Social media, social comparison, and its impact on mental health and well-being of McMaster University undergraduate students

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Abstract

While social media use in Canada continues to rapidly increase, university students are also experiencing unprecedented levels of mental health concerns and crises (Primack et al., 2017; Wiens et al., 2020). Given these trends, it has become increasingly important to examine the ways in which social media use may or may not play a role in mental health outcomes. Due to the multifaceted nature of social media use, our research sought to specifically examine social media use though the lens of social comparison. The present research questions aimed to investigate the relationship between social media, social comparison, and McMaster University undergraduate mental health outcomes. Utilizing a mixed methods approach, our team created and distributed an online anonymous survey which included both quantitative and qualitative questions. This survey accumulated 14 complete responses, in which statistical software was used for quantitative analysis, and thematic analysis used for the qualitative responses. Our research found that while participants did report engaging in social comparison, when focusing specifically on mental health outcomes after social media use, participants reported positive, rather than negative, experiences and outcomes. The ever increasing and multifaceted nature of social media use among younger generations calls for the continued presence of critical research regarding this topic. The present research has made a critical contribution to the existing literature on this subject by discovering a caveat to much of the existing findings. That is, that social media use, even when instigating social comparison, may not affect one's mental health or can even produce positive mental health outcomes for users.

Introduction

With approximately one in five university and college students experiencing mental health issues, Canada is currently facing an unprecedented mental health crisis among its postsecondary student population (Wiens et al., 2020). This crisis is founded upon two components — high levels of mental health concerns among university students, and rising enrollment levels at universities in Canada (Wiens et al., 2020).

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Interestingly, at the same time, society is facing a continuing rise in the use of social media (SM) platforms (Primack et al., 2017). While SM is conceptualized as having a variety of beneficial impacts on everyday life, in some cases the impacts may be negative (Primack, et al., 2017). A few of these adverse effects in relation to mental health are increased anxiety, depression, loneliness, dissatisfaction with body image, fear of missing out, thoughts of self-harm or suicide, and decreased life satisfaction (Sadagheyani & Tatari, 2021). While these two components may not be intrinsically linked, they may be able to provide insight into one another, as well as the larger issue at hand.

Our research sought to investigate the relationship between SM, social comparison, and the mental health of McMaster University undergraduate students. Variables such as the type of SM platform used, the type of content being consumed, and the vulnerabilities of the individuals accessing SM were investigated. By doing so, our research aimed at contributing to the existing literature on SM and the mental health of university students. Further, we hoped to advance the literature on this issue by investigating the relationship through the specific lens of social comparison.

This paper will first outline the theories relevant to our area of inquiry and contextualize and operationalize those theories within our specific research. We will then state the problem and purpose of our research, as well as the specific questions our research attempted to answer. Next, we will provide a thematically organized and detailed review of the current literature. Following the literature review, the methodology of our research will be outlined and a list of the topics our paper will discuss will be provided. The paper will continue with a discussion of the limitations of our study and a section on the significant insights our research is able to provide. A conclusion and summary section will follow.

Theory

Social comparison theory was used as the dominant theoretical framework for our research, contextualizing student social media use and mental health outcomes. Social comparison theory was first proposed by Leon Festinger in 1954, who sought to understand the process by which people compare themselves as a means of evaluating themselves. Festinger (1954) argued that individuals are innately driven to evaluate themselves, specifically on their opinions and abilities. Additionally, Festinger (1954) theorized that when people are lacking in objective data on which to base their evaluations, they evaluate their opinions and abilities by comparing them to those of others. Individuals are more likely to make lateral comparisons, meaning that they tend to compare themselves to those who share similar opinions or abilities, as this increases the accuracy of one's self-evaluation (Festinger, 1954). Festinger (1954) also suggested, however, that individuals in Western societies are more inclined to make upward comparisons; they compare themselves with those whose abilities are slightly better than theirs, due to a continuous desire to improve themselves. However, the tendency to engage in upward social comparison is not relevant in regard to evaluating one's opinions (Festinger, 1954).

Throughout the late 19th century, researchers began to hypothesize that social comparison might influence self-esteem (Dijkstra et al., 2008). When individuals compare themselves to those they consider worse off, this serves to improve their

self-esteem, especially in times of stress. This type of comparison is referred to as a downward social comparison (Buunk et al., 1990). As such, modern scholars agree that individuals do not always strive for accurate self-appraisals and may in fact be more biased when evaluating themselves (Dijkstra et al., 2008). Additionally, there are a variety of possible motives for comparing oneself to others beyond the mere desire to evaluate and improve oneself (Dijkstra et al., 2008). Currently, social comparison theory can be used to examine the processes by which individuals compare their own characteristics to those of others (Dijkstra et al., 2008).

Social comparison theory is relevant to the current study as it was used to frame, ground, and conceptualize our research. This theory has been utilized in many studies related to SM use because people often engage in social comparison when using SM. A recent study regarding social comparison and SM use amongst college students found that most of the participants made at least one social comparison while using SM each day during the study (Andrade et al., 2023). Moreover, individuals who tend to make more social comparisons are more likely to experience negative effects of SM than individuals who make less comparisons (Andrade et al., 2023). Our study aimed to determine what types of social comparisons undergraduate students make, and how these comparisons can subsequently influence student mental health and well-being. For example, how likely are students to make upward comparisons versus downward comparisons, and how do these comparisons affect students' mental health? Also, what types of people and SM platforms are associated with higher levels of social comparison and problematic social media use (PSMU)?

An individual's well-being may be impacted in various ways when using SM, depending on the nature and frequency of the social comparisons that are being made. Prior research has confirmed that engaging in social comparison can worsen one's self-esteem, which can have a multitude of mental health implications, including higher rates of anxiety (Anto et al., 2023). Upward comparisons often have the most detrimental impact on well-being, though this is not always the case (Andrade et al., 2023). Upward comparisons can negatively influence well-being when an individual compares themselves to others that they deem to be more successful in any given domain. However, focusing on what similarities exist between someone and the object of their upward comparison can foster more positive and hopeful feelings in that individual (Andrade et al., 2023).

The nature and frequency of social comparisons could be influenced by several factors. That is, different populations may be inclined to engage in different comparisons. For example, a recent study found that students are more likely to make comparisons regarding lifestyle and body image (Anto et al., 2023). Bodily comparisons can impact student's self-evaluations which oftentimes leads to more feelings of anxiety (Anto et al., 2023). This finding exemplifies how social comparison theory can be used to understand the relationship between SM use and student mental health. Moreover, popular SM platforms, such as Instagram, tend to be highly image-based which can exacerbate the social comparisons being made. As well, it can amplify any of the related negative effects that may emerge from these comparisons (Anto et al., 2023). Therefore, it was beneficial that our group examined the SM habits of students, as well as social comparison trends.

To better examine and understand student SM habits and trends, our group considered Katz, Blumler, and Gurevutich's (1973) uses and gratifications theory. This theory explains the ways that people utilize media and communication outlets "to satisfy their needs and to achieve their goals" (Katz, Blumler, & Gurevitch, 1973, p. 510). During the early development of this theory, academics had not come to a consensus as to exactly which needs and gratifications were being satisfied by media use (Katz et al., 1973). Katz and Blumler (1973) argued that different mediums of media influence audiences differently, and thus vary in their ability to satisfy different needs. It was also proposed that a variety of social factors create needs related to media consumption for members of society (Katz et al., 1973). In modern societies, the increasing frequency of SM use (Primack et al., 2017) may coincide with a broader impact on users. Additionally, the needs being fulfilled by SM may be greater or more complex than the needs which were fulfilled by past forms of media.

A recent study on the PSMU of students noted seven gratifications of SM use: maintaining relationships, socializing, presenting a more popular self, task management, passing time, entertainment, and educational purposes (Kircaburun et al., 2020). The results of this study suggested that certain uses and gratifications are associated with PSMU (Kircaburun et al., 2020), which has implications for our current study. Uses and gratifications theory is relevant to our research, as it helped us to understand and determine why SM use can become problematic. As well, it aided in explaining why users continue to engage despite the prevalence of negative effects (Primack et al., 2017).

Primarily, we used Festinger (1954)'s theory of social comparison to contextualize our research. Since this theory has been expanded upon since its initial development, we made certain to consider modern understandings and additions that have been done. As well, we considered the uses and gratifications theory when analyzing student SM use. The use of this theory helped to provide insights into the development of media throughout recent decades.

Statement of the Problem and Purpose of the Research

Social media is a relatively recent phenomenon, and while there are mixed opinions on the impact that it has on individuals' well-being, SM use continues to be frequently utilized amongst young adults (Primack et al., 2017). The current study aimed to further the research on SM use amongst undergraduate students by examining habits and trends in SM usage and the consequential effects. We examined how SM use, social comparison, and mental health may be associated through an engagement with social comparison theory. We hoped to discover the ways in which SM could impact the mental health of undergraduate students at McMaster University. Determining how SM use could negatively influence mental health and wellbeing is critical because we feel that understanding the causes of the issue is pertinent to help resolve it.

Research Questions and Justification

The questions we attempted to answer in our study were constructed with the intention of generating a well-informed observation of the usage of SM and how it may induce social comparison. Our research questions were made to be wide-ranging to obtain as much knowledge as possible on how we can solve the issue of harmful social

comparison. The main questions we asked focused on two main themes, the first of which is the students' experiences and tendencies surrounding social comparison. Through this lens, we asked the following questions: Is social comparison a harmful factor of social media usage among students? How likely are students to make upward comparisons versus downward comparisons? How do these comparisons affect students' mental health? What aspects of their lives are students mostly comparing (Body image, academic standing, economic status, etc...)? How might the amount of time that a student spends using social networking sites influence their likelihood in engaging in social comparison? We selected these questions because we believed that they would provide some insight into the patterns between types of social comparison and the toll that may or may not have on the mental health of students. We felt that by answering the questions above, we would be able to investigate if a problem exists among McMaster students, and if so, how we may be able to implement strategies to alleviate it.

The second theme we explored is the connection between certain SM platforms and how they may incite social comparison. Following this theme, we aimed to answer the following questions: What types of social media platforms are associated with higher levels of social comparison and problematic social media use? How does the frequency of social media use precipitate social comparison? How do students feel after using social networking sites? Which social media sites evoke the most downward social comparisons? The most upward social comparisons? These questions helped us to find which of the social networking sites prove themselves to be the most detrimental to mental health. Using this knowledge, we hope to able to introduce strategies that decrease problematic use, and in turn, may help to eliminate the negative impacts that social comparison leads to. There is a seemingly growing presence of SM in modern Western society (Primack et al., 2017). Because of this, determining how problematic social networking use occurs and persists may help to innovate better habits and behaviours when navigating the internet.

