



International Centre for Criminal Law Reform
<https://icclr.org>

Plugged In: Problematic Instagram Use and Negative Outcomes¹

Amy Prevost² & Petra Jonas³

Abstract

Research on the negative outcomes of social media use have particularly focused on Facebook, with limited studies examining the relationship to Instagram use. This study explored the connection between Instagram use and six relevant themes related to overall well-being, including the potential for victimization. The study used both quantitative and qualitative methods. For the quantitative component, surveys were distributed to undergraduate students at two Canadian Universities. The qualitative nature of the study consisted of two focus groups which were conducted at the University of the Fraser Valley. Each focus group consisted of nine participants who engaged in dialogue regarding the six preliminary themes identified from the survey data. The study revealed that Instagram use is correlated with escapism, frustration, fear of missing out, validation, anxiety, addiction, and vulnerability to cyber victimization. Consistent with other studies in this area, our results indicated that regular Instagram use has negative psychological outcomes for individual users. The research offers some important implications and recommendations for early education, increased awareness about the potential for victimization, and early intervention strategies.

Keywords: social media; Instagram; problematic internet use; anxiety; fear of missing out (FOMO); validation; cyber victimization

¹ © 2020 Amy Prevost & Petra Jonas, All rights reserved. However, in accordance with the Copyright Act of Canada, this work may be reproduced, without authorization under the conditions for “Fair Dealing.” Therefore, limited reproduction of this work for the purposes of study, research, criticism, review, and news reporting is likely to be in accordance with the law, particularly if cited correctly.

² Dr. Amy Prevost is an Associate Professor in the School of Criminology and Criminal Justice at the University of the Fraser Valley. She received her PhD from Simon Fraser University for her work on violence and aggression among young offenders in custody. Dr. Prevost teaches courses related to mental health, personality disorders, and crime. Her main research interests are in the areas of juvenile justice and social policy, at-risk youth, mental health and criminal justice, and social media and online victimization. Dr. Prevost is currently a member of the Matsqui Institution Citizen Advisory Committee (CAC). Amy.Prevost@ufv.ca

³ Dr. Petra Jonas is a faculty member in the Criminology Department at Kwantlen Polytechnic University. Dr. Jonas received her PhD from Simon Fraser University. Petra.Jonas@kpu.ca

Introduction

It is estimated that approximately ninety-five per cent of teenagers and young adults have a smartphone (Roy, Ortiz, Cabassa, Daniels, Dassin, Garcia, Javier, Lanysse, Morgan, Ruiz, & Smith, 2020). Despite the social and personal benefits of social media platforms, researchers have begun to explore the link between social media use and problematic behaviours. The rapid growth in the use of social networking sites (SNSs) over the last decade has resulted in an examination of how online social behaviour negatively impacts users' everyday lives (Ryan, Chester, Reese & Xenos, 2014; Manago, Taylor & Greenfield, 2012; Frost & Rickwood, 2017). It has been hypothesized that regular access to social media sites may sometimes be associated with an increased risk for anxiety, depression, fear of missing out (FOMO), self-harm, victimization, and related mental health issues.

Approximately 1.5 billion people use online social networking sites (SNSs) such as Twitter, Facebook, Instagram, and LinkedIn, on a regular basis (Biolcati & Cani, 2015; Brailovskaia & Margraf, 2016; Andreassen, 2015). Although such networking sites change rapidly, the motivations for engaging on SNSs remain unchanged – they provide opportunities for both professional and personal communication, such as sharing ideas, online learning, international communication and increased connectivity (Pantic, 2014). Despite the many positive benefits of using social media platforms, a link between social media use and problematic behaviors, including addiction, has been identified (van den Eijnden, Lemmens, & Valkenburg, 2016).

Social media networks are now used by one in four individuals worldwide (Royal Society for Public Health, 2017). In fact, many young people have never known what it is like to live in a world without the immediate access to the internet and social media platforms. Instagram is now the most used social media app by the younger population in several countries, including the United States (Rodriguez, 2020). With the growth and popularity of particular social media applications, such as Snapchat, TikTok or Instagram, these platforms have become increasingly linked to cyber victimization, especially cyberbullying (Chan, Cheung, and Lee, 2021).

It is the very nature of online social networking sites that provides opportunities for acts such as cyberbullying, since engaging and communicating online provides the ease of anonymity. It is this particular online anonymity that facilitates the potential for victimization (King,

Walpole & Lamon, 2007). Recent research by Longobardi, Settani, Fabris & Marengo (2020) suggested that Instagram is associated with a heightened risk for cyber victimization. This association is correlated with one's popularity online. For example, in this study, it was found that the greater number of followers one has, the greater likelihood of behavioural addiction and cyber aggression. Furthermore, the constant need for recognition and validation may have negative consequences associated with psychological well-being, including an increased risk for cyber victimization.

Consistent with our findings, females who are more active online, and who actively engaged on SNS on a regular basis, are more likely to be victimized in comparison to their friends who report lower levels of online activity (Longobardi, Settani, Fabris & Marengo, 2020). Furthermore, due to the increased knowledge of computer technology, users are more vulnerable to the sophisticated techniques and strategies used by cyber criminals to target and exploit their victims. What makes one SNS user more likely to be victimized than others can be explained by victim precipitation theories. This theory of victimization posits that a victim inadvertently contributes to the crimes against them either by facilitation or provocation (Lasky, 2019). As such, it is not surprising that young people are more vulnerable to victimization, violence, and online abuse during the critical developmental period during adolescence.

The most frequent forms of online harassment include cyberbullying, cyberstalking, violence and abuse in intimate relationships, sexting and grooming, sextortion, and online romance scams. Current research by Hernandez et al. (2021) found that certain personality profiles among males and females contribute to the risk of sexting and grooming victimization. For males, it appears that a lack of empathy, extraversion, and disinhibition predict erotic online behaviour, while narcissism and disinhibition is more likely to predict such behaviour among females. Such forms of online victimization are related not only to depression, emotional distress, and sleep problems, but also suicidal thoughts and symptoms of post-traumatic stress (Gasso et al., 2019). Although the long-term consequences of cyber victimization are apparent, the criminal justice research on online victimization is still relatively new and focuses mainly on cyberbullying. More research is needed to understand how to mitigate the risk between social media usage and cybercrime opportunities.

The purpose of this study was to explore what is known about young people's use of SNSs. While this study offered a conceptual framework for understanding the benefits and negative consequences of social media use, particular attention was given to problematic use of the social networking site, Instagram. This application was the most commonly used

application reported by respondents and was consistent with other research that suggests that Instagram use has exceeded the popularity of other sites such as Facebook, Twitter, and Snapchat among adolescents and young adults (Bahtiyar and Kircaburun, 2017; Anderson & Jiang, 2018). Instagram is now the most used social media app by the younger population in certain countries, such as the United States (Rodriguez, 2020). Given the increase in popularity, the risks to some of its users must be examined. It should be noted that the research in this area is at an early stage and a consensus has not yet emerged. Therefore, the debate remains contentious and ongoing, and results cannot be generalized at this time.

Frequent and consistent exposure to Instagram has disadvantages, as it relates to negative emotional, cognitive, and social outcomes. The literature in this area has identified several main themes linked to problematic Instagram use, six of which appear to be most common. These include depression and anxiety, self-esteem, body dissatisfaction, personality disorders, fear of missing out, and poor academic performance. It is important to note that the strength and validity of these relationships vary, and that such associations have not been consistently observed (Jelenchick, Eickhoff & Moreno, 2013). While considering relevant mitigating factors and individual differences, this study assessed these domains as they related to problematic Instagram use.

Research Objectives

The purpose of this research was to explore university students' use of SNSs and its impact on their everyday life and overall wellbeing. The study had three main components. First, the researchers surveyed 216 university students at two Canadian universities about their perspectives on social media use. Second, the survey data was collected and analyzed for relevant themes. Third, focus groups were conducted with 18 participants to further explore the survey data and associated themes. As this research was exploratory in nature, it was not meant to test any specific hypothesis. Instead, the researchers identified the main themes that emerged from the survey data and further explored the themes in two focus group settings.

Research Design and Procedure

The data for this study was obtained using both quantitative and qualitative methods. For the quantitative component, surveys were distributed to undergraduate students at the University of the Fraser Valley and Kwantlen Polytechnic University who volunteered to participate in the study. To be eligible, respondents had to be a registered university

student at one of the two universities. The survey was promoted via email, posters, and rack cards distributed in classrooms at both institutions. In addition, some respondents were also recruited using the snowball technique, which is a non-probability sampling method where participants recruit others by way of acquaintances or friends (Naderifar, Hamideh, and Ghaljaie, 2017).

All respondents provided informed consent and participated voluntarily and anonymously. All participants were given a \$20 CAD Tim Hortons gift card as a thank you for their time. The qualitative nature of the study consisted of two focus groups which were conducted at the University of the Fraser Valley on February 19, 2020. Each focus group consisted of nine participants who engaged in dialogue regarding the preliminary themes identified from the survey data. Both focus groups lasted approximately one hour and were audio recorded and later transcribed. Following the completion of the focus groups, the researchers debriefed and identified the relevant themes related to problematic Instagram use.

Results

The vast majority of respondents (93.7%) were between the ages of 16-30 years old. The sample consisted of 77.8% female and 21.1% male, with one respondent identifying as transgendered and one participant identifying as non-binary. The ethnic categories of the survey respondents generally mirrored the ethnic diversity of the student population at these two universities. The majority of respondents (77.8%) reported having a social networking account, which included Facebook or Instagram; however, most reported using Instagram on a regular basis (70.6%). In terms of the age when respondents first started using social media, nearly 86 per cent (85.8%) reported their onset of social media use to be between the ages of ten (10) and twenty (20) years old.

With respect to frequency of use, the vast majority (80.8%) of respondents reported checking Instagram more than a few times a day. In fact, over a quarter (26.9%) of the respondents reported spending between one to three hours on Instagram per day. When respondents were asked if they preferred online communication over face-to-face communication, almost 10 per cent (9.3%) reported that they prefer to communicate online. This preference for communicating online was attributed to feeling more confident in their communication with others and finding it easier or less awkward to discuss certain topics online than in person. For example, one respondent stated,

despite being a confident person, there are certain things I would rather text about, like when you start to talk to somebody in a dating aspect and you are getting to know the person, you don't feel as awkward in

the initial dating stage because you don't have to respond right away.

