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The Effects of Self-Control and Self-Awareness on Social Media Usage, Self-Esteem, and Affect

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ABSTRACT

Background With the increase in social media usage, investigation into factors that mitigate excessive and problematic usage is warranted. Factors such as self-awareness were included in the analysis of social media usage as it leads individuals to focus on personal ideal standards, begging the question as to whether high self-awareness limits problematic social media usage. Self-control, strengthened by self-awareness, was measured to examine its involvement in limiting excessive social media usage. Self-esteem and affect were included in analyses as they have never been examined in relation to both self-awareness and social media usage. It was hypothesized that self-awareness would be negatively related to social media usage, given self-control levels are high. Furthermore, self-awareness would be positively related to self-control, self-esteem, and affect, given social media usage is low.

Methods 125 psychology students (73.6% female) completed scales on self-awareness, social media usage, self-esteem, self-control, and affect. Linear regressions with moderation and mediation were conducted.

Results No moderation occurred but it was found that self-control mediated the relationship between self-awareness and social media usage. Self-awareness was positively related to self-esteem, self-control, and positive affect. Social media usage was not significantly related to self-esteem, positive affect, or negative affect. Self-control acted as a mediator in numerous analyses involving self-awareness and social media usage.

Conclusions Self-awareness promotes self-control, resulting in reduced social media usage. Future research could focus on cultivating self-awareness and the consequent self-control to help avoid the negative outcomes associated with social media usage (e.g., reduced self-esteem).

KEY WORDS: **self-awareness, social media usage, self-control, self-esteem, affect**

1 | INTRODUCTION

Although there is not a consensus on the relationship between social media usage and wellbeing, individuals whose social media usage negatively affects their wellbeing are not guaranteed to lessen their use of social media (Błachnio et al., 2016). Studies have shown that increased social media usage is associated with negative affect, lowered self-esteem, and lowered life satisfaction (Bergagna & Tartaglia, 2021; Błachnio et al., 2016). However, in general, social media usage is not strongly negatively associated with wellbeing (Huang, 2020). There is a negative relationship between wellbeing and social media usage when usage is excessive though (Du et al., 2021). Given that social media usage is likely to negatively relate to self-esteem and affect when usage is excessive, it would be interesting to investigate factors that prevent excessive use.

One of these factors is self-awareness. Self-awareness is defined as "the capacity of becoming the object of one's own attention. In this state, one actively identifies, processes, and stores information about the self." (Morin, 2011, p. 4). There is a self-regulatory aspect to self-awareness whereby, when an individual focuses on oneself, they are reminded of their personal and ideal standards (Morin, 2011). This focus on ideal standards serves to remind an individual if they are experiencing discrepancies between their current state and ideal standards. Thus, a highly self-aware individual is likely to alter any problematic behaviour to align with their ideal standards. As there is this self-regulatory benefit to self-

awareness, research into whether self-awareness is related to decreased social media usage could be conducted. Moreover, self-control, an outcome of self-awareness, is negatively associated with social media usage (Błachnio & Przepiorka, 2015). This leads to the question of whether highly self-aware individuals are more likely to control their social media usage, something which has garnered little attention in research. The relationship between self-esteem, affect, and self-awareness has also received little research attention. Since social media usage, self-esteem, and affect have been heavily researched, it would be interesting to investigate how self-awareness impacts this relationship. Therefore, self-awareness and social media usage will be the focus of this study as well as how self-control, self-esteem, and affect are involved in this relationship.

1.1 Social Media

Social media usage has increased exponentially in the past decade and the COVID-19 pandemic has worsened any addiction to social media for many (Zhao & Zhou, 2021). Shi et al. (2014) defined social network sites as "web-based services that allow individuals to construct a profile and share connections with a certain list of other users." (p. 12). Although it is understandable why many turned to social media during the pandemic, in the broader image, social media still poses a threat to one's mental health (Huang, 2020). For example, individuals can be influenced to feel a certain way depending on the emotional content that they receive on social media (Kramer et al., 2014). When people reduce positive expressions on social media, people reduce positive posts and increase negative social media posts, demonstrating how social media can create an emotional contagion amongst users (Kramer et al., 2014). Altogether, considering how pervasive social media is, research into the effects of its use is necessary and justified.