Throughout the research process, the questions above were modified and augmented, as some questions became irrelevant, and new inquiries emerged. However, the original questions provided our study with a foundation to build our research upon, as well as helping us gain insight into the three following areas. Primarily, we hoped to investigate how social comparison may impact students' mental health and wellbeing. Next, we strove to identify how SM can be used in a productive way that could minimize harmful social comparisons. Finally, we wanted to determine which social networking sites produce the most detrimental comparison behaviours.

Literature Review

The following literature review contains information from a number of studies that contain themes relating to our research project. The topics that we have chosen for our review are social comparison, SM use, and the impacts that SM use can have on mental health. The literature provides deeper insights into the three main themes, which helped inform our study, and allowed for a more well-rounded research project. For instance, the research below discusses the various types and domains of social comparison, such as downward, upward, lateral, physical, ability, and opinion. Further, the literature provides insight on the various types of SM use, such as active, passive,

and problematic. Finally, the impacts of SM on mental health have been analyzed through the domains of mental illness, body image and expectations of beauty, and well-being. The literature provides further insights into the main themes mentioned above, which helped to advise the course of our study, and allowed for a more well-rounded research project.

Types of Social Media Use

The quality of an individual's SM use can significantly influence how they are impacted by SM. There are a variety of terms used to differentiate between different types of SM use. Many researchers categorize social media use as either active or passive. More recently, PSMU has also been put forth as a category of social media use.

Active Versus Passive

Research on the types of social media use is still evolving, and in many ways is still quite limited (Thorisdottir et al., 2019). The research that has been published indicates that there is a correlation between types of SM use and mental health outcomes. Active SM use can be understood as generating personal content, engaging in direct exchanges (i.e., chatting or commenting back and forth with others) and regular status updates (Pang, 2021; Thorisdottir et al., 2019). Opposingly, Passive SM use involves consuming content without direct communication or interactions with others (i.e., browsing, scrolling, reposting) (Pang, 2021; Thorisdottir et al., 2019).

One study by Pang (2021) surveyed 318 Chinese university students ages 18 to 29 about their use of a popular social networking site among Chinese populations titled *WeChat*. The researchers sought to investigate the correlation between how social networking sites are used and the social and psychological consequences that may follow. In this study, passive use of WeChat was found to positively predict "upward social comparison", which in turn was linked with elevated levels of "depressive mood and fear of missing out" (FOMO) (Pang, 2021, p.7). The author did not indicate any significant correlations between active WeChat use and negative social and psychological outcomes (Pang, 2021).

Another study conducted by Thorisdottir et al., (2019) used results from a national survey of 10,563 Icelandic adolescents ages 14-16. The researchers found that time spent on SM was the most significant factor that impacted one's symptoms of depression and anxiety. However, when time was controlled for, the passive use of SM related to greater depression and anxiety symptoms in both girls and boys, while active use contributed to fewer of these symptoms (Thorisdottir et al., 2019). Both of these studies are relevant to our current research as they demonstrate that the way SM is used may influence social comparison tendencies and mental health outcomes of users.

Problematic Social Media Use

Many researchers have also defined certain modes of SM use as problematic. Kircaburun et al., (2020) found that differences in personality, usage, and levels of gratification derived from SM use may lead to the development of PSMU in certain individuals. According to these researchers, PSMU shares similarities with behavioral and chemical addictions. Individuals with PSMU exhibit compulsive behavior, along with symptoms of addiction such as mood swings, withdrawal, and relapse (Kircaburun et

al., 2020). PSMU is frequent among university students, and multiple studies argue that women experience PSMU more so than men (Kircaburun et al., 2020). Certain uses and gratifications associated with SM may lead to PSMU, and using SM to pass time may be one of the largest predictors of PSMU, followed by portraying oneself in a positive light (Kircaburun et al., 2020).

Further, Banyai et al., (2017) examined the prevalence of PSMU with a sample of 16-year-old adolescents living in Hungary. The results were similar to the data from the study by Kircaburun et al., (2020) showing that adolescents who used SM in their daily lives were at a higher risk of experiencing withdrawal symptoms, low self-esteem, and being diagnosed with depression (Banyai et al., 2017). In addition, Kircaburun et al., (2020) argued that women are at greater risk of experiencing the harmful symptoms that can arise due to overuse of SM. Similarly, as found by Banyai et al., (2017) females using SM for over thirty hours per week have decreased self-esteem and have more severe symptoms of depression than males. Moreover, this study critiqued previous research on the topic of PSMU, arguing that the data has depicted an over-representation of the female population (Banyai et al., 2017).

Lastly, Hou et al., (2019) examined how SM addiction is related to college students' mental health and academic performance. They found that individuals with SM addiction are often severely concerned with media presence and have the uncontrollable urge to constantly log onto SM platforms (Hou et al., 2019). The authors noted that individuals with SM addiction experience symptoms that affect their mood, cognition, physical and emotional state, as well as interpersonal and psyche behavior (Hou et al., 2019). Their results differed from Kircaburun et al., (2020) and Banyai et al., (2017) as they not only aimed to address how SM use can impact mental health, but also academic performance. In doing so, they found that not only did SM addiction negatively affect mental health, but also poorly affected academic performance (Hou et al., 2019). Interestingly, Kircaburun et al., (2020) and Banyai et al., (2017) found that excessive use of SM is associated with lower levels of self-esteem. However, Hou et al., (2019) found that although SM appears to be related to lower self-esteem, they did not find a significant correlation as previous research has suggested.

Impacts of Social Media on Mental Health

Many previous studies have revealed a strong relationship between SM use and anxiety in adolescents (Andrade et al., 2023). While PSMU is, unsurprisingly, linked to impaired psychological well-being (Kircaburun et al., 2020), it is not the sole explanation for the relationship between social media and anxiety in young people. Another explanation is that SM use results in behaviors which worsen symptoms of anxiety and other mental health disorders (Anto et al., 2023). For example, higher levels of SM use could contribute to impaired sleep and an increase in sedentary practices, which can ultimately cause an individual to experience worsened mental health or well-being (Anto et al., 2023). Additionally, an individual’s anxiety levels may be influenced by a variety of other “metrics of social media activity”, like the number of social media accounts they use or the frequency at which they check these accounts (Anto et al., 2023, pg.2). Moreover, the nature of each SM platform could influence how users engage with the platforms (Andrade et al., 2023), thereby impacting the potential influences each SM platform may have on student mental health.

Mental Illness

Another mode by which SM can impact users' mental health is through the social comparisons made by users themselves. In their recent study on SM use and anxiety, Anto et al., (2023) found that participants' anxiety was increased through several factors, and they noted that comparison was one of the major contributors to anxiety in their participants. Upward comparisons often have the worst impact on well-being because these comparisons are associated with "more negative self-judgments, lower self-esteem, and the presence of disordered eating behaviors" (Andrade et al., 2023, pg.2). When individuals make an upward comparison that subsequently lowers their self-esteem, this often leads to increased anxiety (Anto et al., 2023).

Considering the nature of popular SM platforms was also important for our research purposes. The image-based nature of many popular SM platforms like Instagram and Snapchat may be an important factor when considering the impact of SM on student mental health. These visual platforms increase the likelihood that students will make upward social comparisons, especially in the domains of performance and physical appearance (Andrade et al., 2023). What's more, researchers have already found associations between PSMU and the use of Instagram and Snapchat. (Kircaburun et al., 2020).

However, it should be acknowledged that studies have also found evidence that SM use can be beneficial to an individual's mental health and well-being in certain cases. SM can decrease anxiety as it can provide individuals with positive experiences, social connectivity, and the opportunity to temporarily "escape" life stressors or mental health issues (Anto et al., 2023).

Body Image and Expectations of Beauty

Body image and expectations are reflected in society's constructs of ideal body type and what is considered 'beautiful' (Jiotsa et al., 2021). These conceptions are created through socialization and are therefore learned from others (Jiotsa et al., 2021). The ever-changing definition of beauty can have serious consequences when it comes to an individual's physical, emotional, and psychological well-being. The role of SM has been empirically proven to feed into body image issues along with body dissatisfaction (Jiotsa et al., 2021).

According to Jiotsa et al., (2021), SM can play a role in how individuals perceive their bodies. Some people are vulnerable and will go to extreme lengths to attain an ideal body, having internalized this body image as 'beautiful'. As a result, some individuals develop eating disorders or use cosmetic surgeries to address their psychological distress (Jiotsa et al., 2021). The study by Jiotsa et al., (2021) sampled young adults who were 15 to 35 years of age, and who used SM often. Researchers measured how often participants posted on their SM, how they felt when looking at other users' posts, and sought to examine any eating disorders. Results indicated that participants who compared themselves to others had a higher levels of personal body image dissatisfaction, and "a higher drive for thinness" (Jiotsa et al., 2021, p. 10). Individuals who are not satisfied with their body have increased levels of anxiety and shame, which can lead to unhealthy coping responses (Jiotsa et al., 2021). Unfortunately, the image-based nature of many contemporary SM platforms makes

them rich environments for users to make comparisons, particularly regarding their physical appearance (Andrade et al., 2023). What's more, Andrade and colleagues (2023) noted that certain content, such as fitness or beauty content, is appearance oriented and may thus facilitate users in making upwards social comparisons specifically.

Well Being

Current empirical evidence notes that increased screen time can lead to negative psychological well-being because of upward social comparisons (Pittman & Reich 2016). As a result, self-esteem can be easily lowered if images seen on SM trigger a negative response (Vogel et al., 2015).

Pittman & Reich (2016) suggest that increased SM usage can be associated with loneliness. SM allows users to interact and construct an identity to stay connected amongst others, thus a higher frequency of use may occur as a result. However, this increased screen time does not always equate to greater cohesiveness (Best et al., 2014). Research indicates that increased screen time can be detrimental to some users as it imposes risks to an individual's physical, psychological, social, and mental well-being (Pittman & Reich 2016). In a study conducted by Pittman and Reich (2016), a sample of 274 undergraduates were asked to rate their preferences, happiness, and loneliness on SM platforms they regularly used. Results indicated that image-based platforms affected users more than text-based platforms (Pittman & Reich 2016). This emphasizes that photos and videos employ stronger emotions and feelings of communication and may therefore affect the psychological well-being of individuals more.