Another participant discussed her struggle with anxiety, so being able to use social media allowed her to avoid conflict. "I don't like conflict at all, so being able to think about what I want to say online is nice and that makes me feel more confident and at ease, making me feel more okay with the conversation". Other participants explained how communicating online provided more time to form a response, which enabled participants to formulate a more impressive reply. However, there was a general consensus that the online interaction was less authentic and honest in comparison to in-person communication – "people are hiding behind their screens".

It is important to note that a few sub-themes emerged during the focus groups with respect to ease of communication. Such sub-themes included: (1) communicating online is a faster, more efficient, and a more convenient way to interact with others; (2) communicating online provides the ability to talk to friends and family who reside in other countries; (3) communicating online allows one to avoid direct communication if desired. One participant stated, "my friends think it is weird when I call them, so I just pick up my phone and text." Participants preferred to communicate online on their smartphone, as this device was regarded as easier and more convenient.

A majority (68.5%) of survey respondents stated that they used Instagram to pass the time when they were bored, while nearly a quarter (24.7%) reported that they had difficulty controlling the amount of time they spent on Instagram, and almost a third (31%) reported that they often wondered what was happening on Instagram when they were not online.

During the focus groups, participants were asked to comment on what they felt contributed to their increased time on Instagram. The first reason related to 'comparing oneself to others.' For example, a participant mentioned that when she first downloaded Instagram, her initial intention was to connect with people she knew, such as family and friends, but then her online experience turned into connecting with 'friends of friends' and people 'who looked like her', which the participant described as, "it starts to turn into a loop and then you start comparing yourself to others". This participant went on to express how comparing herself as a girl was based on comparing her looks (how attractive she was) to other girls and comparing her career to others from her high school.

Other participants acknowledged how scrolling through Instagram resulted in their losing track of time. A participant stated, "I look at one video, and after five minutes, it's another video, and then you just get so into it and

more time passes by". Others reflected on how they felt absorbed by Instagram and that this resulted in a loss of control over the time spent on the application. "Sometimes I don't know consciously that I'm opening my app - almost like muscle memory, I'll open the app right away, even though there is no notification, and I may have been on it 30 seconds before, but then I just hit it again." It was a commonly held assumption among many participants that Instagram was operating on algorithms 'to keep you in'.

Another reason attributed to spending more time on Instagram than intended was that the application hides the clock when a user is logged in. As such, participants found it difficult to control how long they scrolled Instagram. For example, a participant stated, "something that always gets me is that the clock is hidden. When the clock is hidden, I don't check the time and there is always another video that catches my attention, and even though I say to myself, 'okay I'm going to go and do this today,' the next video is just right there." Another participant expressed how sometimes losing track of time resulted from her going onto Instagram with the intention to 'quickly look somebody up,' but then suddenly found herself diving down the rabbit hole, unable to escape the attraction to new posts, different people, or videos and stories that kept popping up.

Procrastination was another reason connected to the amount of time spent on Instagram, although it was frequently unintended. A participant stated:

I'll wake up on a Saturday morning at 8am, and I start cruising through some videos, and then the next thing I know it's 10am, and I'm like, 'that sucks', I wasted my morning." Another participant stated, "let's say I'm going to do a workout, I have a whole bunch of workouts saved on my Instagram feed but instead of initially doing what I intended to do, which is watch a video and copy that, I just go down the rabbit hole of watching other people's workouts and then comparing myself to them. Another participant said, "say I have a long day of studying to do, so I tell myself I'm just gonna go on my phone for half an hour now, but then I end up procrastinating the whole entire day.

Many participants explained how procrastination sometimes resulted in guilt about not accomplishing certain tasks. "I agree on the guilt 100%. It's like having a bad taste in my mouth after. 'Why did I do that?' And then it happens again." The guilt component is further reflected in the following quote by a participant:

I would describe myself as someone who has self-discipline, but social media has challenged me in such an intense way. The time concept is completely gone. This morning, I checked my phone as per routine, and I said to myself, 'I will check my phone for 2 minutes,' and then 15 minutes has passed, and I feel terrible about myself. The sense of guilt

associated with it is pretty bad. The guilt is a result of spending more time than I planned, and I don't think it is productive.

Losing track of time and not being able to control the amount of time spent on Instagram was also described by several participants as a form of addiction. A participant remarked:

When I first started, it was about wanting to connect with family and friends, but now I've become so addicted. In the morning when I wake up, I check my phone - FB, IG and all of my notifications. When my alarm goes off, I just grab my phone and do my thing. I can't stop myself.

Another participant described a large part of what fueled her addiction to Instagram was going through the videos and comparing herself to others. For her, Instagram addiction was also described as being analogous to a 'drug'. Another participant echoed this sentiment, "I can literally feel the dopamine in my brain, similar to like other dopamine things. It's like adrenaline sometimes. It's insane." Another participant also described Instagram as being like a drug, used at first for coping with stress, but ultimately followed by the realization that it is not really helpful: "I find that I spend more time on it. I use it as a coping mechanism for stress. But I find that it doesn't really help, it makes it worse. It's like a drug, I find." In addition, a participant shared how feeling addicted to Instagram led to her feeling depressed: "it always makes me feel more depressed than I already do. I tell myself I don't have time to go to the gym, but then I look at my social media screen time and I say, "oh that's where all of that time went."

The survey data revealed that 16.3% of the respondents felt anxious when they were off Instagram for a certain period of time. This anxiety was one of the themes explored during the focus groups, where it was disclosed that Fear of Missing Out (FOMO) was the driving force behind such anxiety.

When asked to comment on 'what they were missing out on', several participants mentioned the Instagram stories. For example, a participant said, "I really like watching Instagram stories." Furthermore, not being able to view Instagram stories, videos or pictures created a sense of feeling overwhelmed when some of the participants checked the application again. "When I feel this way, I feel like deleting the app because I have a hard time dealing with the overwhelming feeling of having to catch up on what I missed." Another participant expressed feeling worried about what she missed on Instagram during a drive to and from work. A participant also explained how the anxiety of being away from Instagram for a period of time was rooted in a need for her to find out who was liking her posts or who had viewed her posts. Another participant described the anxiety as the result of the pressure she felt

about having to stay active to ensure that her posts for her culinary business were active and trending.

Given that the survey results showed that 80.8% of respondents checked Instagram a few or several times a day, this theme was also explored in more detail during the focus groups. The participants shared several reasons why they felt the need to frequently check how many likes or comments they received on a post. The most common reasons were attributed to validation, status, approval, and competition. A participant emphasized that receiving likes and positive feedback on a post felt like a form of status, or a way of approval because people were agreeing with him. "For me, it's merely validation from others, and depending on the situation, I might be looking at a specific person to validate something because I want them to see it, so that's why I would check it frequently." Such validation led to feeling ecstatic, "it's like feeling the dopamine going through my brain". Others echoed the same sentiments:

Even though Instagram has deleted the number of likes people have, it has not stopped me from checking how many likes I have. I'm still checking who is liking my photos and how many likes I have. If I like a photo and I post it, and other people like it, then I think, 'the other people think it's a good photo too' – it was a good photo then.

A number of other interesting responses to this question included the need to see if, and how rapidly, participants were receiving likes or comments on a particular post. If people liked their post, then they felt 'like leaders of the pack,' and this again resonated with feelings of validation and happiness. Self-esteem was also mentioned as an important factor in how participants felt about their posts. Some of the participants stated that their levels of self-esteem would increase with a high number of likes or comments, but a few of the participants emphasized that this self-esteem boost was only temporary. Another participant kept checking her post to see how many likes and comments she was garnering because that type of validation made her feel 'influential'. A few of the participants reported that feelings of ecstasy, tingling sensations, placing value on *who* likes their photos or posts were reasons to repeatedly check Instagram day and night.

A couple of participants disclosed that they often uploaded certain posts or photos intentionally for a specific person to view, so checking Instagram frequently, in order to find out if the person liked or made a comment, was the reason for frequently checking the app. Moreover, a few participants mentioned that they had installed another app that provided data on who had liked their photos or posts or who unfollowed them, so this also made checking Instagram more prevalent. It was also reported that the need to check Instagram frequently was related to the length of

time it would take for someone in particular to like their post. Some participants discussed how they found themselves occupied with analyzing who liked their post and also who did not. A participant stated, "it can sometimes feel like a competition in terms of how people respond. For example, if you didn't like my post, why should I like yours"? Finally, one participant stated that, "the need to check comes in waves. It really depends on what is going on in one's life".

When survey respondents were asked if they compared their physical appearance or their body to others when using Instagram, over half (58.7%) reported that they did. Respondents were also asked to report on whether they felt frustrated to see others appearing to be having a good time on Instagram. Almost a quarter (22.2%) reported to feeling this way. Feeling moody, nervous or depressed when on Instagram was reported by just over 17 per cent (17.6%) of participants. Respondents were then asked if they felt the need to compare their lives to their friends on Instagram, and over a third (36.8%) reported that they did.

Given that over a third of survey respondents reported feeling the need to compare their lives with others, this theme was further explored with participants in the focus group settings. It was discovered that there were a number of reasons why some focus group participants did not feel good about seeing other individuals having a good time on Instagram. The first reason was related to how participants perceived their own life at the time. Several participants admitted that when they were facing rough or challenging times, seeing others on Instagram appearing to have a good time made them feel frustrated. A participant said, "if I'm going through a rough patch and I see posts with their new house or their new car, it's almost too happy what the people are posting, and I end up feeling very frustrated".

Another participant described feeling frustrated about the inaccurate portrayal of friends' lives on Instagram -- "a lot of people I follow, especially on Instagram, I know what their life is really like, so I get frustrated sometimes when they are trying to portray a certain narrative that I know is not true. But I also don't like to take it to heart because if someone is trying to have a good time, why should I take it personally or be mad about"? Such a statement seems to reflect an angst or struggle about coping with people portraying false narratives about themselves or trying to make their lives appear a certain way; yet, in fact, the participant knows that such photos or posts are not representative of the person's real life. Similarly, another participant displayed her frustration with false postings:

I find that a lot of girls are on a good track to fitness, and then I notice that they are trimming down their photos to look slimmer to show

progress. But then I see them in real life, and they do not look like that. I ask myself why it bugs me so much. If they want to portray themselves as fitter than they actually are, why does it frustrate me? I've gone so far as to mute people. You don't unfollow them, but you don't see their posts anymore.

