked to report how many hours they spend on Facebook on an average day, how often they engage in certain activities on Facebook such as browsing (i.e., scrolling through), posting a story, posting a picture, using a group chat and replying back to a message in a group chat. Participants were also asked to indicate the main reason(s) they use Facebook (e.g., keeping in touch with friends, meeting new people, keeping up with news), how dependent they felt on their Facebook account and indicate the main reason(s) they feel dependent on their Facebook account. These questions were consistent for each social networking platform.

**Fear of missing out.** Participants were asked about their desire to stay connected with others using the 10-item Fear of Missing out Scale (FOMOs; Przybylski, et al.,

2013). Przybylski et al. (2013) found this scale to have strong reliability (i.e.,  $\alpha$  ranging from 0.87 to 0.90). Previous research has also found support for strong convergent validity of the scale (Wolniewicz et al., 2018). Participants were asked about their fears or worries about being out of touch with others, events and experiences in their social environment (e.g., “I fear others have more rewarding experiences than me.”, “I get worried when I find out my friends are having fun without me”). Participants rated each experience on a 5-point Likert scale (1 = *not at all true of me*, 2 = *slightly true of me*, 3 = *moderately true of me*, 4 = *very true of me*, 5 = *extremely true of me*). Scores were computed by averaging responses to all items with higher scores reflecting greater levels of FOMO ( $\alpha = 0.87$ ).

**Well-being.** Participants were asked about their overall well-being (i.e., anxiety, depression and life functioning) using the General Population in Routine Evaluation Scale (GP-CORE; Evans, Connell, Audin, Sinclair & Barkham, 2005). Evans et al. (2005) found this scale to have strong reliability (i.e.,  $\alpha = 0.90$ ). As well, they found this scale to have strong convergent validity with 5 validated measures of psychological well-being. Participants were asked to rate 14 items on how they have felt over the last week (e.g., “I have felt tense, anxious or nervous”, “I have felt able to cope when things go wrong”, “I have felt OK about myself”) on a 5-point Likert scale (0 = *not at all*, 1 = *only occasionally*, 2 = *sometimes*, 3 = *often*, 4 = *most or all the time*). After reverse scoring some of the items, scores were averaged across all items with lower scores indicating lower levels of distress and higher overall well-being ( $\alpha = 0.89$ ).

**Demographics.** Participants were asked about their age, gender, race/ethnicity and their highest level of education completed.



After completing the questionnaire, participants were brought to an end of study form (Appendix D) which thanked them for their participation and included contact information for the researcher, the Grenfell Campus Research Ethics board, Counselling and Psychological services at Grenfell Campus, and the NL Mental Health Crisis Line in case they had any questions or concerns regarding the study. Participants were also notified that they could contact the researcher regarding the results of the study after April 3<sup>rd</sup>, 2020.

### **Data Analysis**

All analyses were conducted using IBM SPSS Statistics 25.0. Descriptive statistics and bivariate correlations were computed to examine the relationships among all study variables. Social networking use was converted into minutes to allow for ease of interpretation in all analyses. To test the first hypothesis, a series of two-way (3x3) univariate analyses of variance (ANOVAs) were computed to examine the impact of social networking platform (Facebook, Instagram, Snapchat) and exclusion (group chat, picture, no invite) on participants' self-reported emotions. Key assumptions of ANOVA such as the independence of observations, homogeneity of variances (e.g., Levene's test) and outliers (i.e., Box Plot) were tested. Post-hoc tests were used to probe significant main effects. Simple effects analyses with split files were used to probe significant interaction effects. Positive emotions were reverse scored and re-tested to test for differences in the impact on emotional arousal. To examine the second hypothesis, a hierarchical regression analysis was computed to examine whether FOMO and social networking platform use (minutes) predicted participants' well-being. Step 1 of the regression model included age and gender as covariates. Step 2 included FOMO,

Facebook use, Instagram use and Snapchat use. Step 3 included two-way interactions between FOMO and Facebook use, FOMO and Instagram use, and FOMO and Snapchat use. All continuous variables were mean centered before interaction terms were created to reduce the risk of multi-collinearity (Aiken & West, 1991). Significant interactions were plotted using the two-way interactions template created by Dawson (2014).

## Results

### Descriptive Statistics

Means and standard deviations for the self-reported emotions experienced across social networking platforms and exclusion conditions are presented in Table 1. Overall, the mean emotional arousal that participants reported on Facebook, Instagram and Snapchat were 3.03 ( $SD = 1.23$ ), 3.17 ( $SD = 1.26$ ) and 2.99 ( $SD = 1.29$ ), respectively. Based on mean values, the impact of exclusion experiences on self-reported emotional arousal also varied by the type of social networking platform. For example, mean emotional arousal in the group chat condition for Facebook, Instagram and Snapchat was 2.93 ( $SD = 1.27$ ), 3.31 ( $SD = 1.14$ ) and 2.83 ( $SD = 1.23$ ), respectively. Mean emotional arousal in the picture condition for Facebook, Instagram and Snapchat was 3.12 ( $SD = 1.30$ ), 3.13 ( $SD = 1.23$ ) and 3.04 ( $SD = 1.25$ ), respectively. Finally, mean emotional arousal in the invite condition for Facebook, Instagram and Snapchat was 3.12 ( $SD = 1.30$ ), 3.20 ( $SD = 1.35$ ) and 3.08 ( $SD = 1.22$ ), respectively.

Self-reported use of social networking platform was high across all participants. For example, 96.6% of participants reported at least one Facebook account, 91.5% reported at least one Snapchat account, and 66.3% reported at least one Instagram account. On average, participants reported spending more time on Facebook (134.80

minutes) than Snapchat (105.54 minutes) or Instagram (86.88 minutes) on a daily basis. Participants also reported that they felt most dependent on Facebook, followed by Snapchat and Instagram. Browsing was the most engaged in social networking platform activity across Facebook and Instagram while sending a picture was the most engaged in activity on Snapchat. Keeping in touch with friends (82.2%) was the main reason participants use Facebook, followed by keeping in touch with family (78%) and keeping up with news (48.4%). The main reason participants indicated for using Instagram was also keeping up with friends (42.4%), followed by keeping up with celebrities/influencers (32.9%), connecting with people known but rarely seen (28.3%) and sharing personal information (27.6%). The main reason participants reported using Snapchat was keeping in touch with friends (50%) and sharing personal information (19.1%).