Overall, research highlights how SM sources, such as image/video-based platforms (i.e. *Tik Tok*, *Instagram*) can give a sense of immediacy and intimacy amongst users (Pittman & Reich 2016). However, the same effect is seen less prevalent in text-based outlets (i.e., *Twitter*). Thus, the influence and effects from image-based platforms create a negative psychological state for some users.

Similarly, Vogel et al., (2014) examined the associations between SM, social comparison, and self-esteem. As mentioned earlier, studying SM use can provide insight into the types of habits formed when using these platforms. Simply put, self-esteem can include self-evaluations and self-perceptions (Vogel et al., 2014), which can relate to one's tendency to make upward or downward social comparisons. The study examined 145 undergraduates and attempted to measure whether increased Facebook use decreased their life satisfaction. The results indicated that a higher frequency of Facebook use led to poorer self-esteem (Vogel et al., 2014).

A second study involved participants looking at two bogus SM profiles, one being for someone who was perceived to be successful and attractive and one for someone who was deemed to be unsuccessful and unattractive (Vogel et al., 2014). Results indicated that some individuals had lower self-esteem following being exposed to the fictitious successful and attractive individual.

Types of Social Comparison

Depending on the way that an individual uses social comparison, the act itself can be typified in three different ways (Kong et al., 2021). As mentioned earlier, the

three types have been coined as upward, downward, and lateral. In the subsections below, the focus will be primarily on upward and downward, outlining how these behaviours manifest and when they can become problematic.

Upward

Due to the constant availability of information and stimuli that can be found on SM, social comparison is almost an inevitable component of the experience (Kong et al., 2021). Because of the generally positive nature of the posts that individuals tend to broadcast on social networking sites, users tend to engage more in upward social comparisons (Park et al., 2021). While this may result in individuals feeling good about themselves, large amounts of upward social comparisons can become harmful to their mental health and overall well-being (Schmuck et al., 2019). Schmuck et al., (2019) sought to find a connection between four factors: SM use, upward social comparison, self-esteem, and mental well-being. A link between these elements had not yet been researched at this level of specificity to date. What they found was that when an individual engages in upward social comparison on SM sites, this behaviour tends to have negative influences on their self-esteem (Schmuck, et al., 2019).

While the research above provides an important perspective regarding the impact of social comparison on self-esteem and well-being, the following study conducted by Park et al., (2021) examines the possible link between upward social comparison and the emotions that may arise as a result. Further, Park et al., (2021) wanted to explore what kinds of behaviours individuals engage in when confronted with those complicated emotions. It seems that many studies primarily focus on the psychological implications of upward social comparison, therefore the researchers in the present study wanted to analyze how this kind of comparison breeds certain behaviours (Park et al., 2021). The behaviours range from posting negative or positive comments on SM to discontinuing use all together. They found that upward social comparison did in fact play an important role in determining what influences individuals to engage in these behaviours (Park et al., 2021). This is due in part to the fact that upward social comparison is a causal component in the development of upward contrastive emotions, which the researchers found was a pivotal marker for the behaviours (Park et al., 2021).

Based on the findings from Schmuck et al., (2019) and Park et al., (2021), we conducted our research with well-rounded knowledge surrounding the impacts that upward social comparison can have on individuals while using SM. We understood the potential effects on self-esteem and well-being, as well as on emotions and behaviours. Noting the limitations that these studies possessed, we foresaw these challenges and avoided them to the best of our abilities.

Downward

Fuhr et al., (2014) sought to investigate the differences between how each style of comparison would affect an individual's self-esteem and mood. In addition, they examined how social comparison would impact affective disorders. A total of 132 patients, all with a clinically diagnosed disorder, were recruited for the study. Participants were randomly assigned to complete a computer-based brainstorming task that would induce either upward or downward comparison (Fuhr et al., 2014). Through the assessments of the participants moods the researchers found that, unlike the

negative effects of upward comparison on one's mood and self-esteem, downward comparison brought a boost in positive affect (Fuhr et al., 2014). This finding is consistent with prior studies on downward comparison.

Research by Gentile et al., (2019) attempted to further the knowledge surrounding the effects of downward comparison on one's affect. The researchers recruited 496 undergraduate psychology students to participate in their study. Participants were divided into one of four conditions: loving-kindness, interconnectedness, downward comparison, and control (Gentile et al., 2019). The downward comparison condition was asked to walk around a hall full of people and compare themselves in aspects that they were better at (Gentile et al., 2019). After, they were asked to write about their experience and complete a survey (Gentile et al., 2019). However, contrary to the researcher's hypothesis, the results of the study found that downward comparison did not lead to any beneficial effects on mood when compared to the control condition (Gentile et al., 2019). These conflicting findings suggest that further research on the effects of downward comparison is needed to better our understanding of downward social comparison.

Domains of Social Comparison

Social comparisons can be made in several different domains. In his classic social comparison theory, Festinger (1954) only speaks to two domains: opinion and ability. When considering ability, it is important to consider the range of abilities which an individual could be comparing, such as academic, athletic, or artistic. Researchers today acknowledge that comparisons are made across a much broader range of domains than originally theorized by Festinger (1954), such as physical appearance or lifestyle. The image-based nature of modern SM platforms may, as previously mentioned, make these platforms especially rich environments for individuals to make upward comparisons, especially pertaining to performance and physical appearance (Andrade et al., 2023). Post-secondary students may be most inclined towards making social comparisons in the domains of lifestyle, body image, and academic performance (Anto et al., 2023).

Physical

Esiyok & Turanci (2017), surveyed 381 university students to understand the relationship between media and physical appearance comparisons or body ideals. Their research sought to answer questions such as the following, "What is the relationship between having negative attitudes towards one's own body and the desire to look like people in the media among males and females?" and, "What is the relationship between having negative attitudes towards one's own body and comparing it with the people in the media among males and females?" (Esiyok & Turanci, 2017). The results of this study found that if individuals developed negative attitudes about their bodies, both males and females equally attempted to look like the people they saw in the media (Esiyok & Turanci, 2017, p. 3). Significantly, having negative attitudes about one's body was positively correlated with comparing bodies with those in the media (Esiyok & Turanci, 2017). Furthermore, the research found a significant negative correlation between self-esteem and bodily comparison with those in the media, suggesting that as

self-esteem decreases the tendency to compare or desire to look like those in the media increases (Esiyok & Turanci, 2017).

Another study by Scully et al., (2023) administered self-report measures to 210 female Irish students between the ages of 12 and 17 on topics such as “online appearance related activity, social comparisons to female target groups, internalization of the thin idea, body dissatisfaction, and self-esteem.” (p. 31) The results of these self-reported measures found “a positive association between body dissatisfaction and adolescents frequency and favourability of comparisons to [both] proximal and distal female targets on Facebook” (Scully et al., 2023, p. 35). The comparisons the participants made were all found to be upward, with the participants finding their body least favourable (Scully et al., 2023). Participants found their bodies least favourable in the face of comparison to “celebrities, followed by distal peers, close friends, and finally, family” (Scully et al., 2023, p. 35).

These findings are relevant to the current study as they highlight a type of comparison individuals are likely to make when consuming media content. The significant relationships found in this study display the importance of investigating university students’ tendencies to socially compare themselves with others regarding body image.

Ability & Opinion

As mentioned above, ability and opinion are the two most common domains of social comparison which have been studied by researchers for various purposes and with differing outcomes. Comparison of ability and opinion appear to be most often studied together to observe their similarities and differences. Lewin et al., (2022) examined the different domains of social comparison that may be associated with PSMU on five platforms: Facebook, Instagram, Snapchat, TikTok, and Twitter. The authors note that research involving more than one social networking site *and* PSMU are few and far between, indicating that most of the research exists on one or the other. Lewin et al., (2022) found that the higher an individual’s tendency to compare themselves to others, in terms of ability on SM, the more problematically they used the platforms. Interestingly, when an individual compared their opinions to others, the researchers found that they only used two out of the five platforms problematically (Lewin et al., 2022). The authors theorize that this may be due in part to the tendency to compare one’s abilities is greater than opinion and given the content that is advertised on most SM platforms, social comparison of ability would then result in more widespread PSMU (Lewin et al., 2022).

The study discussed above outlines how the different domains of social comparison can influence how an individual uses SM. However, Yang et al., (2018) sought to examine how the domains of social comparison on SM, when partnered with introspective processes (i.e., rumination and reflection), come together to impact identity distress. The researchers pointed out the differences between the two domains and how they typically present themselves. When engaging in comparison of ability, the individual views the other as an object that must be competed with and they reflect upon themselves to evaluate whether they are inferior or superior to the other (Yang et al., 2018). Contrarily, when the individual engages in comparison of opinion, the individual views the other as a source of information or may even look to this person for guidance

(Yang et al., 2018). It is important to distinguish between the two domains because they may result in more distinctive behaviours. The results of this study indicate that when partnered with rumination, comparison of ability resulted in increased identity distress for the participants. Opposingly, when combined with reflection, comparison of opinion did not result in an indication of identity distress (Yang et al., 2018).

The two studies above provide contrasts between behaviours of SM use and the domain of social comparison, as well as how the domain can impact identity construction when partnered with introspection. The findings provide us with a groundwork which proved to be of great use during our study. Most prominently during the data collection period of our project, when analyzing how participants use SM platforms, and in turn, how that makes them feel.

Limitations

The literature reviewed above provides strong insights into the various elements of our research— SM, social comparison, and potential impacts on mental health. While each of the reviewed studies and articles can in some way contribute and strengthen our understanding of the topic at hand, they are not without their limitations. Each paper examines a variety of limitations to their work, however, only those limitations relevant to the study at hand will be examined.

Firstly, much of the literature has poor generalizability to wider populations. Park et al., (2021) limited their sample to participants in the country of South Korea. Esiyok & Turanci (2017) only collected data from Turkish university students. Similarly, Samara et al., (2022) sampled only Australian university undergraduates, Gentile et al.'s (2019) participant were recruited from the same American university, and Pang (2021) limited their study to Chinese university students. Vogel et al., (2015) focused solely on a student population from an unidentified Midwestern university in the United States. Thorisdottir et al., (2019) limited their population to Icelandic adolescent population. Scully et al., (2023) restricted their population of interest to adolescent Irish girls. Finally, the participants in Lewin et al., (2022) were only those of an early-adult age. Thus, the narrow participant criterion of these studies limited the populations they can generalize their findings to. Our research is not able to avoid this limitation as we are only sampling McMaster undergraduate students over the age of 18. However, this limitation will be acknowledged in the designated section towards the end of the paper.