Another participant admitted to feeling jealous about photos on Instagram. "I feel like nobody posts anything bad in my generation. It has to be designer, like a BMW or a Gucci purse, yet I do not have any of that." Another participant stated,

when I see people having a good time, but I'm not having a good time, it starts to feel competitive. It plays into your daily life. Why do some people get to go out every weekend but I'm studying every weekend? I feel jealous and competitive.

In terms of checking the number of likes received on a post, 36.8% of survey respondents reported that they felt preoccupied with the number of likes they received. When respondents were asked if this frustration resulted in the need to reduce the time they spend on Instagram, nearly 70% (69.6%) stated that they try to minimize the time they spend on the app.

One of the survey questions asked how often Instagram was used to forget about personal problems, and just over a third (33.2%) reported using the platform to distract themselves from their personal problems. In terms of the impact on their job or studies, 38.2% of respondents reported that they felt that their Instagram use had a negative impact on their job or performance at school. When asked if they spent more time on Instagram than initially intended, almost three quarters (72.6%) reported that they did. Similarly, when asked to comment on whether their Instagram use resulted in spending less time on leisure activities, hobbies, or exercise, just over a quarter (25.1%) reported this to be the case. Finally, respondents were asked to answer whether or not they believed they were addicted to social media, and 36.3% responded yes to this question.

During the focus groups, a couple of participants disclosed how comparison contributed to their eating disorders. A participant discussed her ongoing struggle with her appearance:

When I started on social media when I was 11, I started comparing myself to those girls who looked different (they used apps to alter their body), and I'm going to be honest, it contributed to me developing an eating disorder. I compared myself, but I always found everyone looked better than me, so I starved myself or exercised more to look like someone who doesn't even exist because they alter their body.

Another participant stated:

It also contributed to me having an eating disorder as well. On IG, on the discover page, it would show celebrities, and you think you need to do what they are doing. Then you start posting similar pictures and getting more likes and comments. It turns into this vicious cycle of comparing, and you just keep going.

Another participant stated:

I can see the way social media impacts my younger sister. Nobody posts a photo where they look bad. So, if that's constantly in your face, and you know yourself and your own bad side, it's difficult to only see people who look perfect. I had to unfollow every fitness guru and celebrity because I would tell myself to get two sizes smaller, and I wanted to edit my photo to alter my physical appearance to look like them.

The focus group participants shared some interesting responses with respect to how social media impacted their overall well-being. A participant described her journey on social media as an evolution, and this evolution resulted in an overall feeling of vulnerability. Another participant described social media as, "putting you down a dangerous rabbit hole". A few participants detailed the negative impact social media had on their lives, many reinforcing the point that they would delete the Instagram application if they could. For example, a participant said, "it's kind of like being a drug addict, and I sincerely wish I could just delete everything and not be on it, but for now I can't. I'm a huge procrastinator, so it just enables that". Another participant stated that she deleted Instagram for an entire semester, but when she came back to it, she felt overwhelmed with how much she had missed.

Although the focus group participants disclosed that social media had an overall negative impact on their well-being, the escapism it provided from reality, as well as the procrastination benefits, made it difficult to stop. A participant stated, "obviously it has a negative impact, but you don't know how to get rid of it. It's an escape from reality." Others said:

I feel like this generation has grown in social media. I feel like procrastination is much more prevalent for us because social media is so convenient to escape from our reality. Social media is drug, and if we feel empty or less validated in our own life, it's much easier to get that feeling from your phone rather than from work. Nowadays, you are always with your phone. In a lot of ways, it has negatively impacted me from a procrastination standpoint. Everyone is just comparing their life to everyone else. Comparing has been intertwined in our lives due to social media.

I almost wish social media apps were illegal so that nobody could have them, but knowing that some people do, I can't get rid of it because it keeps that connection. I wish people could just call or text and not use the apps.

Discussion

As discussed earlier, several consistent themes have been identified in the literature with respect to problematic internet use. Similar to other studies in this area, our study identified six relevant themes.

Theme One: Escapism

A theme that emerged from the survey findings was that respondents felt that social media use resulted in a form of escapism from their daily responsibilities or routine. It appeared that this form of escapism was tied to procrastination, which was noted as an unintended consequence of participants' use of Instagram. In fact, some of the focus group participants indicated that they often found themselves procrastinating in order to avoid other pressing tasks or responsibilities. Participants disclosed that they sometimes created time limits or boundaries concerning their time online but soon realized that they were unable to abide by these limits. As such, many participants admitted that the procrastination element transformed into escapism, which often resulted in feelings of guilt about not accomplishing certain tasks. Participants admitted to feeling guilty about not accomplishing what they set out to and how this resulted in losing track of time and control of their online behaviour. Several of the participants reported that the procrastination and distraction elements went hand-in-hand with the issue of addiction.

Many of the participants reflected on how often they became distracted when online, typically due to algorithms and advertisements that are designed to cater to their particular interests. Some of the participants commented on how Instagram does not display the clock when navigating the application, which also resulted in spending more time online than initially intended. Participants also reported that logging in for a particular reason (e.g., to search the profile of a mutual friend) led to searching other profiles, viewing photos, and ultimately spending more time online than they thought. Losing track of time and not being able to control the amount of time spent on Instagram was described by several participants as being related to their possible addiction.

These findings are consistent with recent literature that suggests that Instagram use, particularly watching Instagram stories and liking or commenting on friends' posts, is a form of escapism from reality (Kiraburun and Griffiths, 2019). To successfully escape from reality, individuals need to feel a sense of connectedness to social media and an existence on social media platforms (Kiranburun and Griffiths, 2019). This form of escapism is linked to procrastination and has been reported to be associated with psychological consequences such as anxiety, depression,

withdrawal, mood modification, and stress (Rice, Richardson & Clark, 2012; Kiracburun and Griffiths, 2019). Further, research by Thatcher, Wretschko, and Fridjhon (2008) reported a relationship between problematic Internet use and online procrastination. In another study by Alhabash and Ma (2017), it was reported that, in addition to the typical motivations for using Instagram, such as personal identity and self-promotion, many users reported using Instagram for surveillance. This is consistent with the themes generated during the focus groups. Participants reported that despite their ability to be self-disciplined, they still found it challenging to control their time on this platform. More concerning, however, was how distraction resulted in feelings of inadequacy, self-doubt, and feeling the need to compare with others.

Theme Two: Frustration

Feelings of frustration were reported by several of the participants. Nearly 32% of survey respondents stated that they felt frustrated to see their friends appearing to have a good time on Instagram, and this theme was confirmed during the focus groups. Frustration seemed to be connected to how the participants perceived their own life at the time. Several participants reported that when they were facing rough or challenging times, seeing others on Instagram appearing to have a good time made them feel frustrated.

Participants also explained that frustration was the result of inaccurate portrayals on Instagram, such as appearing to be happier than they actually are. Although participants said that they were self-aware of this misconception, it still made them feel frustrated. Such a statement seemingly reflects an angst or struggle about coping with people portraying false narratives about themselves or presenting their lives a certain way; yet, in fact, the participant knows that such photos or posts are not representative of the person's real life. Others admitted to feeling jealous about other people's photos on Instagram. This jealousy often resulted from friends posting pictures of expensive cars, designer handbags, or simply posting embellished stories of their own lives.

Feelings of frustration are connected to what researchers refer to as "social media fatigue" (Bright, Klesier and Landreth Grau, 2015). This is defined as taking a step back from social media participation when one feels overwhelmed by the information. This feeling was shared by the participants who reported that frustration resulted when friends would showcase false reports or images of their lives or personal growth. As such, participants reported that they felt the need to take a break from Instagram when they felt overwhelmed. Being able to pull away from social media was often challenging and short-lived, but it was a coping mechanism for these feelings. A few of the participants reported that they

would delete Instagram if they could. This is consistent with recent research that suggests that feelings of frustration from social media caused some users take a break from the application (Dhir, Yossatorn, Kaur and Chen, 2018). Our study found that constant use of social media resulted in increased feelings of anxiety, depression, and moral disengagement.

Theme Three: Fear of Missing Out

Fear of missing out was an important theme that emerged from both the survey data and the focus group conversations. Over 16% of respondents reported that they felt anxious when they were not plugged in, and this appeared to be the driving force of anxiety amongst the focus group participants. Most of the participants noted that their fear of missing out was associated with not being able to view Instagram stories, videos or pictures. This created a sense of feeling overwhelmed when they checked into the application again. For some, this anxiety became worse when they were unable to check Instagram for a specific period of time. This anxiety appeared to be rooted in what they had missed when offline, such as who might have seen or liked their post. For another participant, the anxiety resulted from the pressure she felt about having to stay active so that her posts for her culinary business would be seen.

Fear of missing out is one of the most common variables of problematic internet use (Przybylski, Murayama, DeHaan, & Gladwell, 2013; Frost & Rickwood, 2017). Other studies have found that FOMO is associated with higher problematic smartphone and social media use (Chotpitayasunondh and Douglas 2016; Elhai et al. 2016; Oberst et al.2017; Wegmann et al. 2017). The American Psychiatric Association's (APA) study on FOMO found that 40 percent of users felt the need to check social media to avoid missing out on news (Daily Sabah Life, 2015). The study also revealed that FOMO is most common among users between the ages of 15 to 24 and 25 to 34. Further, and consistent with our findings, Oberst et al., (2017), found the relationship between SNSs and anxiety and depression to be mediated by FOMO, especially in females.

In a more recent study by Balta, Emirtekin, Kircaburun, and Griffiths (2018), who surveyed 423 adolescents and young adults between the ages of 14 and 21, it was reported that phubbing (snubbing someone when they check their social media account during a real-life conversation) has become a relatively new but important consequence of smartphone use. In this study, it was discovered that females had significantly higher scores of phubbing, problematic Instagram use, anxiety, neuroticism, and, importantly, fear of missing out.