Bivariate correlations between all variables used in the regression model are presented in Table 2. Facebook and Instagram use, but not Snapchat use, were significantly related to participants' self-reported well-being ( $r$  range = .20 to .27,  $p < .001$ ). Thus, higher Facebook use and Instagram use were related to lower well-being. FOMO was significantly associated with participants' well-being ( $r = .52$ ,  $p < .001$ ) with higher levels of FOMO related to poorer well-being. FOMO was also significantly positively associated with social networking use across all platforms ( $r$  range = .22 to .32,  $p < .001$ ).

### **Two-way ANOVAs Comparing the Impact on Emotions across Social Networking Platforms and Exclusion Conditions**

Levene's test was used to examine the assumption of homogeneity of variance and was significant for emotions of anger ( $p = .019$ ) and nervousness ( $p = .003$ ),

suggesting that the respective variances were not equal. Although transformations can be used for these emotions, it was outside the scope of the research and they were not analyzed further. A series of two-way ANOVAs were conducted to determine the impact of social networking platform (Facebook, Instagram, Snapchat) and exclusion (group chat, picture, no invite) on participants' self-reported emotions. These are outlined below for the 8 emotions tested.

A two-way ANOVA was conducted to test whether exclusion via Facebook had a greater negative impact on participants' feeling of hurt than the Snapchat or Instagram conditions. Main effects were not significant for social networking platform,  $F(2, 254) = 1.97, p = .141, \eta_p^2 = .015$ , or exclusion,  $F(2, 254) = 2.84, p = .060, \eta_p^2 = .022$ . Further, the interaction between social networking platform and exclusion was also not significant,  $F(4, 254) = 1.94, p = .104, \eta_p^2 = .030$ .

A two-way ANOVA was conducted to test whether exclusion via Facebook had a greater negative impact on participants' feelings of annoyance than the Instagram or Snapchat conditions. A main effect was significant for exclusion,  $F(2, 256) = 3.60, p = .029, \eta_p^2 = .027$ , but not for social networking platform,  $F(2, 256) = 1.72, p = .182, \eta_p^2 = .013$ . Further, the interaction between social networking platform and exclusion was not significant,  $F(4, 256) = 1.07, p = .370, \eta_p^2 = .017$ . Post-hoc tests were used to probe the significant main effect for exclusion. There was a significant difference in how annoyed participants felt if they were excluded via a group chat ( $M = 3.28, SD = 1.19$ ) than if they were excluded via a picture ( $M = 2.78, SD = 1.29$ ). Participants who were in the group chat condition indicated they would feel more annoyed than participants in the picture condition (mean difference = .50,  $p = .019, 95\% CI [0.08, 0.93]$ ).

A two-way ANOVA was conducted to test whether exclusion via Facebook had a greater negative impact on participants' feelings of surprise than the Instagram or Snapchat conditions. Main effects were not significant for social networking platform,  $F(2, 256) = 0.62, p = .537, \eta_p^2 = .005$ , or exclusion,  $F(2, 256) = 0.29, p = .750, \eta_p^2 = .002$ . However, the interaction between social networking platform and exclusion was significant,  $F(4, 256) = 3.06, p = .017, \eta_p^2 = .046$ . In order to interpret the interaction, simple effects analyses were conducted. In order to perform simple effects analyses, a split file was applied for social networking platform and a one-way ANOVA was conducted for exclusion. There was a significant difference in how surprised participants felt when excluded on Instagram,  $F(2, 84) = 3.78, p = .027, \eta_p^2 = .083$ . On Instagram, there was a significant difference in how surprised participants felt when excluded by a group chat ( $M = 3.54, SD = 1.29$ ) and when excluded by a picture ( $M = 2.68, SD = 1.19$ ). Participants were more surprised when excluded by a group chat than when excluded by a picture on Instagram (mean difference = 0.86,  $p = .041$ , 95% CI [0.03, 1.69]). Similarly, a split file was applied for exclusion and a one-way ANOVA was conducted for social networking platform. There was a significant difference in how surprised participants felt when excluded by group chat across social networking platforms,  $F(2, 80) = 6.07, p = .004, \eta_p^2 = .132$ . Participants felt more surprised when excluded by a group chat on Instagram ( $M = 3.54, SD = 1.29$ ) than on Facebook ( $M = 2.63, SD = 1.45$ ) (mean difference = 0.91,  $p = .029$ , 95% CI [0.07, 1.74]). Participants felt more surprised when excluded by a group chat on Instagram than Snapchat ( $M = 2.43, SD = 1.03$ ) (mean difference = 1.11,  $p = .004$ , 95% CI [0.30, 1.91]).

Participants level of surprise was reverse scored and re-tested to test for differences in the impact on emotional arousal. Main effects were not significant for social networking platform,  $F(2, 256) = 1.62, p = .537, \eta_p^2 = .005$ , or exclusion,  $F(2, 256) = 1.29, p = .750, \eta_p^2 = .002$ . However, the interaction between social networking platform and exclusion was significant,  $F(4, 256) = 3.06, p = .017, \eta_p^2 = .046$ . In order to interpret the interaction, simple effects analyses were conducted. In order to perform simple effects analyses, a split file was applied for social networking platform and a one-way ANOVA was conducted for exclusion. There was a significant difference in how surprised participants felt when excluded on Instagram,  $F(2, 84) = 3.78, p = .027, \eta_p^2 = .083$ . On Instagram, there was a significant difference in how surprised participants felt when excluded by a group chat ( $M = 2.48, SD = 1.29$ ) and when excluded by a picture ( $M = 3.32, SD = 1.19$ ). Participants were more surprised when excluded by a picture than a group chat on Instagram (mean difference = 0.86,  $p = .047$ , 95% CI [0.01, 1.71]). Similarly, a split file was applied for exclusion and a one-way ANOVA was conducted for social networking platform. There was a significant difference in how surprised participants felt when excluded by group chat across social networking platforms,  $F(2, 80) = 6.06, p = .004, \eta_p^2 = .132$ . Participants felt more surprised when excluded by a group chat on Facebook ( $M = 3.37, SD = 1.45$ ) than Instagram ( $M = 2.46, SD = 1.29$ ) (mean difference = 0.91,  $p = .029$ , 95% CI [0.07, 1.74]). Participants felt more surprised when excluded by a group chat on Snapchat ( $M = 3.57, SD = 1.03$ ) than Instagram (mean difference = 1.11,  $p = .005$ , 95% CI [0.28, 1.93]).