Another common limitation across literature was the limited analysis of the various types of SM platforms. Pang (2021) only produced hypotheses and results around the analysis of the WeChat platform. Similarly, Vogel et al., (2015) only produced findings around Facebook. Interestingly, Esiyok & Turanci (2017) focused on media—television, movies, magazines, and newspapers—more generally, in turn completely neglecting the fast-growing popularity of SM as the source of social comparisons. In only examining one media or platform type, these studies are narrowing the scope of their research and the relationships they may uncover. The current study will not be limited to one SM platform. As a result, we can build on the mentioned limitation by highlighting the differences in social comparison and mental health outcomes based on the type of SM platform being used by participants.

Methodology

To investigate the relationship between SM, social comparison, and their impact on undergraduate students' mental health, we chose a mixed method approach to data collection by utilizing both qualitative and quantitative survey questions. This selection aimed to safeguard participants' anonymity, considering our research delves into intimate details of their lives. The use of an online anonymous survey ensured the protection of participants' identities and enabled us to ask more personal questions without compromising confidentiality. This decision enables participants to feel comfortable responding freely and honestly. The research was approved by the McMaster Research Ethics Board (MREB#: 0327).

Sample Population and Recruitment

Our sample population was undergraduate McMaster students over the age of 18. The survey was hosted on LimeSurvey, and our goal was to have 80 participants complete it. To achieve this target, each member of our group reached out to various clubs and faculty leaders asking for their cooperation in sharing our letter of information (Appendix A) with their members.

Specifically, Maxima reached out to the Black Student's Association, McMaster Chinese Student's Association, Filipino McMaster Student Association, McMaster Afghan Students Association, and McMaster German Cultural Club. Rachel contacted Girl Up McMaster, Macswifties, MacCrafters, and the McMaster Sikh Students Association. Sarah reached out to the McMaster Academic Trivia Club, McMaster Sign Language Club, McMaster Geeks, McMaster Ukrainian Students Association, and McMaster Board Game Society. Zara contacted the McMaster Mindfulness Club, McMaster Book Club, and the Korean Culture and Language Club (KCLC). Christy connected with the Muslim Students' Association, Queer and Trans Colour Club (QTCC), McMaster Italian Cultural Club, and Middle Eastern Students Association. Lastly, Jessica reached out to the McMaster Bengali Student Association, McMaster Turkish Students Association (MTSA), McMaster French Club, and McMaster Indian Association.

We sent recruitment emails to the groups listed using a script (Appendix B). Within our recruitment emails three documents were attached: a letter of information (Appendix A), an email recruitment script for participants to be used by the holder of the participants contact information (Appendix C), and a poster containing all the information on how to access the survey (Appendix D).

Due to a conflict of interest, Sarah, who was a teaching assistant for SOCPSY 1Z03 and a member of Macswifties, did not contact either group to avoid any sense of obligation among potential participants to engage in our research. Furthermore, to prevent any unintentional conflicts of interest, we refrained from recruiting through departments, faculty, program offices, or personal social media channels. All communications with potential participants were conducted through third parties, using posts that contained our survey information.

The sampling methods we utilized were convenience sampling and snowball sampling. For practicality and ethicality, our participant recruitment took place within McMaster University. To ensure straightforward and accessible engagement with a wide range of participants, we selected various clubs within McMaster that varied demographically. Participants encountered our recruitment efforts through posters

placed in the student center, libraries, and other buildings around campus which included tear-off tabs with the survey QR code (Appendix E). They could also discover our survey through electronic recruitment posters (Appendix D), shared by clubs or societies on their SM platforms, providing an electronic link to the survey. Finally, we anticipated that participants who completed our survey would share it with their friends, thus helping to enlarge our study's pool of participants.

Procedure

When students decided to complete the survey, they would click on a link that would take them directly to the study's consent page. Here, they would come across the letter of information which outlined all the details of the study including any risks associated with participation. This page also included support resources and poster session information. At the end of this first page of the survey, participants were met with two options. If participants had read the page and clicked 'yes', they agreed and were giving their implied consent to participate and were taken directly into the study. Once they entered the study, they were asked to complete a 16-question survey, with 5 demographic questions and 11 questions related to their personal SM usage and social comparison tendencies (Appendix F). The questions were designed to uncover how undergraduate students engage with SM, how they compared themselves when using SM, and the emotions elicited during and after SM use. If they selected 'no', they did not consent to participate in research and would be taken to the end page where they were thanked for their time and given information on the poster session. If participants choose to complete the survey, it was estimated to take about 10-15 minutes to complete. The participants were encouraged to choose a private location to complete the survey, so long as they had access to devices with stable internet connection.

On November 15, 2023, we launched our survey and began participant recruitment, followed closely by the dispatch of recruitment emails. In early January, we received approval for physical posters, which were then displayed on approved bulletins to attract passing students to complete our study. The survey concluded on February 16th, and we promptly initiated the data analysis phase. The data was stored on the LimeSurvey platform as it ensured that the data was housed on a secure platform with password protection. When retrieving the data from LimeSurvey, the file was also protected with a password on a secure laptop. Only the members affiliated with our research had access to this confidential data. The data will be deleted no later than April 30th, 2024, or once Dr. Clancy has advised us that the marking has been completed and the data can be deleted.

Ethical Considerations and Challenges

Our research survey carries two potential risks: psychological and social, both of which were no greater than those in everyday life. The psychological risks pertain to the possibility of participants feeling embarrassed, uncomfortable, worried, or upset due to the nature of the questions being asked. On the other hand, social risks encompass situations where the survey is completed in a public setting, potentially exposing participants' responses, and compromising their privacy. Additionally, another social risk exists if participants engage with social media posts related to the research. When they

like or comment on a post related to the research, their identity could be known and that may have social or psychological risks and consequences for the individual.

To mitigate the psychological risk, we used an online anonymous survey. Additionally, our recruitment was done through third-party channels to ensure that there was no conflict of interest. Furthermore, we also have support resources on the letter of information as well as the end page for those who might have felt uncomfortable after the survey. Participants were also free to leave the survey at any time if they did not feel comfortable, up until the point of submitting the survey. After this point, the data could not be deleted due to the anonymous nature of the survey. To mitigate the social risks, we kindly asked participants to complete the survey in a private location and to refrain from responding, posting, or liking anything regarding the survey to keep their privacy and anonymity intact.

Throughout our research, we encountered several challenges, including gatekeeping, survey fatigue, and issues with generalizability. Gatekeeping refers to the difficulties we face in accessing specific research populations. During our recruitment process, our team struggled to reach certain demographics because group leaders either failed to respond or rejected our requests to share our research survey. This obstacle significantly limited the size as well as the diversity of our study. Survey fatigue also posed a significant challenge to our research. The length and content of the survey may have led some participants to experience fatigue, causing them to abandon the survey before completion. This issue limited the number of responses we could include in our data analysis. With gatekeeping and survey fatigue, another challenge our research faced was the generalizability of results. Due to the limited response and homogeneous participants, our findings lacked generalizability. This limitation of our sample may not represent broader populations or different demographic groups. Consequently, while our insights provided valuable initial understandings, they should be interpreted with caution and viewed as a stepping-stone for further, more diverse studies.

Data Analysis

Upon the completion of the data collection phase, our data analysis was conducted using Jamovi, an open-source statistical software. For the quantitative component of our study, data analysis was conducted using statistical software to perform a series of tests, including descriptive statistics, cross-tabulations, contingencies, chi-square test, and independent samples t-tests. This quantitative analysis allowed us to process the Likert scale questions. Descriptive statistics offered a preliminary understanding of the sample's demographics, SM usage patterns, and general attitudes. Cross-tabulations helped explore the relationships between variables, such as the correlation between S usage and mental health outcomes. T-tests provided insight into differences between groups, for example, comparing the mental health impacts of SM across different grade point average (GPA) ranges and years of study.

In analyzing the qualitative data, our study employed thematic analysis to identify patterns and insights from participants' open-ended responses. This process involves systematic coding of responses to identify key ideas and experiences related to SM use and social comparison. Through examination of these codes, broader themes were

identified and defined, such as positive, neutral, and negative emotional responses, as well as the variability of these emotions across different SM platforms.

Due Dates	Tasks
October 19, 2023	Submit Research Proposal
November 1, 2023	Revision to Research Proposal
November 11, 2023	Revision of Research Proposal sent to Dr. Clancy
November 12, 2023	Ethics Approval Received
November 15, 2023	Open Survey to Public
November 17, 2023	Overview of Research Project
November 22, 2023	Begin Participant Recruitment after ethics approval was received: Recruitment emails sent
January 10, 2024	Participant recruitment: Reminder recruitment emails sent
January 18, 2024	Participant recruitment: Physical posters posted
February 16, 2024	Survey closed to Public
End of February 2024	Select program and begin data analysis
March 3, 2024	Submit Draft Copy of Poster
March 4, 2024	Received Feedback on Draft Copy of Poster
March 6, 2024	Submitted final poster to Dr. Clancy and Jess
March 20, 2024	Poster Presentation
March 28, 2024	Final Thesis Paper Submitted

Quantitative Results

Demographics

Data collection occurred among a sample of 62 participants, of which 48 were removed for lack of adequate completion (all but one response never went beyond the consent page, and the one response that did, did not complete at least 75% of the survey). Thus, the total number of participants for this research was 14 McMaster undergraduate students (n=14). The mean age of our participants was 20.3 with a standard deviation of 1.27. Of the 14 participants, 2 were 18 (14.3%), 1 was 19 (7.1%), 4 were 20 (28.6%), 5 were 21 (35.7%), and 2 were 22 (14.3%). Most of the respondents were female, with 11 respondents identifying as such (84.6%); 1 identifying as gender queer (7.7%), 1 identifying as non-binary (7.7), and 1 missing response. Within our sample, 8 respondents identified as White or Caucasian (61.6%), 2 identified as

Chinese (15.4%), 1 identified as Asian (7.7%), 1 identified as a person of colour (7.7%), 1 as Pakistani (7.7%), and there was 1 missing response. The majority of our respondents were in year 4 with 6 participants selecting that response (42.9%); 2 were in year 1 (14.3%), 1 was in year 2 (7.1), and 5 were in year 3 (35.7%). Regarding faculty of study, 12 participants identified as belonging to the faculty of social sciences (85.7%), 1 to the faculty of science (7.1%), and 1 to the faculty of health science (7.1%). Lastly, most participants' GPA was within the A-range with 12 respondents selecting that option, and the remaining 2 participants were within the B-range (14.3%).