According to Hunt, Marx, Lipson, and Young (2018) limiting one's social

media use to ten minutes per day per platform resulted in significantly decreased levels of anxiety, loneliness and depression. This finding is relevant to our study as participants commented extensively on how they wished they had been more diligent with the amount of time they spent on social media.

Theme Four: Validation

Another theme that emerged from the findings was validation. Many of the focus group participants articulated that they sought validation for the number of likes or comments they received on their Instagram posts. Receiving likes on a post made several of the participants feel validated.

Participants attributed the acquisition of likes or obtaining affirmative comments as people agreeing with them. Such validation inadvertently made them feel as if they received approval. Having people agree, by liking or commenting on their posts, gave the participants the validation they sought, which several of the participants described as leading to feeling happy and ecstatic. Some participants further described the validation they received from others as being a tingling sensation and a dopamine rush. Essentially, the validation the participants received from others liking or commenting on their posts fueled the addiction to frequently, and often times impulsively, check their Instagram feed. After all, 80.8% of survey respondents checked Instagram a few or several times a day. Thus, perhaps it is not a far stretch to assert that most people on social media are seeking some kind of validation from others.

The validation theme is consistent with other research conducted in the area of social media and human behaviour. According to Edwards (2017) validation has always been part of human nature and this need for validation is an essential and powerful motivating factor for people. While people in general seek social inclusion (Over, 2016) and share an innate drive to connect with others (Lieberman, 2013), younger people are more likely to focus on how they appear to others (Hewitt, Blasberg, Besser, Flett, Sherry, Caelian, Papsdorf, Cassels & Birch, 2011); thus, the 'power of the like' indirectly pressures young social networking users to go to great lengths to receive attention from followers (Edwards, 2017). Ultimately, everyone wants to be liked and it is very easy to attribute 'likes' as a sign of validation.

Theme Five: Anxiety

Anxiety was another identified theme in this study. This emotional response was evident in both the survey (16.3% of the respondents), as well as in the focus group discussions. Generally speaking, anxiety was a negative effect associated with using the Instagram platform, and it

appeared that validation contributed to anxiety for many of the participants. Specifically, based on the subjects' responses, anxiety manifested when experiencing FOMO, largely on the Instagram stories and in some cases the photos and videos, too. Furthermore, when Instagram users had to scroll through a long newsfeed, in which the users had several notifications and several new stories, videos and photos, they felt overwhelmed, which in turn created high levels of anxiety. In some cases, the anxiety was so bothersome that there was an inclination to delete the Instagram application altogether. Some participant anxiety was explained by constantly thinking about who was liking or commenting on their post when they were away from Instagram. Further, the pressure to persistently stay active on the application for business purposes also heightened anxiety. Finally, participants in the study who admitted to frequently comparing their appearance to others sometimes reported a negative body image, which affected their mood, making them anxious about how they looked.

The study of experiencing anxiety as a response to using a social networking site, such as Instagram, is not uncommon. One of the few, yet recent, studies on Instagram and mental well-being provided insight into the psychological impact that Instagram had on its users, and the results demonstrated that anxiety was predicted by 'Instagram anxiety' and social comparison; therefore, when Instagram users felt Instagram anxiety or they took part in social comparison, it was associated with poorer psychological outcomes (Mackson, Brochu & Schneider, 2019).

In addition to scholarly research, 'Instagram anxiety' has been further examined in media articles as well. 'Instagram anxiety' is regarded as a very real issue, especially for millennials who regard themselves as influencers in the media industry, and much of their entrepreneurial success and future opportunities are based on their Instagram success. As such, many become consumed, admitting that the fixation with the application can become dangerous for their mental health, and can sometimes result in judgement, comparison, self-doubt and staging one's life in unhealthy ways (Allen, 2020). Just as addiction was an identified theme in the results of the current study, in many academic studies, it is strongly linked to anxiety (Shensa, Sidani, Dew, Escobar- Viera & Primack, 2018). More specifically, some research results revealed that social media users may develop addictive levels of social media use, which may be linked to increased anxiety levels (Lee-Won, Herzog & Park, 2018).

Theme Six: Addiction

The final theme identified in our study was addiction. Addiction on

social networking sites, such as Instagram, is caused by spending an excess amount of time on the particular application to the point that it can no longer be controlled (Andreassen & Pallesen, 2014). Almost one quarter of respondents in the online survey admitted to finding it challenging to control the amount of time spent on Instagram.

In fact, many of the focus group participants noted an inability to stop themselves from checking their Instagram account. The addiction was described as being unable to control how long they were using the application.

A significant component that sustained the addiction was the incessant 'scrolling' through photos and the viewing of Instagram stories as well as feeling a need to check their Instagram feed for likes and comments. Furthermore, many participants were oblivious in gauging the amount of time spent because they admitted to not accessing the time management tools on Instagram. Such management controls were just recently implemented on the platform to improve the experience of individuals by providing more control over the time used (Ranadive & Ginsberg, 2018). A few of the participants directly referred to the Instagram platform as functioning like a drug and having a direct effect on their brain, such as releasing dopamine, feeling tingling sensations and experiencing a heightened sense of happiness that could be explained as 'euphoric'. Many participants expressed feeling worried about whether the amount of time spent scrolling the platform was good for their overall well-being. The addiction was further reinforced through the escapism it offered its users, who could freely navigate the application and delay their real-life obligations. Ultimately, after summarizing and contemplating the responses from the focus group participants, the addiction to Instagram could be explained by participants as 'diving down a dangerous rabbit hole.'

It is not uncommon to come across an abundance of scholarly literature that has suggested that social networking use can be addictive (Kircaburun & Griffiths, 2018). In the span of two decades, Internet addiction has become a popular topical area for researchers (Kuss & Griffiths, 2011), and yet very few studies have discussed the addictive behaviour on the photo and video sharing application – Instagram (Sholeh & Rusdi, 2020). The most recent study assessing Instagram addiction described how the mechanisms of Instagram not only enable its users to upload photos and videos, to obtain followers, to follow others and to make comments, but also the current feature allows them to 'broadcast live stream' (Kircaburun & Griffiths, 2018). Such live broadcasting, in addition to all the other attractive Instagram features, can often result in overuse and a persistent urge to frequently utilize such tools (Balakrishnan & Griffiths, 2017).

Implications and Recommendations

The research and scholarly literature on SNSs and the general mental health and personal risk victimization outcomes is well established, and there are various forms of education and early intervention strategies, and criminal justice responses that can be implemented to mitigate its detrimental effects. Although social media addiction is not yet recognized as a DSM-5 diagnosis, problematic social media use – derived from problematic Internet use - has been conceptualized as a form of behavioral addiction and is similar to other mental health problems (Ivanov, 2020; Breslau, Aharoni, Pedersen, & Miller, 2015). What appears to be most challenging, however, is that very few strategies have been clinically tested.

Most of the prevention strategies to date rely on existing school and workplace Internet policies, which many students are unaware of. Recently, though, studies have been begun to examine effective ways to implement and enforce comprehensive strategies and prevention programs for individuals at risk for problematic Internet use. Such recommendations refer to curriculum-based education and prevention, as well as training and education for parents, teachers, and clinicians. Importantly, and a promising community-based approach that utilizes peaceful and rehabilitative mechanisms to address the negative consequences associated with cyber victimization is Restorative Justice (RJ).

The present study has some important implications for future research. First, based on our sample, it was evident that young adults struggle with the demands of their smartphones and the pressure to remain active and engaged online. Although our sample was very small and we cannot generalize beyond our findings, it would be worthwhile to explore, in more detail, what specialized resources and tools would be beneficial to users to manage and mitigate the risks associated with Instagram overuse. Importantly, though, users need to be aware of, and be able to identify such warning signs. Further, despite the fact that our findings revealed several themes related to addiction, the participants were not necessarily aware of such themes until they were shared with each other.

This suggests that more qualitative research should be carried out with young adults to further explore these themes and their implications. Second, our findings suggest that parents and families can play a key role in early intervention; however, we know very little about how parents feel and what they believe to be important preventative measures. As such, research conducted with parents could be extremely valuable. Third, the results revealed implications regarding education, in both preventing and

potentially treating problematic Instagram use. Therefore, it would be beneficial to speak with educators and administrators to generate dialogue about how best to implement social media awareness into the curriculum. One example noted by Das, Macbeth, and Elsaesser (2019) was to incorporate RJ strategies and preventative measures into the school-based curriculum.

These specific recommendations are consistent with the recommendations of other studies on this topic. However, it is important to recognize that such recommendations were shared by only eighteen privileged and educated youth attending university in two relatively small institutions in British Columbia who volunteered to share their social media experiences in exchange for a gift card. Therefore, such recommendations are from a non-representative sample and cannot be generalized. Despite these limitations, the majority of the participants held the view that that prevention and mitigation strategies need to begin early – with parents, teachers, and older siblings. As such, we offer the following three recommendations.

Build capacity for parents to effectively engage and manage their children’s social media use

The results of our study suggest that parents should be more engaged with their children on a daily basis, monitoring the applications and time spent online, implementing strict rules for screen time, not allowing screens at the dinner table, and educating their children about the positive and negative aspects of social media. The participants also discussed how older siblings could reflect on their own experience and knowledge to serve as positive role models for their younger siblings. Several of the participants emphasized how important it is to teach young children, particularly girls, about positive body image from an early age before they become exposed to and immersed in the online world of unrealistic expectations of being pretty, fit, and sexy. They shared concerns for their younger siblings and other family members, who at the young age of eight or nine, were already immersed in the world of Snap Chat, a social networking app that allows users to filter photos and share with friends. The participants expressed concern that exposure to social media at a young age, coupled with exposure to celebrity photos and the obsession with filtering photos, has the potential to distort their own self- image and negatively impact mood and overall well-being.

Furthermore, participants offered additional strategies to ensure that youth and young adults are aware of their digital citizenship and digital rights. They also emphasized the need to delay the age in which young children access social media. It appeared that this recommendation was simply a reflection of their own experiences and challenges. From their

personal experiences, the participants stated that they wished their parents had more closely monitored their social media use. As such, some of the participants were explicitly concerned about their younger siblings' social media use; specifically, with the impressionable age their brothers and sisters were. A couple of focus group participants expressed their worry about how, at such a young age, teens they knew were unaware of how prevalent photoshop was being used to 'touch-up' their favourite followers and, even if they were aware of photo filter applications, they would still overlook and assume that the images of perfection were as portrayed.