A two-way ANOVA was conducted to test whether exclusion via Facebook had a greater negative impact on participants' feelings of calmness than the Instagram or

Snapchat conditions. Main effects were not significant for social networking platform,  $F(2, 251) = 1.86, p = .157, \eta_p^2 = .015$ , or exclusion,  $F(2,251) = 1.09, p = .338, \eta_p^2 = .009$ . Further, the interaction between social networking platform and exclusion was not significant,  $F(4, 251) = 1.20, p = .313, \eta_p^2 = .019$ . Participants level of calmness was reverse scored and re-tested to test for differences in the impact on emotional arousal. Main effects were not significant for social networking platform,  $F(2,251) = 1.86, p = .157, \eta_p^2 = .015$ , or exclusion,  $F(2,251) = 1.09, p = .338, \eta_p^2 = .009$ . Further, the interaction between social networking platform and exclusion was not significant,  $F(4,251) = 1.83, p = .313, \eta_p^2 = .019$ .

A two-way ANOVA was conducted to test whether exclusion via Facebook had a greater negative impact on participants' feelings of betrayal than the Instagram or Snapchat conditions. A main effect was significant for exclusion,  $F(2, 256) = 4.57, p = .011, \eta_p^2 = .034$ , but not for social networking platform,  $F(2, 256) = 2.59, p = .077, \eta_p^2 = .020$ . Further, the interaction between social networking platform and exclusion was not significant,  $F(4, 256) = 0.201, p = .937, \eta_p^2 = .003$ . Post-hoc tests were used to probe the main effect of exclusion. There was a significant difference in how betrayed people felt if they were excluded via invite ( $M = 3.11, SD = 1.22$ ) than if they were excluded via group chat ( $M = 2.50, SD = 1.17$ ). Participants who were in the no invite condition indicated they would feel more betrayed than participants in the group chat condition, (mean difference = 0.57,  $p = .009$ , 95% CI [0.11, 1.02]).

A two-way ANOVA was conducted to test whether exclusion via Facebook had a greater negative impact on participants' feelings of confusion than the Instagram or Snapchat conditions. Main effects were not significant for social networking platform,

$F(2, 256) = 0.661, p = .517, \eta_p^2 = .005$ , or exclusion,  $F(2, 256) = 0.318, p = .728, \eta_p^2 = .002$ . Further, the interaction between social networking platform and exclusion was not significant,  $F(4, 256) = 2.01, p = .093, \eta_p^2 = .030$ .

A two-way ANOVA was conducted to test whether exclusion via Facebook had a greater negative impact on participants' feelings of insecurity than the Instagram or Snapchat conditions. Main effects were not significant for social networking platform,  $F(2, 255) = 1.73, p = .179, \eta_p^2 = .013$ , or exclusion,  $F(2, 255) = 0.04, p = .958, \eta_p^2 = .000$ . Further, the interaction between social networking platform and exclusion was not significant,  $F(4, 255) = 0.80, p = .527, \eta_p^2 = .012$ .

A two-way ANOVA was conducted to test whether exclusion via Facebook had a greater negative impact on participants' feelings of forgiveness than the Instagram or Snapchat conditions. Main effects were not significant for social networking platform,  $F(2, 255) = 0.18, p = .837, \eta_p^2 = .001$ , or exclusion,  $F(2, 255) = 2.27, p = .105, \eta_p^2 = .018$ . Further, the interaction between social networking platform and exclusion was not significant,  $F(4, 255) = 1.24, p = .29, \eta_p^2 = .019$ . Participants level of forgiveness was reverse scored and re-tested to test for differences in the impact on emotional arousal. Main effects were not significant for social networking platform,  $F(2, 255) = 0.18, p = .837, \eta_p^2 = .001$ , or exclusion,  $F(2, 255) = 2.27, p = .105, \eta_p^2 = .018$ . Further, the interaction between social networking platform and exclusion was not significant,  $F(4, 255) = 1.24, p = .293, \eta_p^2 = .019$ .

### **Hierarchical Regression Analysis**

As shown in Table 3, step 1 of the regression model was significant,  $F(2, 87) = 3.39, p = .038$  and predicted 7.2% of the variance in well-being. Greater age ( $\beta = -.26, p =$



.012) predicted higher overall well-being. However, gender did not predict well-being ( $\beta = .05, p = .654$ ). Adding social networking use variables and FOMO to Step 2 of the model resulted in a significant increase to  $R^2: F(4, 83) = 6.52, p < .001$  and a significant overall model,  $F(6, 83) = 5.76, p < .001$ . Specifically, higher FOMO ( $\beta = .44, p < .001$ ) predicted lower overall well-being beyond the effects of social networking use on Facebook, Instagram or Snapchat. Adding two-way interactions between FOMO and social networking use variables to Step 3 of the model resulted in both a significant increase to  $R^2: F(3, 80) = 3.93, p = .011$  and a significant overall model,  $F(9, 80) = 5.56, p < .001$ . The interaction between FOMO and time spent using Snapchat was significant ( $\beta = -.50, p = .002$ ). Interactions between FOMO and Facebook use and Instagram use respectively were not significant. Participants who did not use these social networking platforms at all were excluded from this analysis. As shown in in Figure 1, low Snapchat use was associated with more positive well-being when levels of FOMO were low. However, when participants reported high Snapchat use, there was no difference in their well-being regardless of their FOMO level.

### **Discussion**

Many social interactions take place online due to the increased popularity of social networking platforms (Twenge et al., 2018; Twenge et al., 2019). Exclusion is one of the most frequent forms of relational victimization, but little is known about the impact of these specific experiences across social networking platforms other than Facebook (Covert & Stefanone, 2018; Hayes et al., 2018). Further, past research has not examined the impact of different experiences of exclusion on emotions across social networking platforms. The current study addressed these gaps in the literature by examining the

impact of online exclusion experiences on adults' emotions across Facebook, Instagram, and Snapchat. The first hypothesis that exclusion via Facebook would have a greater negative impact on adults' emotions than experiences of exclusion via Instagram or Snapchat was not supported. However, the hypothesis that FOMO would moderate the impact of social networking platform use on well-being was partially supported.

Specifically, low Snapchat use was associated with more positive well-being when adults reported low levels of FOMO. However, FOMO did not moderate associations between Facebook use and well-being, and Instagram use and well-being.