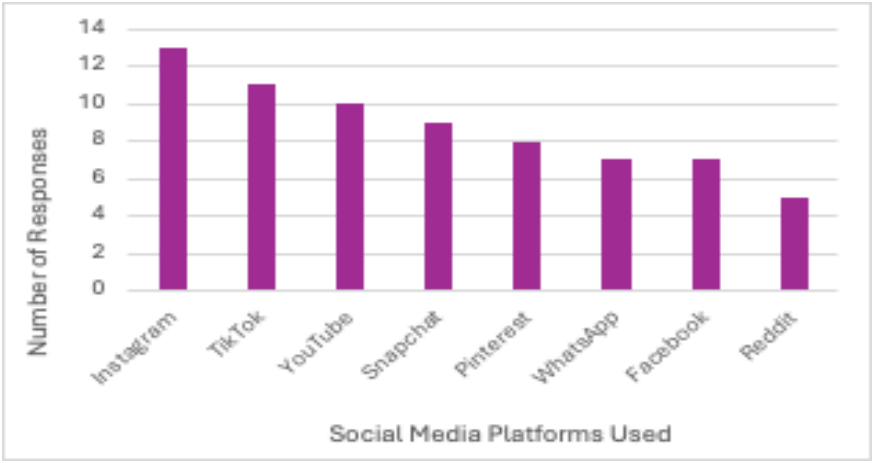
All demographic variables are reported within the results section. However, within our data analysis and tests, we did not consider how the participants program, gender identity, or ethnicity would impact social comparison, SM usage, and mental health as they lacked diversity and variability within their response choices. Thus, these factors will ultimately be excluded from the discussion section as well.

Social media: Frequencies and purpose for use

Participants were asked to identify, from a list of 16 options, which SM platforms they used most frequently in the last three months. As Figure 1 shows there were 8 platforms with the most responses of which Instagram was the overwhelmingly most popular platform with 13 participant selections (92.9%), 11 selected TikTok (78.6%), 10 selected YouTube (71.4%), 9 selected Snapchat (64.3%), 8 selected Pinterest (57.1%), WhatsApp and Facebook were both selected by 7 (50.0%), and 5 selected Reddit (35.7%). The least used SM platform was threads with 0 people selecting that platform.

Figure 1

Most Used Social Media Platforms by Participants

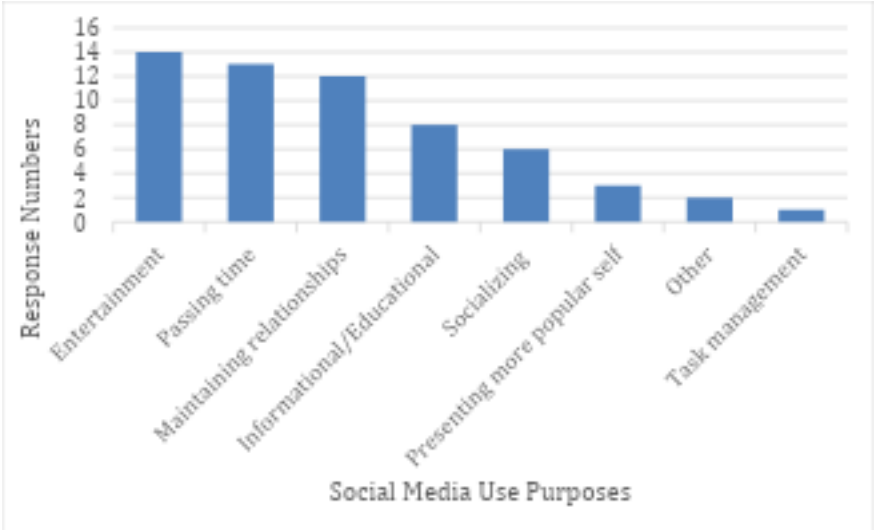


When focusing specifically on how year of study impacted the types of SM platforms used, our results indicated quite a few similarities between third- and fourth-year platform use. Both years used the 8 most used platforms identified within Figure 1. However, results also indicated some differences in third- and fourth-year platform use. Fourth year participants identified using LinkedIn (14.3%), WeChat (14.3%), VSCO (7.1%), and Discord (7.1%) whereas third years did not. Moreover, third years identified as using X (21.4%) and Tumblr (7.1%) whereas fourth year participants did not.

Participants were also asked, from a list of 8 options, what purposes they used SM for. There were 4 purposes which were overwhelmingly selected by participants. As reflected in Figure 2, 14 participants selected that they used social media for entertainment (100.0%), 13 selected passing time (92.9%), 12 selected maintaining relationships (85.7%), and 8 selected informational or educational purposes (57.1%). The least selected purposes for SM use were presenting a more popular self as selected by 3 participants (21.4%), and task management as selected by 1 participant (7.1%). Importantly, participants were given the option to fill out a "other" response option. One participant added that they use SM for "learning about new events [they could] attend" and another participant added the use of "engaging in spaces of [their] interest (fandoms)."

Figure 2

Purposes for using social media as identified by participants



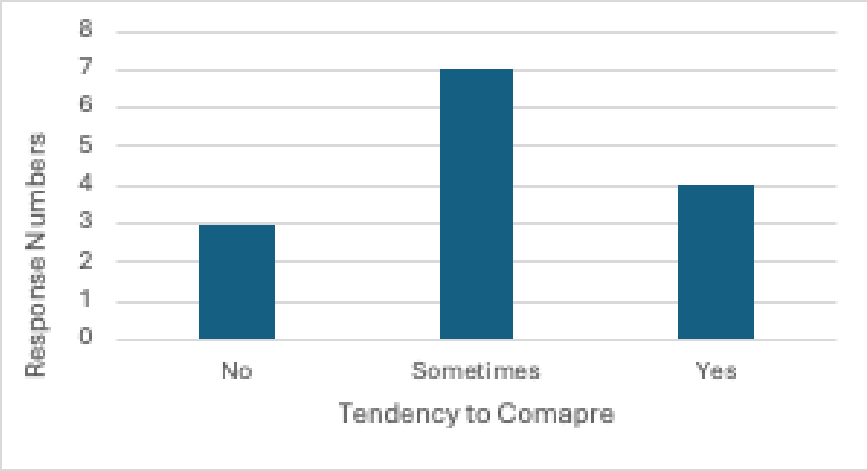
We investigated how GPA impacted participants' purpose for using SM. Among A-range participants, passing time and entertainment were the most identified purposes (both 85.7%). Presenting a more popular self (21.4%), and task management (7.1%) were the least identified purposes among A-range participants. For B-range participants, maintaining relationships and entertainment were the most selected (both 14.3%). Meeting new people, presenting more popular self, task management, and educational purposes were the least identified purposes among B-range participants with zero selections.

Year of study also impacted participants purpose for using SM. Third year participants used SM most for maintaining relationships, passing time, and entertainment (all 35.7%). Presenting a more popular self (14.3%), and task management (0.0%) were the least identified purposes among third year participants. Fourth year respondents used SM most for passing time and entertainment (both 42.9%). The least identified purposes among fourth year participants were task management and presenting a more popular self (both 7.1%).

Self-identified tendency to social compare

Participants were asked to self-identify if, when using SM, they tended to socially compare themselves to others. Figure 3 showcases participants responses to this question, with the majority—that being 7 participants—answering sometimes (50.0%), 4 selected yes (28.6%), and 3 selected no (21.4%).

Figure 3
Self-Identified Tendency to Socially Compare



Crosstabulations were used to examine how participants self-identified tendency to socially compare themselves differed depending on their GPA and year of study. Relating to year of study, crosstabulations revealed that third years self-identified a tendency to socially compare themselves the least (2 selected sometimes and 1 selected yes), and fourth years identified this tendency the most (3 selected sometimes, and 2 selected yes). However, as Figure 4 shows, chi-squared results revealed there was no significant difference between these years of study in their self-identified tendency to socially compare themselves x^2 (6) = 2.89, p = .822. Relating to GPA, crosstabulations revealed that A-range participants self-identified a tendency to socially compare themselves more (6 selected sometimes and 3 selected yes) than B-range participants (1 selected sometimes, and 1 selected yes). However, similar to year of study, Figure 5 shows that chi-squared results revealed there was no significant difference between the different grade ranges in their self-identified tendency to socially compare themselves x^2 (2) = .875, p = .646.

Figure 4
Year of Study Chi-Square Results

χ^2 Tests

	Value	df	p
χ^2	2.89	6	0.822
N	14		

Figure 5
Grade Range Chi-Square Results

χ^2 Tests

	Value	df	p
χ^2	0.875	2	0.646
N	14		

T-tests were run on the 5 most popular SM platforms among participants to investigate if using a particular SM platform impacted participants self-identified tendency to socially compare. There was no significant difference among those who used Instagram (*M* = 1.92, *SD* = .760) and those who did not (*M* = 2.00, *SD* = NaN) in terms of their tendency to socially compare *t*(12) = .0976, *p* = .924. Similarly, those who used TikTok (*M* = 1.91, *SD* = .701) did not significantly differ from non-users (*M* = 2.00, *SD* = 1.00) in their self-identified tendency to socially compare *t*(12) = .184, *p* = .857. YouTube users (*M* = 2.10, *SD* = .738) also did not significantly differ from non-users (*M* = 1.50, *SD* = .577) in their self-identified social comparison tendencies *t*(12) = -1.45, *p* = .174. Snapchat users (*M* = 1.89, *SD* = .782) also did not significantly differ from non-users (*M* = 2.00, *SD* = .707) in their self-identified social comparison tendencies *t*(12) = .263, *p* = .797. Lastly Pinterest users (*M* = 2.00, *SD* = .756) also did not significantly differ from non-users (*M* = 1.83, *SD* = .753) in their self-identified tendency to socially compare *t*(12) = -.409, *p* = .690.

Types of Comparisons

Participants were asked how often they compared themselves in the areas of body image, lifestyle, academics, and socioeconomic status (SES) based on a 5-point Likert scale with 1 being never and 5 being always. Figure 6 showcases participants identified types of social comparisons based on Likert scale answers. Descriptive data analysis and exploration revealed that participants most compared themselves on the aspect of body image (*M* = 3.36), then lifestyle (*M* = 3.07), then SES (*M* = 2.93), and least regarding academics (*M* = 2.50).