The participants wished to caution the young girls they knew about the dangers of following celebrities and fitness models. That recommendation is consistent with a recent study that indicated that viewing celebrity photos results in greater dissatisfaction and decreased body appreciation (Brown and Tiggemann, 2020). Again, although these recommendations stem from a very small, non-representative sample from two institutions in British Columbia, the findings of this study indicate that a small number of individuals engage in problematic Internet use and that different variables either exacerbate or mitigate this risk. Therefore, parents and family members should be more involved as they have the potential to serve an important role in mitigating this risk.

Consider adding digital citizenship to the school curriculum and ensure that social media policies are clearly defined by all members of the school community

Following a review of the literature, it appears that very few students are aware of school and institutional policies regarding social media, interpersonal conflict, and privacy (Roy et al., 2020). Given that the findings of this study are similar to more recent research on digital citizenship, the suggestions that digital citizenship be incorporated into the curriculum should be taken seriously. It is quite feasible to introduce social media use and misuse into the school curriculum as early as elementary school.

Students could learn about the advantages and disadvantages of using social media sites, such as Facebook and Instagram, which could in turn help navigate the complex and often challenging world of online communication. Moreover, mandatory curriculum in the context of social media would educate young people on how to communicate safely and effectively online, how to share responsibly and ethically, how to recognize cyberbullying, and how to appreciate the consequences and permanence of social media posts and comments. This form of education could teach young people how to identify and recognize the negative aspects of social networking sites early, such as depression and anxiety, addiction,

escapism and procrastination, fear of missing out, and cyber victimization. Based on our conversations with the focus group participants, digital literacy from K-12 curriculum was regarded as a critical step in addressing the challenges with social media.

Exploring alternative restorative Justice mediation strategies for cyber victimization

The themes noted in this report expose the vulnerabilities that are created or exacerbated by social media. As such, the risk of exploitation for nefarious purposes by criminals must be considered. Currently, the criminal justice research on online victimization is still relatively new and focuses mainly on cyberbullying. Although cyberbullying has existed for some time, the rapid growth of online communication platforms poses an increased risk (Urano, Takizawa, Ohka, Yamasaki and Shimoyama, 2020). More research into understanding the link between how social media usage and cybercrime prevention measures address online victimization is needed. To date, there is no direct Criminal Code provision for cyberbullying; however, there are certain provisions that address cyber victimization such as criminal harassment, uttering threats, intimidation, and extortion. Given that such measures are potentially highly punitive, a more remedial restorative approach for young people could be beneficial in restoring the harm associated with online behaviours. Although victimization was not directly explored in this research, it was apparent that early exposure to online SNS increased the risk of vulnerability which ultimately impacts well-being and potential risk of victimization. Therefore, such approaches could be useful for communities and schools in developing policies to successfully mitigate cyberbullying.

Conclusion

The purpose of this research study was to examine the behaviours associated with problematic Instagram use. The survey results and focus group conversations lead to the development of the main themes related to social media use. In an effort to reduce the levels of anxiety, fear of missing out, escapism, validation, frustration, addiction, and potential for victimization among a sample of 18 university students, it was suggested that young adults, parents, and teachers educate themselves early and develop strategies for managing problematic or risky online behaviors. In addition, early education for students and parents, targeted school programs, curriculum development, and training, along with appropriate conflict resolution awareness strategies could help mitigate such risk.

References

- Abjaude, S., Pereira, L., Zanetti, M., Pereira, L. (2020). "How do social media influence mental health?" *SMAD, Rev Electronica Saude Mental Alcool Drog.* 16(1): 1-3.
- Aboujaoude, E. (2010). "Problematic internet use: an overview". *World Psychiatry*, 9(2): 85-90.
- Al-Dubai, S., Ganasegeran, K., Al-Shagga, M., Yadav, H., & Arokiasamy, J. (2013). "Adverse health effects and unhealthy behaviors among medical students using Facebook." *The Scientific World Journal*, pp. 1-5.
- Alexa Internet (2013). Alexa Top 500 Global Sites. Alexa.com. Retrieved from <http://www.alexa.com/topsites>
- Alt, D. (2017). "Students' social media engagement and fear of missing out (FOMO) in a diverse classroom".
- Anderson M., & Jiang, J. (2018). "Teens, social media & technology." Retrieved from: Pew Research Center (2018). p. 31. <https://www.pewinternet.org/2018/05/31/teens-social-media-technology-2018/>
- Andreassen, C. S., Pallesen, S., & Griffiths, M. D. (2016). "The relationship between addictive use of social media, narcissism, and self-esteem: Findings from a large national survey". *Addictive Behaviors*, 64: 287-293.
- Andreassen, C. (2015). "Online social network site addiction: A comprehensive review". *Current Addiction Reports*, 2: 175-184.
- Bahtiyar, M. & Kircaburun, K. (2017). *Investigation of high school students' social media use in the context of children's rights*. Paper presented at International Children's Rights Congress, Duzce, Turkey.
- Bair, C. E., Kelly, N. R., Serdar, K. L., & Mazzeo, S. E. (2012). "Does the Internet function like magazines? An exploration of image-focused media, eating pathology, and body dissatisfaction." *Eating Behaviors*, 13, 398-401.
- Balakrishnan, V., & Shamim, A. (2013). "Malaysian Facebookers: Motives and addictive behaviours unraveled". *Computers in Human Behavior*, 29(4): 1342-1349.
- Baldry, A. C., Sorrentino, A., & Farrington, D. P. (2019). "Post-traumatic stress symptoms among Italian preadolescents involved in school and cyber bullying and victimization." *Journal of Child and Family Studies*, 28, 2358-2364.
- Barry, C., Doucette, H., Loflin, D., Rivera-Hudson, N., & Herrington, L. (2017). "Let me take a selfie': Associations between self-photography, narcissism, and self-esteem". *Psychology of Popular Media Culture*, 6(1) pp. 48-60.

- Becker, A. E., Fay, K. E., Agnew-Blais, J., Khan, A. N., Striegel-Moore, R. H., & Gilman, S. E. (2011). "Social network media exposure and adolescent eating pathology in Fiji". *The British Journal of Psychiatry*, 198: 43-50.
- Bennett, S. (2014). "A brief history of the #selfie (1839–2014)". *Media Bistro*, Online Access: http://www.mediabistro.com/alltwitter/first-ever-selfie-history_b5843
- Bergman, S. (2011). "Millennials, narcissism, and social networking: What narcissists do on social networking sites and why". *Personality and Individual Differences*, 50(5): 706-711.
- Bessiere K, Pressman S, Kiesler S., & Kraut, R. (2010). "Effects of internet use on health and depression: A longitudinal study. *Journal of Medical Internet Research*, 12(1): 78-91.
- Best P, Manktelow R., & Taylor B. (2014). "Online communication, social media and adolescent wellbeing: A systematic narrative review". *Children and Youth Services Review*, 41: 27–36.
- Beware of Social Media Addiction It May Cause FOMO Anxiety. Online Access: <https://www.linkedin.com/in/saarathi-counselling-services-39a86295>
- Biolcatic, R., & Cani, D. (2018). "Narcissism and self-esteem: Different motivations for selfie posting behaviors". *Cogent Psychology*, 5(1): 1-12.
- Biolcati, R., & Cani, D. (2015). "Feeling alone among friends: Adolescence, social networks and loneliness". *Webology*, 12(2): 1–9.
- Blackwell, D., Leaman, C., Tramposch, R., Osborne, C., & Liss, M. (2017). "Extraversion, neuroticism, attachment style and fear of missing out as predictors of social media use and addiction". *Personality and Individual Differences*, 116: 69-72.
- Blease, C.R. (2015). "Too many 'friends,' too few 'likes'? Evolutionary psychology and 'Facebook depression'". *Review of General Psychology*, 19(1): 1-13.
- Boudjani, H., Potvin, Stephane., Chayer, Celine., Charbonneau, S., & Lanthier, S. (2014). "Striatum inhibition: Clues for cocaine addiction therapy." *The Canadian Journal of Neurological Sciences*, 41(5): 664-665.
- Boyd, D., & Ellison, N. (2007). "Social network sites: definition, history and scholarship." *Journal of Computer-Mediated Communication*. 13(1): 210-230.
- Brailovskaia, J., & Bierhoff, H.W. (2016). "Cross-cultural narcissism on Facebook: Relationship between self-presentation, social interaction and the open and covert narcissism on a social networking site in Germany and Russia." *Computers in Human Behavior*, 55: 251-257.
- Brailovskaia, Julia., & Margraf, J. (2016). "Comparing facebook users and

- facebook non-users: relationship between personality traits and mental health variables - an exploratory study." *PLOS ONE*. 11(12): 1-17.
- Briand, L., Flagel, S., Seeman, P., & Robinson, T. (2008). "Cocaine self-administration produces a persistent increase in dopamine D2 (high) receptors." *European Neuropsychopharmacology*, 18(8): 551-556.
- Brown, S., Serin, R., Forth, A., Nunes, K, Bennell, C & Pozzulo, J. (2018). *Psychology of Criminal Behavior: A Canadian Perspective*. 2nd Edition. Pearson.
- Chan, T., Cheung, C., & Lee, Z. (2021). Cyberbullying on social networking sites: A literature review and future research directions. *Information & Management*, 58 (2).
- Chen, W., & Lee, K. (2013). "Sharing, liking, commenting and distressed? The pathway between Facebook interaction and psychological distress." *Cyberpsychology, Behavior, and Social Networking*, 16(10): 728-734.
- Chow, Tak S., & Wan, Hau Y. (2017). "Is there any 'Facebook depression'? Exploring the moderating roles of neuroticism, Facebook social comparison and envy". *Personality and Individual Differences*. 119: 277-282.
- Chou, H., & Edge, N. (2012). "They are happier and having better lives than I am: The impact of using Facebook perceptions of others' lives." *Cyberpsychology, Behavior, and Social Networking*, 15(2): 117-121.
- Comscore (2011). It's a social world: Top 10 need-to-knows about social networking and where it's headed. Retrieved from: https://www.comscore.com/Insights/Presentations-and-Whitepapers/2011/it_is_a_social_world_top_10_need-to-knows_about_social_networking?cs_edgescape_cc=CA
- Constine, Josh. (2016). "Facebook climbs to 1.59 billion users and crushes Q4 estimates with \$5.8B revenue". Retrieved from: <https://techcrunch.com/2016/01/27/facebook-earnings-q4-2015/>. Jan 27, 2016.
- Datu, J., Valdez, J., & Datu, N. (2012). "Does facebook make us sad? Hunting relationship between Facebook use and depression among Filipino adolescents". *International Journal of Research and Studies in Educational Technology*. 1(2): 83-91.
- Davenport, S., Bergman, S., Bergman, J., & Fearington, M. (2014). "Twitter versus facebook: exploring the role of narcissism in the motives and usage of different social media platforms". *Computers in Human Behavior*. 32: 212-220.
- Department of Justice. (2021). "Cyberbullying and the Non-consensual Distribution of Intimate Images." Government of Canada. Retrieved from: <https://www.justice.gc.ca/eng/rp-pr/other-autre/cndii-cdncii/p4.html>