### **The Emotional Impact of Exclusion across Social Networking Platforms**

Unexpectedly, there were few differences in self-reported emotions experienced in hypothetical scenarios across social networking platforms. Given the increased use and popularity of Facebook compared to other social networking platforms (Hughes et al., 2012; Mai, 2018), it was expected that exclusion experienced on Facebook would elicit stronger negative emotions than Snapchat or Instagram. However, the only difference that was found across social networking platforms was the level of surprise that participants felt if they were excluded by a group chat. More specifically, participants felt more surprised if they were excluded by a group chat via Instagram than Facebook or Snapchat. This finding was unexpected because fewer participants reported having an Instagram account compared to Facebook or Snapchat. Additionally, participants indicated that they spent less time on Instagram daily compared to Facebook or Snapchat. It is possible that the increased use of Facebook and Snapchat leads to more clear expectations of group chat behaviour compared to Instagram. For example, Wirth et al. (2017) found that the impact of exclusion varied by the experience of expected or

unexpected exclusion. Given that these social networking platforms are used in different ways (Hughes et al., 2012), it is also possible that the group chat feature differs from Instagram, Facebook, and Snapchat. However, further research is needed to investigate whether there are differences in the perceived functionality of the group chat feature across these social networking platforms that may contribute to emotions.

To our knowledge, this was the first study to examine potential differences across social networking platforms. Past research has examined exclusion experiences on Facebook using hypothetical scenarios with individuals becoming de-friended, having comments ignored, or being left out of an exchange between friends. (Covert & Stefanone, 2018; Hayes et al, 2018; Smith et al., 2017). Results from these studies indicate that exclusion experiences on Facebook are associated with a decrease in mood (i.e., decreased expression of positive affect such as interest or excitement) and an increase in negative emotional reactions (i.e., anger). The current study extends this research to show that the emotional impact of exclusion may be similar across Facebook, Snapchat, and Instagram despite each platform having unique uses and features. Although it is possible that exclusion experiences across social networking platforms may have a unique impact on individuals in other ways such as their mood, these questions remain to be tested.

On the other hand, differences in emotions were found across exclusion conditions. Specifically, exclusion experienced by a group chat was associated with greater annoyance and more surprise than exclusion experienced from a posted picture. Exclusion by not being invited out was associated with greater betrayal than exclusion via a group chat. The expectations that one has for their interactions with others may

explain why exclusion scenarios have a unique impact on adults' emotions. Based on the findings of Wirth and colleagues (2017), it is possible that adults may feel more annoyed or surprised if excluded by a group chat than a posted picture because they may have more of an expectation that they would be acknowledged if they participated in a group chat conversation. Likewise, an individual may feel more betrayed if they were not invited somewhere than if they were excluded by a group chat because they might have a higher expectation of being invited. Although the exclusion scenarios impacted emotions of annoyance, surprise, and betrayal, it is not known whether or how other emotions may be impacted. It is also possible that using different exclusion scenarios would elicit greater differences in emotions reported. Further research is necessary to examine how additional emotions and scenarios of exclusion would impact adults.

### **Social Networking Platform Use, FOMO, and Well-Being**

Consistent with the second hypothesis, FOMO moderated the relationship between social networking platform use and well-being, but only for Snapchat use. FOMO did not moderate associations between Facebook use and well-being, or between Instagram use and well-being. Participants who reported low Snapchat use experienced more positive well-being if they had low levels of FOMO than if they had high levels of FOMO. However, when participants reported high Snapchat use, there was no difference in their well-being regardless of their FOMO level. Past research has found a positive association between FOMO and social networking platform use; higher levels of FOMO are associated with greater use of social networking platforms and lower levels of FOMO are associated with reduced use of social networking platforms (Oberst et al., 2017). Adults who are low in FOMO feel less compelled to constantly check their social

networking accounts in order to avoid feeling left out. They are also more likely to report fewer depression symptoms and feelings of loneliness than those who report high levels of FOMO (Fox & Moreland, 2015; Jones et al., 2009). Further, given that low FOMO also leads to a greater satisfaction of our basic needs (Przybylski et al., 2013), and the satisfaction of the need for relatedness leads to positive well-being (Shiraki & Igarashi, 2018), this can explain why those low in Snapchat use reported a more positive well-being when they have low FOMO in the current study.

Surprisingly, the same interaction effect was not found for Instagram or Facebook use. Snapchat's main feature involves direct one-on-one conversation with others whereas Facebook and Instagram offer greater interaction with others in front of a larger audience. The level of FOMO that one has may not affect the association between Facebook or Instagram use and well-being because you are more likely to experience a wider array of social interactions on these platforms compared to Snapchat. Additionally, one does not 'miss out' on social information while using Facebook or Instagram because it remains on these platforms indefinitely. These platforms allow people to catch up on social information while Snapchat posts are temporary. However, further research is needed to examine whether there are particular aspects of social networking platform use that contribute to well-being that may be influenced by FOMO.

In the current study, FOMO predicted well-being even after controlling for the effect of social networking platform use. Interestingly, time spent using the individual social networking platforms did not predict well-being. This finding contrasted bivariate correlations which showed that Facebook use and Instagram use were associated with well-being, but Snapchat use was not. Social networking platform use variables may not

have predicted well-being on their own because these variables focused on how much participants were using social networking platforms instead how they use them. Because FOMO provides a better indicator of the need to use social networking platforms, it had a greater impact on well-being.

### **Implications**

The current findings show that experiences of exclusion may impact adults' emotions in unique ways, however, there is little variability in the emotions reported across social networking platforms. It is important for adults to understand how online exclusion experiences can impact their own or others' emotions. Specifically, recognizing that online exclusion may not always be intentional, but it can still impact individuals' emotions in significant ways. Being able to identify what exclusion look likes in popular social networking platforms may help individuals to reach out to others who have had these experiences. This is particularly important given that lack of visual cues in online environments that are necessary to determine how someone reacts and responds to an experience. It may also be necessary to start these conversations at younger ages to prevent and reduce the emotional impact of future exclusion experiences in adulthood. For example, educational efforts delivered in person or online can be used to teach adolescents and adults how to recognize and respond to exclusion in social networking platforms. These can also include resources for parents who are thinking about getting their child a smartphone and want to have conversations about exclusion experiences with them before doing so. It is critical to initiate these conversations early before adolescents become immersed in the online world.