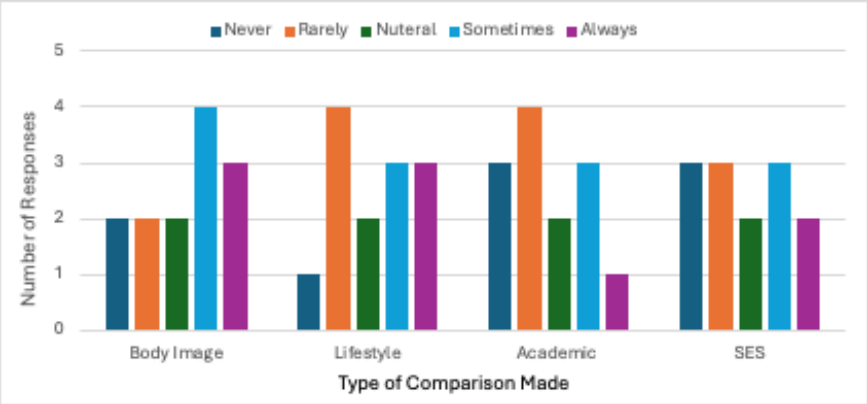
Further descriptive data analysis revealed how the aspects in which participants socially compare themselves differed based on GPA and year of study, and SM platform. When split by GPA data revealed that A-range participants compared themselves most regarding body image (*M* = 3.42) and least in academic aspects (*M* = 2.50). B-range participants compared themselves most regarding body image and lifestyle (both *M* = 3.00) and least regarding SES aspects (*M* = 2.00)

When split by year of study data revealed that level 1 participants compared themselves most regarding body image aspects (*M* = 4.50) and least regarding academic aspects (*M* = 2.50). Only one participant identified as a level 2 student and they answered ‘never’ to all aspects of social comparison. Level 3 participants most compared themselves regarding SES (*M* = 4.40) and least regarding academic aspects (*M* = 3.00). Level 4 participants most compared themselves regarding body image aspects (*M* = 3.50) and least regarding SES aspects (*M* = 1.83).

Lastly, when analyzing how users of our samples 3 most popular SM platforms differed, data revealed that those who used Instagram compared themselves most regarding body image (*M* = 3.54) and least on academic aspects (*M* = 2.62). Those who used TikTok most compared themselves on body image and SES aspects (both *M* = 3.45) and least regarding academic aspects (*M* = 2.82). While the participants who used YouTube most compared themselves on body image aspects (*M* = 3.10) and least regarding academic aspects (*M* = 2.20).

Figure 6

Identified types of social comparisons by Likert scale response choices



Body Image Comparisons

T-tests were conducted to determine how various groups differed in their body image comparisons and if these differences were significant. Regarding GPA, A-range participants did not significantly differ (M = 3.42, SD = 1.24) from B range students (M = 3.00, SD = 2.83) on body image comparisons $t(12) = .379$, $p = .712$. When analyzing year of study, results indicated that third year participants were not significantly higher in tendency to engage in body image comparisons (M = 3.20, SD = 1.789) than those in fourth year (M = 3.50, SD = .837), $t(9) = -.368$, $p = 721$.

T-tests were also conducted to determine if various SM platform users differed significantly from the non-users of those platforms. Regarding Instagram, users (M = 3.54, SD = 1.27) did not significantly differ from non-users (M= 1.00, SD = NaN) on body image comparisons $t(12) = -1.93$, $p = .077$. Regarding TikTok, users (M = 3.45, SD = 1.37) did not significantly differ from non-users (M = 3.00, SD = 1.73) on body image comparisons $t(12) = -.486$, $p = .636$. Regarding YouTube, users (M = 3.10, SD = 1.52) also did not significantly differ from non-users (M = 4.00, SD = .816) on body image comparisons $t(12) = 1.10$, $p = .292$. Figure 7 showcases these t-test results.

Figure 7

T-test results for body image comparisons relating to platform use

	Statistic	df	p
Instagram	-1.93	12	0.077
TikTok	-0.486	12	0.636
YouTube	1.10	12	0.292

Lifestyle Comparisons

When considering lifestyle comparisons, t-tests were conducted to determine how various groups differed in this kind of comparisons and if such differences were significant. Regarding GPA, A-range students did not significantly differ (M = 3.08, SD = 1.31) from B-range students (M = 3.00, SD = 2.83) on lifestyle comparisons $t(12) = .073$, $p = .943$. Regarding year of study, third year participants were not significantly higher in

tendency to engage in lifestyle comparisons (*M* = 3.20, *SD* = 1.304) than those in fourth year (*M* = 3.33, *SD* = 1.211), *t*(9) = -.176, *p* = .864.

Another set of *t*-tests determine if various SM platform users differed significantly from the non-users of that platform. Regarding Instagram, users (*M* = 3.23, *SD* = 1.36) did not significantly differ from non-users (*M* = 1.00, *SD* = NaN) on lifestyle comparisons *t*(12) = -1.58, *p* = .141. Regarding TikTok, users (*M* = 3.27, *SD* = 1.42) did not significantly differ from non-users (*M* = 2.33, *SD* = 1.53) on lifestyle comparisons *t*(12) = -1.00, *p* = .336. Regarding YouTube, users (*M* = 2.80, *SD* = 1.23) did not significantly differ from non-users (*M* = 3.75, *SD* = .946) on lifestyle comparisons *t*(12) = 1.13, *p* = .282. Figure 8 showcases these *t*-test results.

Figure 8

T-test results for lifestyle comparisons relating to platform use

	Statistic	df	p
Instagram	-1.58	12	0.141
TikTok	-1.00	12	0.336
YouTube	1.13	12	0.282

Academic Comparisons

T-tests were also conducted to determine how various groups differed in their academic comparisons and the significance of such differences. Regarding GPA, A-range students did not significantly differ (*M* = 2.50, *SD* = 1.31) from B-range students (*M* = 2.50, *SD* = 2.12) on academic comparisons *t*(12) = .000, *p* = 1.000. Regarding year of study, third year participants were not significantly higher in tendency to engage in academic comparisons (*M* = 3.00, *SD* = 1.581) than those in fourth year (*M* = 2.33, *SD* = 1.033), *t*(9) = .843, *p* = .421.

Regarding various SM platforms, *t*-tests were conducted to determine if users differed significantly from the non-users of the platforms. Regarding Instagram, users (*M* = 2.62, *SD* = 1.33) did not significantly differ from non-users (*M* = 1.00, *SD* = NaN) on academic comparisons *t*(12) = -1.17, *p* = .263. Regarding TikTok, users (*M* = 2.82, *SD* = 1.33) did not significantly differ from non-users (*M* = 1.33, *SD* = .577) on academic comparisons *t*(12) = -1.85, *p* = .090. Regarding YouTube, users (*M* = 2.20, *SD* = 1.14) did not significantly differ from non-users (*M* = 3.25, *SD* = 1.71) on academic comparisons *t*(12) = 1.36, *p* = .198. Figure 9 showcases these *t*-test results.

Figure 9

T-test results for academic comparisons relating to platform use

	Statistic	df	p
Instagram	-1.17	12	0.263
TikTok	-1.85	12	0.090

YouTube	1.36	12	0.198

Socioeconomic Status Comparisons

T-tests were also conducted to determine how various groups differed on their SES comparisons and the significance of such differences. Regarding GPA, A-range participants did not significantly differ (M = 3.08, SD = 1.44) from B range participants (M = 2.00, SD = 1.41) on SES comparisons $t(12) = .984$, $p = .344$. Regarding year of study, those in third year were significantly higher in tendency to engage in SES comparisons (M = 4.40, SD = .548) than those in fourth year (M = 1.83, SD = .753), $t(9) = 6.332$, p = <.001.

Lastly, t-tests were conducted to determine if various SM platform users differed significantly from the non-users of those platforms. Regarding Instagram, users (M = 3.08, SD = 1.38) did not significantly differ from non-users (M = 1.00, SD = NaN) on SES comparisons $t(12) = -1.45$, $p = .173$. Interestingly, TikTok users (M = 3.45, SD = 1.13) did significantly differ from non-users (M = 1.00, SD = 0.00) on SES comparisons $t(12) = -3.66$, $p = .003$. Regarding YouTube, users (M = 2.70, SD = 1.49) did not significantly differ from non-users (M = 3.50, SD = 1.29) on SES comparisons $t(12) = .935$, $p = .368$. Figure 10 showcases these t-test results.

Figure 10

T-test results for SES comparisons relating to platform use

	Statistic	df	p
Instagram	-1.45	12	0.173
TikTok	-3.66[a]	12	0.003
YouTube	0.935	12	0.368

Social Media Addiction

Participants were asked to answer the 6-item Bergen Social Media Addiction Scale (Andreassen, Torsheum, Brunborg & Pallesen, 2012). The mean scores for these items were calculated and used to run both t-tests and correlations for several variables. A correlation matrix determined the direction and significance of the correlations regarding SM addiction scores and the types of comparisons participants made. As Figure 11 showcases, results found that SM addiction was positively, but not significantly, correlated with body image comparison (r = 0.048, p = 0.871), lifestyle comparison (r = 0.522, p = 0.056), academic comparison (r = 0.519, p = 0.057), and SES related comparison (r= 0.243, p = 0.402).

Regarding GPA, t-test results indicated that A-range participants were not significantly higher (M = 2.96, SD = 1.07) than B-range participants (M = 2.50, SD = 0.236) on their SM addiction $t(12) = .58$, $p = .57$. Investigating year of study, t-test results indicated those in third year were not significantly higher in their SM addiction (M = 3.53, SD =.820) than those in fourth year (M = 2.69, SD = 1.113), $t(9) = 1.3948$, p =.197.

Lastly, regarding the type of SM platform used, *t*-test results indicate that those who used Instagram were not significantly higher in SM addiction (*M* = 2.94, *SD*=1.029) than those who did not use Instagram (*M* = 2.33, *SD* = NaN), *t*(12)= -0.564, *p* = .583. Regarding TikTok, users of the platform were not significantly higher in SM addiction (*M* = 2.86, *SD* = 1.069) than those who did not use TikTok (*M* = 3.00, *SD* = .882), *t*(12)= 0.201, *p* = .844. In terms of YouTube, people who used the platform were not significantly higher in SM addiction (*M* = 2.97, *SD* = .740) than those who did not use the platform (*M* = 2.71, *SD* = 1.624), *t*(12)= -0.422, *p* =.680. Figure 12 indicates these *t*-test findings relating to social media platform use.