- Dhir, A., Kaur, P., Chen, S., Lonka, K. (2016). Understanding online regret experience in Facebook use – effects of brand participation, accessibility & problematic use." *Computers in Human Behavior*. 59: 420-430.
- Dickinson, K.A., & Pincus, A.L. (2003). "Interpersonal analysis of grandiose and vulnerable narcissism." *Journal of Personality Disorders*, 17(3): 188-207.
- Dizik, A. (2017). "The addiction that's worse than alcohol or drug abuse". *Capital*, Online Access: <http://www.bbc.com/capital/story/20170417-the-addiction-thats-worse-than-alcohol-or-drug-abuse>
- Duggen, M., & Brenner, J. (2013). "The Demographics of Social Media Users – 2012." *Pew Research Center: Internet and Technology*, Online Access: <http://www.pewinternet.org/2013/02/14/the-demographics-of-social-media-users-2012/>
- Elhai, J.D., Dvorak, R.D., Levine, J.C., & Hall, B.J. (2017). "Problematic smartphone use: A conceptual overview and systematic review of relations with anxiety and depression psychopathology", *Journal of Affective Disorders*, 207: 251-259.
- Elhai, J.D., Hall, B.J., Erwin, M.C. (2018). "Emotion regulation's relationships with depression, anxiety and stress due to imagined smartphone and social media loss." *Psychiatry Research*. Vol 261: 28-34.
- Elhai, J., Levine, J., Dvorak, R., & Hall, B. (2016). "Fear of missing out, need for touch, anxiety and depression are related to problematic smartphone use". *Computers in Human Behavior*, 63: 509- 516.
- Ellison, N., Steinfield, C., & Lampe, C. (2007). "The benefits of Facebook "friends:" Social capital and college students' use of online social network sites". *Journal of Computer-Mediated Communication*, 12: 1143-1168.
- Elphinston, R., & Noller, P. (2011). "Time to face it! Facebook intrusion and the implications for romantic jealousy and relationship satisfaction". *Cyberpsychology, Behavior and Social Networking*, 14(11): 631-635.
- Emrani, Tara. (2018). "Facebook and drug addiction have a lot in common". Video: <http://www.fox2detroit.com/entertainment/305637381-video>
- Etgar, S., & Amichai-Hamburger, Y. (2017). "Not all selfies took alike: Distinct selfie motivations are related to different personality characteristics." *Frontiers in Psychology*, 8(842): 1-10.
- Facebook (2016). Retrieved from: <http://newsroom.fb.com/company-info/>
Facebook. (2018). Statistics. Retrieved from: <http://newsroom.fb.com/company-info>
- Fardouly, J., Diedrichs, P., Vartanian, L., & Halliwell, E. (2015). "Social comparisons on social media: The impact of Facebook on young women's body image concerns and mood". *Body Image*. 13: 38-45.

- Fardouly, J., & Vartanian, L. (2015). "Negative comparisons about one's appearance mediate the relationship between Facebook usage and body image concerns". *Body Image*: 82-88.
- Fardouly, J., & Vartanian, L. (2016). "Social media and body image concerns: Current research and future directions. *Current Opinion in Psychology*, 9: pp. 1-5. FOMO disorder linked to social media addiction. Online Access: <https://www.dailysabah.com/life/2015/01/19/fomo-disorder-linked-to-social-media-addiction>.
- Forest, A. L., & Wood, J. V. (2012). "When social networking is not working: Individuals with low self-esteem recognize but do not reap the benefits of self-disclosure on Facebook". *Psychological Science*, 23: 295-302.
- Frison, E., & Eggermont, S. (2016a). "Exploring the relationships between different types of Facebook use, perceived online social support, and adolescents depressed mood." *Social Science Computer Review*, 34(2): 153-171.
- Frison, E., & Eggermont, S. (2016b). "The impact of daily stress on adolescents' depressed mood: The role of social support seeking through Facebook." *Computers in Human Behavior*, 44: 315-325.
- Frost, Rachel, L., & Rickwood, Debra, J. (2017). "A systematic review of the mental health outcomes associated with Facebook use". *Computers in Human Behaviour*. Vol 76: 576-600.
- Gerson, J., Plagnol, A.C., & Corr, P.J. (2016). "Subjective well-being and social media use: Do personality traits moderate the impact of social comparison on Facebook"? *Computers in Human Behavior*, 63: 813-822.
- Gasso, A., Klettke, B., Jose, A., and Montiel, I. (2019). Sexting, mental health, and victimization among adolescents: A literature review. *Journal of Environmental Research and Public Health*, 16 (13).
- Gibbons, Jeffrey A., Horowitz, Kyle A., & Dunlap, Spencer M. (2017). "The fading affect bias shows positive outcomes at the general but not the individual level of analysis in the context of social media". *Consciousness and Cognition*. Vol 53: 47-60.
- Gonzales, A, Hancock, J.T.(2011). Mirror mirror on my Facebook wall: Effects of exposure to Facebook on self-esteem". *Cyberpsychology, Behavior and Social Networking*, 14(1-2): 79-83.
- Gordon, K. (2017). "Social networking in Canada – statistics and facts". *The Statistics Portal*, Online Access: <https://www.statista.com/topics/2729/social-networking-in-canada/>
- Grabe, S., Ward, L. M., & Hyde, J. S. (2008). "The role of the media in body image concerns among women: A meta-analysis of experimental and correlational studies". *Psychological Bulletin*, 134: 460- 476.

- Grant, J.E., Potenza, M.N., Weinstein, A., Gorelick, D.A. (2010). "Introduction to behavioral addictions". *American Journal of Drug and Alcohol Abuse*, 36(5): 233-41.
- Grieve, R., Indian, M., Witteveen, K., Tolan, A., & Marrington, J. (2013). "Face-to-face or Facebook: Can social connectedness be derived online"? *Computers in Human Behaviour*, 29(3): 604-609.
- Griffiths, M.D., (1996). "Internet addiction: an issue for clinical psychologists". *Clinical Psychology Forum*, 97: 32-36.
- Griffiths, M. D. (2013). Social networking addiction: Emerging themes and issues. *Journal of Addiction Research & Therapy*, 4, e118.
- Griffiths, M. D., Kuss, D. J. & Demetrovics, Z. (2014). *Social networking addiction: An overview of preliminary findings*. In K. P. Rosenberg & L. C. Feder (Eds.), *Behavioral addictions: Criteria, evidence, and treatment* (pp. 119-141). London: Academic Press.
- Hancock, J.T., & Dunham, P.J. (2001). "Impression formation in computer-mediated communication". *Communication Research*, 28: 325-347.
- Hawi, N. S., & Samaha, M. (2016). "To excel or not to excel: Strong evidence on the adverse effect of smartphone addiction on academic performance". *Computers & Education*, 98: 81-89.
- Hernandez, M., Schoeps, K., Magnato, C., and Inmaculada, M. (2021). The risk of sexual-erotic online behaviour – which personality factors predict sexting and grooming victimization? *Computers in Human Behaviour*, 114, January 2021, 106569.
- Hunt, M., All, K., Burns, B., & Li., K. (2021). "Too Much of a Good Thing: Who We Follow, What We Do, And How Much Time We Spend on Social Media Affects Well-Being." *Journal of Social and Clinical Psychology*, 40(1): 46-68.
- Holmstrom, A. J. (2004). "The effects of the media on body image: A meta-analysis". *Journal of Broadcasting & Electronic Media*, 48: 196-217.
- Hong, F., Huang, D., Lin, H., & Chiu, S. (2014). "Analysis of the psychological traits, Facebook usage, and Facebook addiction model of Taiwanese university students". *Telematics Inform*, 31: 597-606.
- Horwood, S. (2018). "Personality and problematic smartphone use: A facet-level analysis using the Five Factor Model and HEXACO frameworks". *Computers in human behavior*, 85: 349-359.
- Ivanov, Z. (2020). "How social media affects the mental health of teenagers." *Business Insider*. Retrieved from: <https://www.businessinsider.nl/how-does-social-media-affect-teenagers/>
- Jan, M., Sanobia, S., & Ahmad, N. (2017). "Impact of social media on self-esteem". *European Scientific Journal*, 13(23): 329-341.