Results also demonstrate the importance of FOMO for adults' level of well-being. Adults who are more connected to the online world and feel a constant need to check their social networking accounts report poorer well-being. This could be particularly problematic for adults who have experienced high levels of FOMO across a longer period of time. It is also important to note that impact of FOMO may differ by the type of social networking platform used. In the current study, FOMO moderated the association between Snapchat use and well-being specifically, but not for Facebook or Instagram. Adults need to recognize how they are using technology and the perceived connectedness to social networking platforms. Apps such as Screen Time available on all iPhones may provide insight into how social networking platforms like Facebook, Snapchat, and Instagram are used. A greater awareness can help adults to make necessary changes if their well-being is negatively impacted. For example, setting a maximum amount of time to use social networking each day and limiting use before bedtime can increase adults' overall well-being (Woods & Scott, 2016).

### **Limitations**

Although the current study advances existing research, it has some limitations. First, our sample was restricted to adults who were at least 19 years of age or a college/university student. Because of the uneven age distribution, differences across age groups could not be tested. More equitable sampling of select age groups would give better insight into potential differences in the emotional impact of exclusion across social networking platforms. Second, all data was based on self-report assessments and raises concerns with shared-reporter variance. Including data from multiple informants or using objective assessments to record social networking platform use would help to provide a

more comprehensive view of adults' online experiences. Finally, the cross-sectional nature of the study limits the ability to make causal interpretations. Assessing participants' experiences at more than one time point would help to determine the short- and long-term impact of exclusion experiences across social networking platforms.

### **Conclusion**

Despite these limitations, the current study contributes to our understanding about the emotional impact of exclusion across social networking platforms. There were no differences in the impact of exclusion scenarios on adult's emotions across social networking platforms. However, there were differences in how annoyed, surprised and betrayed individuals felt depending on the exclusion experience. Higher levels of FOMO were associated with lower overall well-being beyond the effects of social networking use on Facebook, Instagram, or Snapchat. FOMO also moderated the association between Snapchat use and well-being; low Snapchat use was related to more positive well-being with low levels of FOMO. However, FOMO did not moderate associations but not between Facebook use and well-being, or Instagram use and well-being. These results underscore the importance of adults to recognize how their experiences with technology and perceived connectedness to social networking platforms contributes to their emotions and overall well-being.



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Table 1.

*Descriptive Statistics for Social Networking Platform and Exclusion Condition by Emotions.*

Condition	Hurt	Annoyed	Surprised	Calm	Betrayed	Confused	Insecure	Forgiving	Total
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>
Facebook									
Group chat	2.96 (1.26)	3.26 (1.26)	2.63 (1.45)	3.07 (1.33)	2.33 (1.24)	2.70 (1.24)	2.70 (1.29)	3.85 (1.06)	2.93 (1.27)
Picture	3.55 (1.35)	3.00 (1.31)	2.76 (1.27)	3.28 (1.33)	2.90 (1.21)	2.72 (1.33)	3.17 (1.37)	3.59 (1.20)	3.12 (1.30)
Invite	3.21 (1.01)	3.03 (1.12)	3.00 (1.10)	3.07 (1.13)	3.03 (1.21)	2.86 (1.41)	2.69 (1.23)	3.38 (0.90)	3.03 (1.14)
Total	3.25 (1.22)	3.09 (1.22)	2.80 (1.27)	3.14 (1.26)	2.76 (1.24)	2.76 (1.32)	2.86 (1.30)	3.60 (1.04)	3.03 (1.23)
Instagram									
Group chat	3.54 (1.11)	3.68 (0.95)	3.54 (1.29)	2.57 (1.00)	2.89 (1.07)	3.36 (1.19)	3.32 (1.47)	3.57 (1.07)	3.31 (1.14)
Picture	3.23 (1.33)	2.68 (1.14)	2.68 (1.19)	3.03 (1.30)	3.10 (1.35)	2.68 (1.27)	3.06 (1.39)	3.74 (0.89)	3.13 (1.23)
Invite	3.77 (1.28)	3.04 (1.37)	2.71 (1.51)	3.00 (1.16)	3.29 (1.44)	2.82 (1.44)	3.25 (1.53)	3.68 (1.06)	3.20 (1.35)
Total	3.52 (1.23)	3.11 (1.22)	2.97 (1.38)	2.87 (1.17)	3.09 (1.29)	2.94 (1.32)	3.21 (1.45)	3.67 (1.00)	3.17 (1.26)
Snapchat									
Group chat	2.71 (1.36)	2.89 (1.26)	2.43 (1.03)	3.42 (1.42)	2.39 (1.17)	2.36 (1.10)	2.82 (1.42)	3.63 (1.04)	2.83 (1.23)
Picture	3.12 (1.30)	2.68 (1.41)	2.88 (1.34)	3.38 (1.16)	2.71 (1.36)	2.85 (1.52)	2.79 (1.53)	3.88 (1.15)	3.04 (1.35)
Invite	3.61 (1.20)	2.90 (1.08)	3.03 (1.30)	2.84 (1.27)	3.00 (1.03)	3.03 (1.20)	3.03 (1.38)	3.19 (1.28)	3.08 (1.22)
Total	3.21 (1.29)	2.82 (1.25)	2.80 (1.26)	3.20 (1.29)	2.71 (1.21)	2.76 (1.31)	2.88 (1.44)	3.58 (1.19)	2.99 (1.29)

Table 2.

*Bivariate Correlations*

Variables	1	2	3	4	5	6	7
1. Age	—						
2. Gender	.02	—					
3. Well-being	-.37*	.03	—				
4. FOMO	-.60*	.11	.52*	—			
5. Facebook use	.01	.23*	.20*	.22*	—		
6. Instagram use	-.41*	.08	.27*	.32*	.27*	—	
7. Snapchat use	-.40*	.10	.13	.26*	.34*	.56*	—

*Note.* \*  $p < .001$ . Social networking platform used assessed in minutes per day.

Table 3.