Figure 11

Correlation Matrix Between Types of Comparisons and Social Media Addiction

		Social Media Addiction
Body Image Comparison	Pearson's r	0.048
	p-value	0.871
Lifestyle Comparison	Pearson's r	0.522
	p-value	0.056
Academic Comparison	Pearson's r	0.519
	p-value	0.057
SES Comparison	Pearson's r	0.243
	p-value	0.402

Figure 12

T-Test Results Relating to Social Media Platform and Social Media Addiction

Social Media Addiction	Statistic	*df*	*p*
Instagram	-0.564	12	0.583
TikTok	0.201	12	0.844
YouTube	-0.422	12	0.068

Everyday Mood

Participants were asked to answer Uher and Goodman's (2009) 10 item everyday mood scale. The mean scores for these 10 items were calculated and used to run both *t*-tests and correlations for several variables. A correlation matrix was used to determine the direction and significance of the correlations regarding everyday mood scores and the types of comparisons participants made. Results indicated that everyday mood was

negatively, but not significantly, correlated with body image comparisons (r = -0.335, p = 0.242), lifestyle comparisons (r = -0.080, p = 0.786), academic comparisons (r = -0.066, p = 0.822) and SES comparisons (r = 0.278, p = 0.336). Figure 13 displays these findings.

Regarding GPA, *t*-test results indicated that A-range participants were not significantly higher (M = 3.16, SD = .207) than B-range participants (M = 2.90, SD = .141) in their everyday mood scores, $t(12)$ = .1.675, p = .120. Similarly, when using a *t*-test to analyze year of study, results found that those in third year were not significantly higher in their everyday mood (M = 3.22, SD = .286) than those in fourth year (M = 3.12, SD = .147), $t(9)$ = .775, p = .458.

When considering the type of SM platform used, *t*-test results indicated that those who used Instagram were not significantly higher in their everyday mood (M = 3.13, SD = .221) than those who did not use Instagram $t(12)$= -.569, p = .580. Regarding TikTok, users were not significantly higher in their everyday mood (M = 3.11, SD = .234) than those who did not use the platform (M = 3.17, SD = .153), $t(12)$= 0.397, p =.699. Lastly, those who used YouTube were not significantly higher in their everyday mood (M = 3.13, SD = .245) than those who did not use YouTube (M = 3.10, SD = .141), $t(12)$= -0.227, p = .825. Figure 14 indicates these *t*-test findings relating to social media use.

Figure 13

Correlation Matrix Between Types of Comparisons and Everyday Mood

		Everyday Mood
Body Image Comparison	Pearson's r	-0.335
	p-value	0.242
Lifestyle Comparison	Pearson's r	-0.080
	p-value	0.786
Academic Comparison	Pearson's r	-0.066
	p-value	0.822
SES Comparison	Pearson's r	0.278
	p-value	0.336

Figure 14

T-Test Results Relating to Social Media Platform and Everyday Mood

Everyday Mood	Statistic	*df*	*p*
Instagram	-0.569	12	0.580
TikTok	0.397	12	0.699

YouTube	-0.227	12	0.825

Social Comparison

Participants were also asked to answer the 11 item Iowa-Netherlands Comparison Orientation Measure (Gibbons & Buunk, 1999)**.** The mean scores for these 11 items were calculated and used to run both *t*-tests and correlations. A correlation matrix determined the direction of the correlations and the significance in regard to social comparison scores and the types of comparisons participants made. Results indicated that social comparison scores were positively, but not significantly, correlated with body image comparisons (r = 0.531, p = 0.050)**,** lifestyle comparisons (r = 0.411, p = 0.144), academic comparisons (r = 0.212, p = 0.467), and SES comparisons (r = 0.021, p = 0.943). Figure 15 displays these findings in a correlation matrix.

Regarding GPA, *t*-test results indicated that A-range participants were not significantly higher (M = 3.52, SD = .606) from B-range participants (M = 3.05, SD = 1.22) in their social comparison scores, $t(12)$ = .906, p = .38. Similarly, when using a *t*-test to analyze year of study, results found that third year participants were not significantly higher in their social comparison scores (M = 3.58, SD = .682) then those in fourth year (M = 3.58, SD = .574), $t(9)$ = .016, p = .988.

When considering the type of SM platform used, *t*-test results indicated that Instagram users were significantly higher in their social comparison (M = 3.55, SD = .590) than those who did not use Instagram (M = 2.18, SD = NaN), $t(12)$= -2.226, p = .046. Regarding TikTok, those who used that platform were not significantly higher in their social comparison (M = 3.55, SD = .614) than those who did not use the platform (M = 3.09, SD = .909), $t(12)$= -1.038, p = .320. Lastly, YouTube users were not significantly higher in their social comparison (M=3.46, SD=.681) than non-users (M = 3.41, SD = .759), $t(12)$= -.131, p = .898. Figure 16 displays these *t*-test findings.

Figure 15

Correlation Matrix Between Types of Comparisons and Social Comparison

		Social Comparison
Body Image Comparison	Pearson's r	0.531
	p-value	0.050
Lifestyle Comparison	Pearson's r	0.411
	p-value	0.144
Academic Comparison	Pearson's r	0.212
	p-value	0.467
SES Comparison	Pearson's r	0.021
	p-value	0.943

Figure 16

T-Test Results Relating to Social Media Platform and Social Comparison

Social Comparison	Statistic	*df*	*p*
Instagram	-2.226	12	0.046
TikTok	-1.038	12	0.320
YouTube	-0.131	12	0.898

Social Media Social Comparison

Participants were asked to answer Samra, Warburton, & Collin's (2022) 8 item social media social comparison scale**.** The mean scores for these 8 items were calculated and used to run both *t*-tests and correlations. A correlation matrix determined the direction and significance of the correlations pertaining to SM social comparison scores and the types of comparisons participants made. Results of this correlation indicate that SM social comparison was significantly positively correlated with body image comparisons (r = 0.664, p = 0.013), lifestyle comparisons (r = 0.668, p = 0.013), and academic comparisons (r = 0.609, p = 0.027). SM social comparison was also positively, but not significantly, correlated with SES comparisons (r = 0.227, p = 0.457). Figure 17 displays these findings.

Regarding GPA, *t*-test results found that A-range participants were not significantly higher (M = 3.45, SD = .738) than B-range participants (M = 2.81, SD = 1.503) on their SM social comparison, $t(11) = .998$, p = .340. When investigating year of study, *t*-test results indicated that third year participants were not significantly higher in their SM social comparison (M = 3.60, SD = .793) than those in fourth year (M = 3.58, SD = .497), $t(8) = .0598$, p =.954.

When focusing on the type of SM platform used, *t*-test results indicated that Instagram users were significantly higher in SM social comparison (M = 3.49, SD = .714) than those who did not use Instagram (M = 1.75, SD = NaN), $t(11)= -2.341$, p =.039. Regarding TikTok, users were not significantly higher in SM social comparison (M = 3.53, SD = .731) than non-users (M = 2.38, SD = .884), $t(11)= -2.020$, p =.068. Lastly, YouTube users in our sample were not significantly higher in SM social comparison (M = 3.24, SD = .735) than non-users (M = 3.63, SD = 1.104), $t(11)= .760$, p = .463. Figure 18 indicates these *t*-test findings.

Figure 17

Correlation Matrix Between Types of Comparisons and Social Media Social Comparison

		Social Media Social Comparison
Body Image Comparison	Pearson's r	0.664*
	p-value	0.013

Lifestyle Comparison	Pearson's r	0.668*
	p-value	0.013
Academic Comparison	Pearson's r	0.609*
	p-value	0.027
SES Comparison	Pearson's r	0.227
	p-value	0.457

Figure 18

T-Test Results Relating to Social Media Platform and Social Media Social Comparison

Social Media Social Comparison	Statistic	*df*	*p*
Instagram	-2.341	11	0.039
TikTok	-2.020	11	0.068
YouTube	0.760	11	0.463

Qualitative Results

To gain a deeper understanding of how undergraduate students at McMaster University feel about social comparison and SM, we used 2 open-ended questions, alongside descriptive coding to identify common themes presented in the data. Out of the 14 participants, there were 9 responses to the first qualitative question. Figure 19 categorizes the frequency of various response themes pertaining to participant emotions after using SM. The five emotional themes include: 1) positive, 2) neutral, 3) negative, 4) tired, and 5) changing. Many of the students who participated, responded with feeling positive after using SM sites and networks. The second most common theme was experiencing neutral or negative moods after SM usage. The theme that was least common was feelings of tiredness and feelings of inconstancy due to the type of platform utilized. Examples of the most common response theme include:

- "I feel happy after using social media because the posts are filtered to my interests, so I mostly see and view content such as memes which make me laugh"
- "If I'm using it to unwind it generally helps me relax and take my mind off responsibilities. If I have bingeing or tracking my social media likes then I feel more tired"

Out of the 14 participants, there were 6 responses our second qualitative question. Figure 20 categorizes the frequency of various response themes pertaining to participants self-reported social comparison tendencies. There were 3 coded themes: 1) upwards social comparison, 2) general social comparison, and 3) social comparisons do

not impact oneself. The most prominent themes were upward social comparison and general social comparison. Responses that identified upward comparisons stated:

- "I only ever really compare myself to others on social factors (do they have more friends than me, are they closer to their friends than me) - partly I think because that's what I'm most insecure about . . . it's the only thing that I really deeply care about and wish that I had but don't"
- "I think I generally compare when I see someone on vacation somewhere or doing something I want to be doing rather than school for example."
- "Sometimes it's irritating to see girls on social media flaunting their wealth and privileges through posts. It does not lower my self esteem, however it annoys me that other people are ignorant towards the less wealthy."

Figure 19

Survey Question 7: In the space below, please describe your general mood after using social media sites/networks.

Themes	Responses (n=9)
1. Positive	1. 4 (44.4%)
2. Neutral	2. 3 (33.3%)
3. Negative	3. 3 (33.3%)
4. Tired	4. 2 (22.2%)
5. Emotion depends on the platform	5. 2 (22.2%)

Figure 20

Survey Question 10: Based on your responses to the question above [about types of social comparison], please feel free to share your thoughts about social comparison with others.

Themes	Responses (n=6)
1. Makes upwards social comparisons	1. 3 (50%)
2. Makes social comparisons generally	2. 3 (50%)
3. Social comparisons do not impact self-esteem	3. 2 (33.3%)

Discussion

The Impact of Social Comparison on Students' Mental Health

Throughout our study, we focused on discovering how exactly the comparisons made by students while engaging in SM use impact their mental health. Festinger's theory of social comparison helped inform our research and provided us with a framework from which we were able to build our study upon (Festinger, 1954). Our qualitative findings (Figure 20) reveal that individuals are driven to compare themselves with others, as theorized by Festinger (1954). Moreover, half of the participants who responded to our second qualitative study question indicated a tendency to make upwards social comparisons on SM. This finding offers support for Festinger's (1954)

argument that individuals in Western societies may be more inclined to upwardly compare themselves with others.