- Jang, K., Park, N., & Song, H. (2016). "Social comparison on Facebook: Its antecedents and psychological outcomes". *Computers in Human Behavior*, 62: 147-154.
- Jelenchick, L.A., Eickhoff, J.C., & Moreno, M.A. (2013). "Facebook depression? Social networking site use and depression in older adolescents". *Journal of Adolescent Health*. 52(1): 128-130.
- Joinson, A. N. (2008). "Looking at', 'looking up' or 'keeping up with' people? Motives and uses of Facebook." *Online Social Networks*. Retrieved from: http://digitalintelligencetoday.com/downloads/Joinson_Facebook.pdf.
- Judd, T. (2014). "Making sense of multitasking: The role of Facebook." *Computers & Education*, 70: 194-202.
- Kajonius, P.J., & Daderman, A.M. (2017). "Conceptualizations of Personality Disorders with the five-factor model-count and empathy traits". *International Journal of Testing*, 17(2): 141-157.
- Kalpidou, M., Costin, D., & Morris, J. (2011). "The relationship between Facebook and the well-being of undergraduate college students." *Cyberpsychology, Behavior, and Social Networking*. 14(4): 183-189.
- Kandell, J. (1998). "Internet addiction on campus: The vulnerability of college students". *Cyberpsychology & Behavior*, 1(1): 11-17.
- Kanokporn, S., & Peerayuth, C. (2016). "Face it, don't Facebook it: Impacts of social media addiction on mindfulness, coping strategies and the consequence on emotional exhaustion". *Stress and Health: Journal of the International Society for the Investigation of Stress*, 32(4): 427-434.
- Kapidzic, S. (2013). "Narcissism as a predictor of motivations behind Facebook profile picture selection." *Cyberpsychology, Behavior, & Social Networking*, 16: 14-19.
- Kardaras, N. (2016). *Glow kids: How screen addiction is hijacking our kids – and how to break the trance*. St. Martin's Press. New York.
- Karpinski, A. C., Kirschner, P. A., Ozer, I., Mellott, J. A., & Ochwo, P. (2013). "An exploration of social networking site use, multitasking, and academic performance among United States and European University students". *Computers in Human Behavior*, 29: pp:1182-1192.
- Kayis, A. R., Satıcı, S. A., Yılmaz, M. F., Simsek, D., Ceyhan, E., Bakioglu, F. (2016). "Big Five-trait and internet addiction: A meta-analytic review".
- King, J., Walpole, C., & Lamon, K., (2007). "Surf and turf wars online: Growing implications of Internet gang violence." *Journal of Adolescent Health*, 41(6).
- Koc, M., & Gulyagci, S. (2013). "Facebook addiction among Turkish college students: The role of psychological health, demographic and usage characteristics." *Cyberpsychology, Behavior, and Social Networking*. 16(4):

279-284.

- Kraut, R., Patterson, M., Lundmark, V., Kiesler, S., Mukophadhyay, T., Scherlis, W. (1998). "Internet paradox. A social technology that reduces social involvement and psychological well-being"? *The American Psychologist*, 53: 1017-1031.
- Krizan, Z., & Bushman, B.J. (2011). "Better than my loved ones: Social comparison tendencies among narcissists". *Personality and Individual Differences*, 50(2): 212-216.
- Kross, E., Verduyn, P., Demiralp, E., Park, J., Lee, D.S., & Lin, N. et al. (2013). "Facebook use predicts declines in subjective well-being in young adults". *PLoS One*. 8(8): e69841.
- Kuss, D.J., & Griffiths, M.D. (2011). "Online social networking and addiction: A review of the psychological literature". *International Journal of Environmental Research and Public Health*, 8(9): 3528-3552.
- Kuss, D.J., Griffiths, M.D., Karila, L. & Billieux, J. (2014). Internet addiction: A systematic review of epidemiological research for the last decade. *Current Pharmaceutical Design*, 20: 4026-4052.
- Labrague, L. (2014). "Facebook use and adolescents' emotional states of depression, anxiety, and stress." *Health Science Journal*, 8(1): 80-89.
- LaRose, R., Kim, J. & Peng, W. (2010). Social networking: Addictive, compulsive, problematic, or just another media habit? In Z. Papacharissi (Ed.), *A networked self: Identity, community, and culture on social network sites*. New York, NY: Taylor & Francis.
- Lee, S., Park, M., & Tam, C. (2015). The relationship between Facebook attachment and obsessive-compulsive disorder severity. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*. Vol 9, 2-6.
- Lee-Won, R., Herzog, L., & Gwan Park, S. (2015). "Hooked on Facebook: The role of social anxiety and need for social assurance in problematic use of Facebook". *Cyberpsychology, Behavior, and Social Networking*, 18(10): 567-574.
- Levine, M. P., & Murnen, S. K. (2009). "Everybody knows that mass media are/are not [pickone] a cause of eating disorders: A critical review of evidence for a causal link between media, negative body image, and disordered eating in females." *Journal of Social and Clinical Psychology*, 28: 9-42.
- Lockwood, P., & Kunda, Z. (1997). "Superstars and me: Predicting the impact of role models on the self." *Journal of Personality and Social Psychology*, 73: 91-103.
- Longobardi, C., Settani, M., Fabris, M.A., & Marengo, D. (2020). "Follow or be followed: Exploring the links between Instagram Popularity, social media

- addiction, cyber victimization and subjective happiness in Italian adolescents." *Children and Youth Services Review*, 113: 104955.
- MacMillan, A. (2017). "Why Instagram is the worst social media for mental health". *Time*. Retrieved from: <https://time.com/4793331/instagram-social-media-mental-health/>.
- Makwana, B., Lee Y, Parkin, S. & Farmer, L. (2018). "Selfie-Esteem: The relationship between body dissatisfaction and social media in adolescent and young women. *The Inquisitive Mind*, 35(1): Online Access - <http://www.in-mind.org/article/selfie-esteem-the-relationship-between-body-dissatisfaction-and-social-media-in-adolescent>
- Malouff, J. M., Thorsteinsson, E. B., Rooke, S. E., Schutte, N. S. (2007). "Alcohol involvement and the five-factor model of personality: A Meta-Analysis, *Journal of Drug Education*, 37 (3): 217–226.
- Manago, A.M., Taylor, T., & Greenfield, P.M. (2012). "Me and my 400 friends: The anatomy of college students' Facebook networks, their communication patterns and well-being." *Developmental Psychology*, 48(2): 369-380.
- Marino, C., Finos, L., Vieno, A., Lenzi, M., & Spada, M. (2017). "Objective Facebook behaviour: Differences between problematic and non-problematic users". *Computers in Human Behavior*, 73: 541-546.
- Marker, C., Gnambs, T., Appel, M. (2017). "Active on Facebook and failing at School? Meta-analytic findings on the relationship between online social networking activities and academic achievement." *Educational Psychology Review*, 1–27.
- Martino, J. (2014). "Scientists link selfies to narcissism, addiction, and mental illness. *Collective Evolution*, Online Access: <http://www.collectiveevolution.com/2014/04/07/scientists-link-selfies-to-narcissism-addiction-mental-illness/>
- Maximilians, J. (2018). -, "Is social media to blame for poor grades?" *ScienceDaily*, Online access: <https://www.sciencedaily.com/releases/2018/02/180219103217.htm>
- McCain, J.L., & Campbell, K.W. (2016). "Narcissism and social media use: A meta-analytic review". *Psychology of Popular Media Culture*, Online First Publication: [http:// dx.doi.org/10.1037/ppm0000137](http://dx.doi.org/10.1037/ppm0000137).
- McLean, Susan. (2013). "Problematic internet use: Young people and the online world are synonymous, but when does it become excessive"? *Advice Sheets, Sexting, Department of Education and Training*, 1-2. <https://www.education.vic.gov.au/Documents/about/programs/bullystopper/s/smproblematic.pdf>
- Mehdizadeh, S. (2010). "Self-presentation 2.0: narcissism and self-esteem on Facebook." *Cyberpsychology, Behavior & Social Networking*, 13(4): 357–364.

- Meerkerk, G. J., van den Eijnden, R. J., Vermulst, A. A. & Garretsen, H. F. (2009). The Compulsive Internet Use Scale (CIUS): Some psychometric properties. *Cyberpsychology & Behavior*, 12: 1–6.
- Molloy, M. (2016). "Facebook addiction `activates same part of the brain as cocaine". Online: <https://www.telegraph.co.uk/news/12161461/Facebook-addiction-activates-same-part-of-the-brain-as-cocaine.html>
- Morse, S., & Gergen, K. J. (1970). "Social comparison, self-consistency, and the concept of self". *Journal of Personality and Social Psychology*, 16: 148–156.
- Muscanell, N., Guadagno, Rice, L., & Murphy, S. (2013). "Don't it make my brown eyes green? An analysis of Facebook use and romantic jealousy. *Cyberpsychology, Behavior, And Social Networking*, 16(4): 237-242.
- Nadakarni, A., & Hofmann, S.G. (2012). "Why do people use facebook?" *Personality and Individual Differences*, 52(3): 243-249
- Nazir, S. & Samaha, M. (2017). "The relations among social media addiction, self-esteem, and life satisfaction in University students". *Social Science Computer Review*, 35(5): 576-586.
- Naderifar, M.; Goli, H.; and Ghaljaie, F. (2017). "Snowball Sampling: A Purposeful Method of Sampling in Qualitative Research." *Strides in Development of Medical Education*, 14(3).
- No author. (April 4, 2015). "Social media affects the brain like a drug". *Promises Treatment Center*, Online Access: <https://www.promises.com/articles/other-types-of-addiction/social-media-affects-the-brain-like-a-drug/>
- Oberst, U., Wegmann, E., Stodt, B., Brand, M., & Chamarro, A. "Negative consequences from heavy social networking in adolescents: The mediating role of fear of missing out". *Journal of Adolescence*, 55: 51-60.
- Ormel, J., Rosmalen, J., & Farmer, A. (2004). "Neuroticism: a non-informative marker of vulnerability to psychopathology". *Social Psychiatry and Psychiatric Epidemiology*, 39: 906-912.
- Ozimek, P., Baer, F., & Forster, J. (2017). "Materialists on Facebook: the self-regulatory role of social comparisons and the objectification of Facebook friends". *Heliyon*, 3(1): e00449. Open Access: <https://doi.org/10.1016/j.heliyon.2017.e00449>
- Ozimek, P., Bierhoff, H.W., & Hanke, S. (2018). "Do vulnerable narcissists profit more from Facebook use than grandiose narcissists? An examination of narcissistic Facebook use in the light of self-regulation and social comparison theory." *Personality and Individual Differences*. 124: 168-177.
- Ozimek, P., & Forster, J. (2017). "The impact of self-regulatory states and traits on Facebook use: Priming materialism and social comparisons". *Computers*

in *Human Behavior*, 418-427.