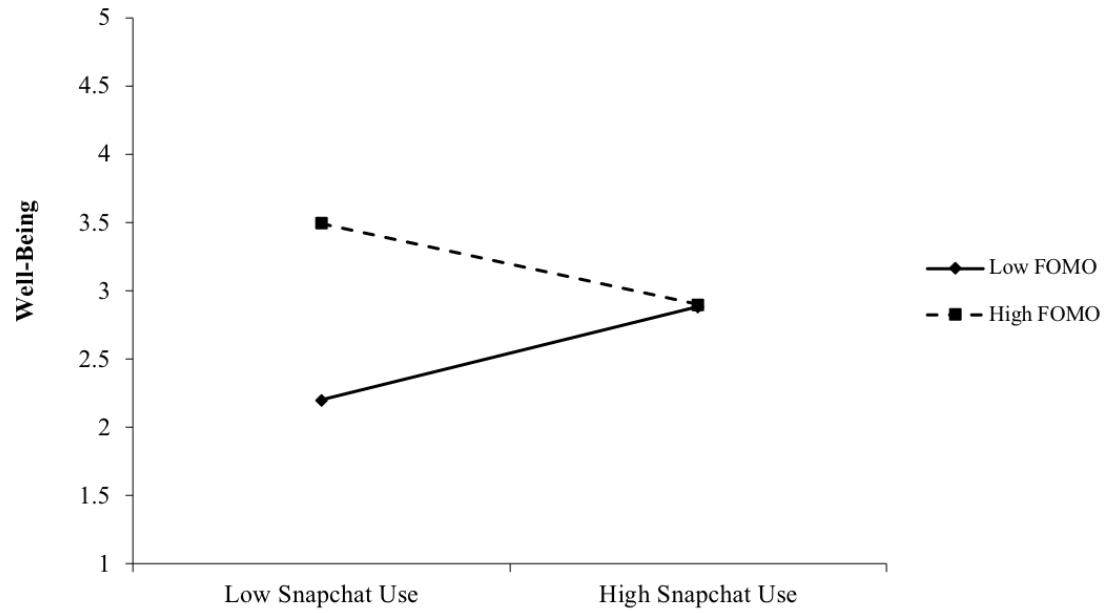
*Hierarchical Regression Model Predicting Adults' Well-being*

Variables	Step 1			Step 2			Step 3		
	B	SE	$\beta$	B	SE	$\beta$	B	SE	$\beta$
Age	-.02	.01	-.26**	.00	.00	-.04	.00	.01	-.03
Gender	.10	.23	.05	-.12	.21	-.05	-.10	.22	-.04
Facebook use				.00	.00	.14	.00	.00	.11
Instagram use				.00	.00	.10	.00	.00	.02
Snapchat use				.00	.00	-.05	.00	.00	.08
FOMO				.46	.12	.44*	.47	.12	.45*
Facebook use x FOMO							.00	.00	.23
Instagram use x FOMO							.00	.00	.25
Snapchat use x FOMO							.00	.00	-.50**
$R^2$	.07**			.29*			.39**		

Note. \*\* $p < .05$ , \* $p < .001$

Figure 1.

*Interaction between FOMO and Snapchat use for Adults' Well-being*



## Appendix A

**The Impact of Online Experiences across Social Networking Platforms  
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 Sara Ford 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.

**Purpose:** The study is designed to investigate the impact of online experiences on adults' well-being across social networking platforms. The results will be used to write an Honours thesis and will be presented at the Nick Novakowski Student Research Conference held in April 2020 at Grenfell Campus. The study may also be used in a larger research project and may be published in the future.

**Task Requirements:** You will be asked to complete a short online questionnaire about your perceptions of a hypothetical scenario, experiences with social networking sites, and your well-being. There are no right or wrong answers and you may omit 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 minutes to complete.

**Risks and Benefits:** As a result of participation in this study, there is a risk that you will experience feeling anxiety or upset. If you are in a participating psychology class at Grenfell Campus, you will receive course credit (e.g., .5% for an online study) for your participation in this study as stipulated by your instructor.

**Anonymity:** Your questionnaire responses are anonymous. Please do not put any identifying information on the questionnaire. IP addresses will not be collected. All information will be analyzed and reported on a group basis. Thus, individual responses cannot be identified by the researchers. The survey company, Qualtrics hosts this study and data on private Canadian servers. All information will also be held on a password protected computer for a minimum of 5 years, per Memorial's policy.

**Right to Withdraw:** Your participation in this research is totally voluntary and you are free to stop participating at any time before the submission of responses. 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 data to individuals' responses.

**Contact Information:** If you have any questions or concerns about the study, please feel free to contact myself, Sara Ford at [sjf403@grenfell.mun.ca](mailto:sjf403@grenfell.mun.ca) or my supervisor, Dr. Brett Holfeld at 709-639-2740 or [bholfeld@grenfell.mun.ca](mailto: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

3rd, 2020. You may also attend the Nick Novakowski Student Research Conference held in April 2020 at Grenfell Campus to hear about the results of the study.

If this study raises any personal issues for you, please contact Counselling and Psychological services (CPS) at Grenfell at 637-7919 or [cps@grenfell.mun.ca](mailto:cps@grenfell.mun.ca) or you can visit Health Services (BW243) on the main floor of the Bennett Wing, Arts and Science Residence to make an appointment.

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 as well as Tri-council Policy on Ethics.

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

## Appendix B

**The Impact of Online Experiences across Social Networking Platforms**

**Part 1.** *Please read the following scenario and answer the questions based on how you would feel in this situation.*

You check your phone and see you have many notifications from the group chat you have with your friends on (Facebook/Snapchat/Instagram). You decide to participate in the conversation by (messaging back/sending a snap back/messaging back). Your friends do not acknowledge your message and continue the conversation as if you had not replied.

Last night you went out with your friends and took some pictures. Today, you are scrolling through (Facebook/Snapchat stories/Instagram) and see one of your friends posted a (picture/story/picture) from last night. You notice that the picture posted was the only one taken without you in it.

You notice that your friends have gone out together and didn't invite you. They seem to be having a good time since they are posting about their night out on (Facebook/Snapchat/Instagram).

1) How angry would you feel in this situation?

1	2	3	4	5
Not at all angry		Somewhat angry		Very angry

2) How hurt would you feel in this situation?

1	2	3	4	5
Not at all Hurt		Somewhat hurt		Very hurt

3) How annoyed would you feel in this situation?

1	2	3	4	5
Not at all annoyed		Somewhat annoyed		Very annoyed

4) How surprised would you feel in this situation?

1	2	3	4	5
Not at all surprised		Somewhat surprised		Very surprised

5) How nervous would you feel in this situation?

1	2	3	4	5
Not at all nervous		Somewhat nervous		Very nervous

6) How calm would you feel in this situation?

1	2	3	4	5
Not at all calm		Somewhat calm		Very calm



7) How betrayed would you feel in this situation?

1	2	3	4	5
Not at all betrayed		Somewhat betrayed		Very betrayed

8) How confused would you feel in this situation?

1	2	3	4	5
Not at all confused		Somewhat confused		Very confused

9) How insecure would you feel in this situation?

1	2	3	4	5
Not at all insecure		Somewhat insecure		Very insecure

10) How forgiving would you feel in this situation?