As well, we used Katz, Blumler, & Gurevitch's (1973) uses and gratifications theory to help us understand the motivations behind SM engagement, and how it may serve to reward users. Our results indicate that social media serves several needs for McMaster undergraduate students. Most notably, SM was used for entertainment, passing time, and maintaining relationships.

Anto et al., (2023) conducted a systemic literature review and a qualitative study, revealing that SM does contribute to a negative influence on mental health. More specifically, they found that the participants would claim that SM did impact their anxiety levels and considered it a significant factor in the state of their mental health and overall well-being (Anto et al., 2023). Furthermore, this study also revealed that SM would increase participants anxiety levels through inducing feelings of stress, comparisons, fear of missing out, negative experiences, and procrastination which all led to poorer mental health (Anto et al., 2023).

Our research differed from the findings of Anto et al., when assessing the association between SM, social comparison, and how it impacts students' mental health. The responses given to our first qualitative question indicated that participants typically reported having positive experiences when engaging in SM use. More specifically, quantitative data analysis and open-ended responses revealed that students predominately used SM for entertainment purposes. Additionally, qualitative responses indicated that the content they are exposed to is typically catered to their interests, thus they only view content they enjoy.

Our qualitative analysis determined that the most common comparisons made by the participants were generally related to body image, however, as qualitative responses highlight, this finding did not lead to poorer mental health or lower well-being. Moreover, when considering how time spent on social media may influence social comparison tendencies a correlation matrix revealed that SM addiction was not significantly correlated to any of our identified types of comparison. Thus, our results indicate that participants' time on social media—which would likely increase as their SM addiction score increased—does not influence their likelihood to engage in social comparisons or impact their mental health outcomes.

Therefore, within our study, although we did find that the majority of students do in fact engage in social comparison while using SM, it does not become a predictor on the status of their mental health. There could be multiple explanations for this, but one could be because students find SM to be an entertaining experience and typically encounter positive feelings when exposed to different platforms and their content.

Social Media and Social Comparison

Both the qualitative and quantitative results of this study helped to inform our understanding of how social networking sites affect the mood of students and how they compare themselves on SM. Our quantitative results concluded that the domains in which McMaster undergraduate students compared themselves include body image, lifestyle, academic achievements, and SES. Among these platforms, body image was the most identified type of comparison among participants. Additionally, our *t*-test results found that SES related comparisons were significantly higher among TikTok users, as

well as third-year McMaster students. In addition, our qualitative findings indicated that participants made comparisons in lifestyle aspects (i.e., number of friends, closeness of friends, and life circumstances) as well as SES aspects (i.e., other people's wealth and material items). Although our research aimed to uncover how students felt after using social networking sites, we were unable to establish a direct and significant relationship between the use of SM and the emotions it elicits due to the limited sample size.

We discovered that our subset of McMaster undergraduate students engages in social comparison when using SM. As indicated by our qualitative responses, the predominant style of comparison was upward. Within our specific population subset, no evidence of downward comparison when engaging with SM was found. Despite the presence of social comparison, participants reported that comparison on SM did not impact their self-esteem. This finding in our research is particularly interesting as it deviates from past research. Schmuck et al., (2019), for example, suggest that when individuals engage in upward social comparison, it correlates with a negative impact on one’s self-esteem. This inconsistency in findings offers avenues for future research to determine whether upward comparison affects one’s self-esteem.

Finally, in answering the question of which sites evoked the most comparison, we found that Instagram users engage significantly more in social comparison as opposed to those who used other SM platforms. More specifically, the predominant themes of comparison associated with Instagram use, as identified by quantitative results, are body image and lifestyle. Pedalino and Camerini’s (2022) research attempted to explain why Instagram is commonly linked to upward comparison. Their study found that the visual nature of the platform, the tendency to alter one's image through digital editing and filters, as well as the presence of unattainable influencer role models, were responsible for the increased likelihood of social comparison (Pedalino and Camerini, 2022). Despite these conclusions, our findings are limited as 93% of our participants reported using Instagram, and our sample size is small and thus difficult to generalize our data. Given these limitations, it remains unclear whether Instagram users are truly more likely to engage in comparison. Future research designed specifically to determine whether Instagram exacerbates social comparison and problematic use is needed to clarify these findings and establish a more definitive correlation between SM platforms and comparison behaviours.

Limitations

Throughout the duration of our research project, we were confronted with a few limitations. Primarily, we had to move through the process of our study relatively quickly because we were restricted by the short duration of the course. As well, the substantial preparation required before starting data collection left us with a narrow window for respondents to find and participate in our study. Unfortunately, this resulted in a low sample population, which we believe may have been one of the causes of the robustness and lack of variability and significance of our findings.

Another limitation arose from the restricted participant pool to which our research was confined. This limitation stems from the nature of an undergraduate course and the research guidelines we were required to adhere to. Consequently, we were unable to recruit from a more diverse population, which compromised our external validity. For example, we did not have any male identifying participants which prevented us from

investigating significant gender differences. We believe that this constraint impacted both the quantity of responses received and the applicability of our research. As mentioned earlier, in response to the participant limitation, our group made efforts to contact as many diverse groups as possible. However, we were met with challenges when it came to communicating with various groups around McMaster. Most of the groups that we tried to recruit participants from failed to respond to our requests, despite sending follow-up inquiries. In addition, for the group that did post a link to our study, we discovered after a week that the link was corrupt. Despite fixing the issue, a large amount of our recruitment time had already elapsed at that point. We believe that these issues, in conjunction with each other, made it difficult for us to achieve a larger sample size, with more diverse populations.

Furthermore, our project faced limitations regarding the research methodology that we selected. For instance, when using questionnaires as a form of data collection, the validity of the results may have been compromised due to participants being prone to social desirability bias. Social desirability bias can occur when individuals select answers that they assume are socially desirable, rather than selecting an option that is true to themselves. In addition, our topic of SM, social comparison, and its impact on mental health may be a sensitive topic to some demographics. Thus, we hypothesize that some participants may have felt reluctant to answer certain questions, or even engage with the study. This may have compromised the validity of our results and may not accurately represent the true experiences of our demographic. To address this, we emphasized that all participants engaging in the research would remain anonymous throughout the duration of the study.

Significant Insights

Our research has provided insight into the role that social comparison plays in SM usage, and how it may impact the well-being of McMaster University undergraduate students. Admittedly, our low sample size made it difficult to identify a great deal of significant trends in the data, thus we did not have as many insights as we had hoped. Nevertheless, our study was still able to inform our research question, as well as create a starting point for future research. Factors such as type of SM site, type of social comparison, and level of study did indicate some level of predictability on the likelihood of engaging in social comparison.

Primarily, we found that the type of social media site can influence an individual's tendency to compare oneself to others. Individuals who use Instagram were more likely to engage in social comparison on SM than those who do not use the platform. Additionally, those who used TikTok did have a significantly higher tendency to engage in SES related comparisons than non-users of the platform. Further, the level of study of our participants proved to be an indicator of the type of social comparison that a student is likely to make. Our study indicated that third year students were more likely to make comparisons with others based on SES than fourth year students.

One of our most significant insights, due to its unexpectedness, was that using social media and even engaging in some social comparisons did not result in depressed levels of mental health among the majority of our respondents. Again, while our sample size must be taken into consideration when observing these insights and results, these qualitative results still provide a unique and unexpected caveat to the literature. Future

research with larger and more diverse samples should importantly aim to confirm or reject this insight produced within our study.

While not statistically significant, our research did also produce findings consistent with previous literature. That is, similar to studies by Esiyok & Turanci, 2017; Jiotsa et al., 2021; and Scully et al., 2023, our study found body image comparisons were the predominate type of comparison participants made. Despite majority of our findings being statistically insignificant, including an analysis of certain student life variables (i.e., GPA and year of study) enabled our study to further the literature on social comparison by bridging one current gap within it. An additional gap in the literature was bridged by examining more than one SM platform in our study. However, as previously stated, future research with larger and more varied sample sizes would need to examine these components to truly understand their significance and impact.

Conclusions

Upon completing our research, we have discovered that, when undergraduate students use SM platforms, it can often lead to them engaging in social comparisons that do have an impact on their mental health and overall well-being. Throughout this study, we have analyzed the amount of time spent on different social media platforms and how students compare themselves to the content they are exposed to. Furthermore, we found that students are most often engaging in comparisons related to body image and SES while using platforms including Instagram, TikTok, and YouTube. In addition, we also discovered that overall, the participants had a more positive experience while using SM as most felt that the content they were exposed to was catered to their interests and thus enjoyable.

This study emphasizes the interplay between SM, social comparison, and the mental health of McMaster undergraduate students. Ultimately, undergraduates most used SM to be entertained, maintain relationships, and pass time. The present study sheds light on contextualizing and operationalizing theories pertaining to social media use and how it influences the mental health of undergraduates at McMaster.

Mental health can be impacted by a myriad of variables; thus, it is essential to highlight the impact of SM on mental health as the number of undergraduate students who regularly use these platforms is ever-growing (Primack et al., 2017). Moreover, it is critical that stakeholders are aware of the benefits and risks of SM usage. For example, students, post-secondary counselors, and health practitioners can learn about the impacts of SM while also discovering effective ways to manage certain emotions, be reflective, and be proactive in their SM usage.

Our study's limitations regarding sample size and diversity reflect a need for further research, with a larger, more varied sample, to further investigate our research questions. Moreover, future research is needed to examine the areas our study was unable to cover such as gender, age, program, and ethnicity differences. Overall, some of our findings within this study have contributed to, and confirmed, the existing literature regarding social media, social comparison, and mental health. However, other components of our findings such as the way SM usage impacts mental health have furthered the literature by posing interesting contradictions to the present understanding of the way mental health is impacted by SM use. Thus, it is our hope that despite a small and homogeneous sample our research has contributed to, and furthered

research on, the relationship between social media, social comparison, and the mental health of McMaster undergraduate students and given future researchers findings that can guide their inquiries.

Acknowledgments

As a team we would like to extend our most sincere thanks to Dr. Sarah Clancy for her steadfast support, guidance, and patience throughout our entire research project. A special thank you to the Social Psychology Program for granting us the opportunity to be undergraduate researchers and their commitment to supporting not only us but to all students throughout the process. Thank you to all the McMaster clubs and societies who engaged with our research. Lastly, thank you to all our respondents for their time, participation, and willingness to support our research. Without them this process would not have been as successful as it was. We are grateful for their cooperation.

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