- Panek, E., Nardis, Y., & Konrath, S. (2013). "Mirror or megaphone? How relationships between narcissism and social networking site use differ on Facebook and Twitter". *Computers in Human Behavior*, 29(5): 2004-2012.
- Pantic, I. (2014). "Social networking and depression: An emerging issue in behavioral physiology and psychiatric research". *The Journal of Adolescent Health*, 54: 745-746.
- Pantic, I., Damjanovic, A., Todorovic, Topalovic, D., Bojovic-Jovic, D., Ristic, S., Pantic, S. (2012). "Association between online social networking and depression in high school students: Behavioral physiology viewpoint". *Medicinska Naklada*, 24: 90-93.
- Parkin, S. (2018). "Has dopamine got us hooked on tech?" *The Guardian*, (online access): <https://www.theguardian.com/technology/2018/mar/04/has-dopamine-got-us-hooked-on-tech-facebook-apps-addiction>
- Pearson, C., & Hussain, Z. (2015). "Smartphone use, addiction, narcissism, and personality: A mixed methods investigation. International journal of cyber behavior". *Psychology and Learning*, 5(1): pp. 17- 32.
- Pempek, T.A., Y., Yermolayeva, Y.A., & Calvert, S.L., L. (2008). "College students' social networking experiences on Facebook". *Journal of Applied Developmental Psychology*, 30(3).
- Pichai, Kaavya. (2020). "Like or Dislike: On Instagram, That's Not the Whole Picture: The underlying truth behind social media's competitive and comparative nature." *Thrive Global on Campus*. Retrieved from: <https://thriveglobal.com/stories/instagram-likes-mental-health-impact-anxiety-stress/>
- Pincus, A.L., & Roche, M.J. (2011). "Narcissistic grandiosity and narcissistic vulnerability". Campbell, W.K., & Miller, J.D. (Eds.), *Handbook of narcissism and narcissistic personality disorder*, John Wiley & Sons, Hoboken, NJ (2011), 31-40.
- Primack, Brian A., & Escobar-Viera, C. (2017). "Social media as it interfaces with psychosocial development and mental illness in transitional age youth". *Child and adolescent psychiatric clinics of North America*. Vol 26(2): 217-233.
- Przybylski, K., Murayama, K., DeHaan, C., & Gladwell, V. (2013). "Motivational, emotional, and behavioral correlates of fear of missing out". *Computers in Human Behavior*, 29(4): 1841-1848.
- Puglia, D. (2017). "Social media use and its impact on body image: The effects of body comparison tendency, motivation for social media use, and social media platform on body esteem in young women. *Master of Arts Thesis*, Chapel Hill.

- Qiu, L., Lu, J., Yang, S., Qu, W., & Zhu, T. (2015). "What does your selfie say about you"? *Computers in Human Behavior*, 52: 443-449.
- Rainocheck, D. (2013). "How Facebook (FB) is altering your mind." *Social Media, The Human Mind*, Online: <http://davidrainoshek.com/2013/06/how-facebook-fb-is-altering-your-mind-2/>
- Rao, Tony. (2017). "Social media is as harmful as alcohol and drugs for millennials". *The Conversation: Academic Rigor, Journalistic Flair*, Online Access: <http://theconversation.com/social-media-is-as-harmful-as-alcohol-and-drugs-for-millennials-78418>
- Roberts, J. A., Pullig, C., & Manolis, C. (2015). "I need my smartphone: A hierarchical model of personality and cell-phone addiction". *Personality and Individual Differences*, 79: 13-19.
- Rodriguez, S. (2020). "TikTok passes Instagram as second-most popular social app for U.S. teens." Retrieved from: <https://www.cnn.com/2020/10/06/tiktok-passes-instagram-as-second-most-popular-social-app-for-us-teens.html>
- Rohmann, E., Neumann, E., Herner, M.J., Bierhoff, H.W. (2012). "Grandiose and vulnerable narcissism: self-construal, attachment, and love in romantic relationships." *European Psychologist*. 17(4): 279- 290.
- Rosen, L.D., Carrier, L.M., & Cheever, N.A. (2013). "Facebook and texting made me do it: Media-induced task-switching while studying". *Computers in Human Behavior*, 29(3): 948-958.
- Rosen, L.D., Whaling, K., Rab, S., Carrier, L.M., & Cheever, N.A. (2013). "Is Facebook creating 'disorders'? The link between clinical symptoms of psychiatric disorders and technology use, attitudes and anxiety". *Computers in Human Behavior*. 29: 1243-1254.
- Royal Society for Public Health (2017). "Status of Mind: Social media and young people's mental health." Retrieved from: <https://www.rsph.org.uk/static/uploaded/d125b27c-0b62-41c5-a2c0155a8887cd01.pdf>
- Ryan, T., Chester, A., Reese, J., & Xenos, S. (2014). "The uses and abuses of Facebook: A review of Facebook addiction." Vol 3(3): 133-148.
- Ryan, T., & Xenos, S. (2011). "Who uses Facebook? An investigation into the relationship between the big five, shyness, narcissism, loneliness, and Facebook usage". *Computers in Human Behavior*, 27(5): 1658-1664.
- Seabrook, M., Kern, M. & Rickard, N. (2016). "Social Networking Sites, Depression, and Anxiety: A systematic review. *JMIR Mental Health*, 3(4): 50.
- Shapira, N.A., Lessig, M.C, Goldsmith, T.D., Szabo, S.T, Lazoritz, M, Gold, M.S., Stein, D.J. (2003). "Problematic internet use: proposed classification

- and diagnostic criteria". *Depress Anxiety*, 17(4): 207-16.
- Shaw, A.M., Timpano, K.R., Tran T.B., Joormann, J. (2015). "Correlates of Facebook usage patterns: The relationship between passive Facebook use, social anxiety symptoms, and brooding". *Computers in Human Behavior*, 48: 575-580.
- Sherlock, Mary., Wagstaffe, Daniel L. (2018). "Exploring the relationship between frequency of Instagram use, exposure to idealized images, and psychological well-being in women. *Psychology of Popular Media Culture*. Advance online publication. April 12, 2018.
- Simonicic, T.E., Kuhlman, K.R., Vargas, I., Houchins, S., Lopez-Duran, N.L. (2014). "Facebook use and depressive symptomatology: Investigating the role of neuroticism and extraversion in youth. *Computers in Human Behaviour*. 40: 1-5.
- Smith, A., & Anderson, M. (2018). "Social media use in 2018". *Pew Research Center*, Online Access: <http://www.pewinternet.org/2018/03/01/social-media-use-in-2018/>
- Smith, A., Segall, L., & Cowley, S. (2012). "Facebook reaches one billion users". *CNNMoney*. Retrieved from: <http://money.cnn.com/2012/10/04/technology/facebook-billion-users/index.html>
- Smith, J. (2010). "December data on Facebook's US growth by age and gender: Beyond 100 million." *Inside Facebook*. Retrieved from: <http://www.adweek.com/digital/december-data-on-facebook%E2%80%99s-us-growth-by-age-and-gender-beyond-100-million/>
- Smith, N. (2018). "Social media looks like the new opiate of the masses." *Bloomberg*, Online Access: <https://www.bloomberg.com/view/articles/2018-04-04/social-media-use-bears-similarities-to-drug-addiction>
- Sung, Y., Lee, J.A., Kim, E., & Choi, S.M. (2016). "Why we post selfies: Understanding motivations for posting pictures of oneself". *Personality and Individual Differences*, 97: 260- 265.
- Tackett, J.L., & Lahey, B.B. (2017). *The Oxford handbook of the Five Factor Model*. Widiger, Thomas A., (Ed); pp. 39-56. New York, NY, Oxford University Press.
- Thompson, E.R. (2008). "Development and validation of an international English big-five mini-markers". *Personality and Individual Differences*, 45(6): 542-548.
- Tiggemann, M., & Slater, A. (2013). NetGirls: The Internet, Facebook, and body image concern in adolescent girls". *International Journal of Eating Disorders*, 46: 630-633.
- Tiggemann, M., & Zaccardo, M. (2015). "Exercise to be fit, not skinny": The

- effect of fitspiration imagery on women's body image. *Body Image*, 15: 61-67.
- Tiggemann, M., & Zaccardo, M. (2016). "Strong is the new skinny: A content analysis of #fitspiration images on Instagram". *Journal of Health Psychology*. 17: 132-135.
- Tucker, J.H., (2010). "Status update: "I'm so glamorous." A study of Facebook users shows how narcissism and low self-esteem can be interrelated". *Scientific American*, 303(5): 32.
- Turel, Ofir. (2018). "Neuroticism magnifies the detrimental association between social media addiction symptoms and wellbeing in women but not in men: A three-way moderation model." *Psychiatric Quarterly*. Feb 3 (Online First Posting). <http://dx.doi.org.ezproxy.kpu.ca:2080/10.1007/s11126-018-9563-x>.
- Turner, P. G., & Lefevre, C. E. (2017). "Instagram use is linked to increased symptoms of orthorexia nervosa". *Eating and Weight Disorders*, 22(2): 277-284.
- Urano, Y., Takizawa, R., Ohka, M., Yamasaki, H., & Shimoyama, H. (2020). "Cyber bullying victimization and adolescent mental health: The differential moderating effects of intrapersonal and interpersonal emotional competence." *Journal of Adolescence*. 80: 182-191.
- Valkenburg, P.M., Peter, J., Schouten, A.P. "Friend networking sites and their relationship to adolescents' well-being and social self-esteem". *Cyberpsychology & Behavior*, 9(5): 584-90.
- van den Eijnden, R. J., Lemmens, J. S., & Valkenburg, P. M. (2016). "The social media disorder scale: Validity and psychometric properties". *Computers in Human Behavior*, 61: 478-487.
- Vernon, L., Barber, B. & Modecki, K. (2015). "Adolescent problematic social networking and school experiences: The mediating effects of sleep disruptions and sleep quality". *Cyberpsychology, behavior, and social networking*, 18(7): 386-392.
- Wang, Pengcheng. (2018). "Social networking sites addiction and adolescent depression: A moderated mediation model of rumination and self-esteem." *Personality and Individual Differences*, 127: 162-167.
- Woods, Heather C. (2016). "#Sleepyteens: Social media use in adolescence is associated with poor sleep quality, anxiety, depression and low self-esteem." *Journal of Adolescence*. Vol 51: 41-49.

.-.-.-.