1	2	3	4	5
Not at all forgiving		Somewhat forgiving		Very forgiving

**Part 2. Please answer the following questions about your Facebook use.**

11) Do you currently have at least one active account on Facebook?

Yes       No      Number of accounts: \_\_\_\_\_

If you answered NO, have you had a Facebook account in the past?

Yes       No

If you answered YES please indicate the reason you no longer have an account on Facebook.

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12) As accurately as possible, please estimate how many hours you spend on Facebook on an average day.

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13) How often do you browse (i.e., scroll through) Facebook in a day?

1	2	3	4	5
Never	Rarely	Sometimes	Often	Very Often

14) How often do you post a story on Facebook?

1	2	3	4	5
Never	Rarely	Sometimes	Often	Very Often

15) How often do you post a picture on Facebook?

1	2	3	4	5
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Never                  Rarely                  Sometimes                  Often                  Very Often

16) How often do you use a group chat on Facebook?

1                  2                  3                  4                  5  
 Never                  Rarely                  Sometimes                  Often                  Very Often

17) How often do you acknowledge (i.e., reply back to) a message in a group chat on Facebook?

1                  2                  3                  4                  5  
 Never                  Rarely                  Sometimes                  Often                  Very Often

18) Please indicate the reason(s) you use Facebook. Check all that apply.

- a. Keeping in touch with friends
- b. Keeping in touch with family
- c. Connecting with people known but rarely seen
- d. Meeting new people
- e. Obtaining information
- f. Keeping up with news
- g. Keeping up with celebrities/influencers
- h. Sharing personal information (i.e. thoughts, photos, etc.)
- i. Other (Please specify: \_\_\_\_\_)

19) How dependent do you feel on your Facebook account(s)?

1                  2                  3                  4                  5  
 Not at all                  Somewhat                  Extremely  
 dependent                  dependent                  dependent

20) What is the main reason(s) you feel dependent on your Facebook account?

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**Part 3. Please answer the following questions about your Instagram use.**

21) Do you currently have at least one active account on Instagram?

Yes       No      Number of accounts: \_\_\_\_\_

If you answered NO, have you had an Instagram account in the past?

Yes       No

If you answered YES, please indicate the reason you no longer have an account on Instagram.

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22) As accurately as possible, please estimate how many hours you spend on Instagram on an average day.

\_\_\_\_\_

23) How often do you browse (i.e., scroll through) Instagram in a day?

1	2	3	4	5
Never	Rarely	Sometimes	Often	Very Often

24) How often do you post a story on Instagram?

1	2	3	4	5
Never	Rarely	Sometimes	Often	Very Often

25) How often do you post a picture on Instagram?

1	2	3	4	5
Never	Rarely	Sometimes	Often	Very Often

26) How often do you use a group chat on Instagram?

- |       |        |           |       |            |
|-------|--------|-----------|-------|------------|
| 1     | 2      | 3         | 4     | 5          |
| Never | Rarely | Sometimes | Often | Very Often |

27) How often do you acknowledge (i.e., reply back to) a message in a group chat on Instagram?

- |       |        |           |       |            |
|-------|--------|-----------|-------|------------|
| 1     | 2      | 3         | 4     | 5          |
| Never | Rarely | Sometimes | Often | Very Often |

28) Please indicate the reason(s) you use Instagram. Check all that apply.

- a. Keeping in touch with friends
- b. Keeping in touch with family
- c. Connecting with people known but rarely seen
- d. Meeting new people
- e. Obtaining information
- f. Keeping up with news
- g. Keeping up with celebrities/influencers
- h. Sharing personal information (i.e. thoughts, photos, etc.)
- i. Other (Please specify: \_\_\_\_\_)

29) How dependent do you feel on your Instagram account(s)?

- |                         |   |                       |   |                        |
|-------------------------|---|-----------------------|---|------------------------|
| 1                       | 2 | 3                     | 4 | 5                      |
| Not at all<br>dependent |   | Somewhat<br>dependent |   | Extremely<br>dependent |

30) What is the main reason(s) you feel dependent on your Instagram account?

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**Part 4. Please answer the following questions about your Snapchat use.**

31) Do you currently have at least one active account on Snapchat?

Yes       No      Number of accounts: \_\_\_\_\_

If you answered NO, have you had a Snapchat account in the past?

Yes       No

If you answered YES, please indicate the reason you no longer have an account on Snapchat.

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32) As accurately as possible, please estimate how many hours you spend on Snapchat on an average day.

\_\_\_\_\_

33) How often do you browse (i.e., stories, discover page) Snapchat in a day?

1	2	3	4	5
Never	Rarely	Sometimes	Often	Very Often

34) How often do you post a story on Snapchat?

1	2	3	4	5
Never	Rarely	Sometimes	Often	Very Often

35) How often do you post a picture on Snapchat?

1	2	3	4	5
Never	Rarely	Sometimes	Often	Very Often

36) How often do you use a group chat on Snapchat?

1	2	3	4	5
Never	Rarely	Sometimes	Often	Very Often

37) How often do you acknowledge (i.e., reply back to) a message in a group chat on Snapchat?

1	2	3	4	5
Never	Rarely	Sometimes	Often	Very Often

38) Please indicate the reason(s) you use Snapchat. Check all that apply.

- a. Keeping in touch with friends
- b. Keeping in touch with family
- c. Connecting with people known but rarely seen
- d. Meeting new people
- e. Obtaining information
- f. Keeping up with news
- g. Keeping up with celebrities/influencers
- h. Sharing personal information (i.e. thoughts, photos, etc.)
- i. Other (Please specify: \_\_\_\_\_)

39) How dependent do you feel on your Snapchat account(s)?

1	2	3	4	5
Not at all dependent		Somewhat dependent		Extremely dependent

40) What is the main reason(s) you feel dependent on your Snapchat account?

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**Part 5.** *Below is a collection of statements about your everyday experience. Using the scale provided please indicate how true each statement is of your general experiences.*

*Please answer according to what really reflects your experiences rather than what you think your experiences should be. Please treat each item separately from every other item.*

41) I fear others have more rewarding experiences than me

1	2	3	4	5
Not true at of me	Slightly true of me	Moderately true of me	Very true of me	Extremely true of me

42) I fear my friends have more rewarding experiences than me.

1	2	3	4	5
Not true at of me	Slightly true of me	Moderately true of me	Very true of me	Extremely true of me

43) I get worried when I find out my friends are having fun without me.

1	2	3	4	5
Not true at of me	Slightly true of me	Moderately true of me	Very true of me	Extremely true of me

44) I get anxious when I don't know what my friends are up to.

1	2	3	4	5
Not true at of me	Slightly true of me	Moderately true of me	Very true of me	Extremely true of me

45) It is important that I understand my friends' "inside jokes".

1	2	3	4	5
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Not true at of me	Slightly true of me	Moderately true of me	Very true of me	Extremely true of me
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46) Sometimes, I wonder if I spend too much time keeping up with what is going on.

1	2	3	4	5
Not true at of me	Slightly true of me	Moderately true of me	Very true of me	Extremely true of me

47) It bothers me when I miss an opportunity to meet up with friends.

1	2	3	4	5
Not true at of me	Slightly true of me	Moderately true of me	Very true of me	Extremely true of me

48) When I have a good time it is important for me to share the details online (e.g. updating status).

1	2	3	4	5
Not true at of me	Slightly true of me	Moderately true of me	Very true of me	Extremely true of me

49) When I miss out on a planned get-together it bothers me.

1	2	3	4	5
Not true at of me	Slightly true of me	Moderately true of me	Very true of me	Extremely true of me

50) When I go on vacation, I continue to keep tabs on what my friends are doing.

1	2	3	4	5
Not true at of me	Slightly true of me	Moderately true of me	Very true of me	Extremely true of me

**Part 6.** *This section has 14 statements about how you have been OVER THE LAST WEEK. Please read each statement and think how often you felt that way last week. Then select the response which is closest to this.*

51) I have felt tense, anxious or nervous.

0                      1                      2                      3                      4

Not at all      Only occasionally      Sometimes      Often      Most or all the time

52) I have felt I have someone to turn to for support when needed

0                      1                      2                      3                      4

Not at all      Only occasionally      Sometimes      Often      Most or all the time

53) I have felt OK about myself

0                      1                      2                      3                      4

Not at all      Only occasionally      Sometimes      Often      Most or all the time

54) I have felt able to cope when things go wrong

0                      1                      2                      3                      4

Not at all      Only occasionally      Sometimes      Often      Most or all the time

55) I have been troubled by aches, pains or other physical problems

0                      1                      2                      3                      4

Not at all      Only occasionally      Sometimes      Often      Most or all the time

56) I have been happy with the things I have done

0                      1                      2                      3                      4

Not at all      Only occasionally      Sometimes      Often      Most or all the time

57) I have had difficulty getting to sleep or staying asleep

0                      1                      2                      3                      4

	Not at all	Only occasionally	Sometimes	Often	Most or all the time
58) I have felt warmth or affection for someone	0	1	2	3	4
	Not at all	Only occasionally	Sometimes	Often	Most or all the time
59) I have been able to do most things I needed to do	0	1	2	3	4
	Not at all	Only occasionally	Sometimes	Often	Most or all the time
60) I have felt criticized by other people	0	1	2	3	4
	Not at all	Only occasionally	Sometimes	Often	Most or all the time
61) I have felt unhappy	0	1	2	3	4
	Not at all	Only occasionally	Sometimes	Often	Most or all the time
62) I have been irritable with other people	0	1	2	3	4
	Not at all	Only occasionally	Sometimes	Often	Most or all the time
63) I have felt optimistic about my future	0	1	2	3	4
	Not at all	Only occasionally	Sometimes	Often	Most or all the time
64) I have achieved the things I wanted to	0	1	2	3	4
	Not at all	Only occasionally	Sometimes	Often	Most or all the time

**Part 7. 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.**

65) How old are you? \_\_\_\_\_ years old

66) What is your gender?

- a. Male
- b. Female
- c. Another gender
- d. I prefer not to answer

67) How would you describe your race or ethnicity? \_\_\_\_\_

68) What is the highest educational 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 diploma/certificate
- f. Some university education
- g. Complete Bachelor's degree
- h. Graduate degree

## Appendix C

**Advertisement**

Facebook:

Hi everyone! As part of my Honours thesis, I am conducting a study where I will be examining the influence of online experiences on adult's well-being across social networking platforms. This study is being supervised by Dr. Brett Holfeld. If you choose to participate, you'll be asked to take an online questionnaire that will take about 10 minutes to complete. The study has been approved by the psychology ethics review process at Grenfell Campus, Memorial University of Newfoundland. Participation is completely voluntary and anonymous!! If you'd like to participate, please click the link below. Thanks ☺

## Appendix D

**The Impact of Online Experiences across Social Networking Platforms****End of Study Form**

Thank you so much for participating in my study which looked at the influence of online experiences on adult's well-being across social networking platforms.

If you have any questions or concerns about the study, please feel free to contact myself, Sara Ford, at [sjf403@grenfell.mun.ca](mailto:sjf403@grenfell.mun.ca) or my supervisor, Dr. Holfeld at [bholfeld@grenfell.mun.ca](mailto: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 3<sup>rd</sup>, 2020 or you can attend the Nick Novakowski Student Research Conference in April 2020.

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. 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](mailto:gcethics@grenfell.mun.ca)) or by calling 709-639-2736.


If this study raises any concerns for you, please contact Counselling and Psychological Services (CPS) at Grenfell at 637-7919 or [cps@grenfell.mun.ca](mailto:cps@grenfell.mun.ca) or you can visit Health Services (BW243) on the main floor of Bennett Wing, Arts and Science Residence to make an appointment. As well, you can contact the NL Mental Health Crisis Line at 1-888-737-4668 or your provincial/state mental health crisis line



## Appendix F

### Permission to use Scale

Permission to use the FoMO scale Inbox x ⌵ 🖨 🔗


 **Ford, Sara Joy** <sjf403@mun.ca> Mon, Oct 21, 11:24 AM ☆ ↶ ⋮  
to andy.przybylski ▾

Hello Dr. Przybylski,

I am a fourth-year psychology undergraduate student at Grenfell Campus, Memorial University of Newfoundland in Canada. I am currently working on my Honours thesis under the supervision of Dr. Brett Holfeld that will examine the effect of different types of online exclusion on well-being across different social media platforms. I am interested in using the Fear of Missing Out scale (FoMOs; Przybylski, Murayama, Dehaan & Gladwell, 2013) in my online questionnaire and I would like your permission to do so.

Thank you for your time and consideration,  
Sara Ford

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 **Andrew Przybylski** Mon, Oct 21, 11:51 AM ☆ ↶ ⋮  
to me ▾

Please do, materials are on the osf. <https://osf.io/dch4v/>

Andy

⋮