1.2 Social Media and Affect

Although social media is generally associated with negative outcomes, the outcomes are not necessarily strong and universal for users. Positive affect "reflects the extent to which a person feels enthusiastic, active, and alert" whereas negative affect is "a general dimension of subjective distress and unpleasurable engagement that subsumes a variety of aversive mood states." (p.1) (Watson et al., 1988). Meta-analyses indicate a small negative relationship between problematic social media usage and well-being as well as a moderate positive relationship between problematic social media use and distress (Huang, 2020). In the meta-analysis, these relationships were still present when controlling for factors like publication status (i.e., impact factor of journals) and reliability of instruments (e.g., questionnaires) used. Problematic social media usage typically refers to the situation whereby the user feels as though they cannot stop using social media, indicating a loss of self-control (Huang, 2020). Further meta-analyses do not find any dramatic negative effects from social media, only small associations between the intensity of social media usage and self-reported depression and loneliness (Appel et al., 2019). Since research indicates variability in the effects of social media, research into factors (such as self-awareness) that affect this variability is warranted (Beyens et al., 2020).

1.3 Social Media and Self-Esteem

Self-esteem is defined as the negative or positive evaluation of the self (Bergagna & Tartaglia, 2018). Research pertaining to social media has focused on how social media usage affects self-esteem since social media heavily involves presenting oneself in an idealistic manner (Bergagna & Tartaglia, 2018).

It is often found that individuals with high self-esteem report positive experiences with social media as it enhances their social connectivity whereas people with lower self-esteem are at a higher risk of becoming addicted to Facebook (Bergagna & Tartaglia, 2018). In a study by Bergagna and Tartaglia (2018), three modalities of Facebook use were identified (250 university students participated): stimulation, search for relations, and social interaction. Self-esteem was negatively associated with time spent on Facebook, but only for males. For females, there was a positive relationship between using Facebook for social interaction and self-esteem. For males and females, self-esteem was negatively correlated with social comparison orientation (comparing oneself to others) which predicted more time spent on Facebook. Therefore, the authors found that females with low self-esteem spend more time on Facebook to compare themselves to others to enhance their self-esteem. Thus, social media usage is associated with lowered self-esteem for females and males except for when social media is used for social interaction by females (Bergagna & Tartaglia, 2018).

In addition, Błachnio et al. (2016) found a direct relationship between self-esteem and social media use in their cross-sectional study on the association between Facebook addiction, life satisfaction, and self-esteem. Participants (381 Facebook users) were classified as "ordinary", "problematic", or "addicted" Facebook users. Increased Facebook usage was negatively related to life satisfaction. Furthermore, scores on life satisfaction were lowest among addicted Facebook users. As for self-esteem, the addicted and problematic Facebook users had low self-esteem whereas the ordinary Facebook users had highest self-esteem. Therefore, Błachnio et al. (2016)

found negative relationships between self-esteem, life satisfaction, and problematic and addicted Facebook use.

Ultimately, research into factors that are associated with unproblematic (moderate and social interaction oriented) social media usage is warranted. Self-awareness, a trait which leads to the reassessment of current versus ideal standards, could mitigate problematic social media usage and therefore lowered self-esteem. Furthermore, research into whether self-control is involved in the relationship between self-awareness and social media usage is justified as self-control is positively associated with self-awareness and negatively associated with social media usage.

1.4 Social Media and Self-Control

As mentioned, self-control is often researched in relation to social media usage. Self-control is defined as the control over one's behaviours, desires, and emotions (Cudo et al., 2020). Self-control failure is conceptualized as something that emerges because of limited resources, resulting in poorer self-control performance (Alberts et al., 2011). Self-control failure caused by social media usage may account for 35% of the time that people spend on social media (Du et al., 2021), highlighting the importance of assessing self-control in relation to self-awareness and social media usage.

Individuals with higher self-control are less susceptible to Facebook addiction (Błachnio and Przepiorka, 2015). Furthermore, a longitudinal study examined the relationship between social media self-control failure, wellbeing, and mindfulness (synonymous with self-awareness) (Du et al., 2021). Mindfulness, the capability of acting and behaving with awareness of ongoing experiences in a non-judgemental fashion, is positively associated with self-control (Du et al., 2021). Life satisfaction, subjective vitality, social media self-control failure, and mindfulness measures were administered three times to 270 participants. In line with the authors' hypotheses, self-control failure, as caused by social media usage, was related to lowered wellbeing and mindfulness over time.

In conclusion, self-control is negatively related to social media usage. As self-control can prevent problematic social media usage (and the consequent reduced self-esteem), the question of what leads to self-control arises. Is there a trait that can be enhanced and therefore help minimize the occurrence of problematic social media usage? According to the literature, there has not yet been a study that has examined how self-awareness impacts social media usage. Self-awareness will be discussed to assess its potential relationship to social media usage.

1..5 Self-Awareness

Self-awareness refers to being the object of one's own attention and engaged in a state where one actively acknowledges, processes, and stores information regarding oneself (Morin, 2011). Self-awareness involves reflection when perceiving and processing stimuli. Furthermore, self-awareness entails private self-aspects like emotions and thoughts as well as public self-aspects like physical appearance and behaviour.

One of the most beneficial aspects to self-awareness is that it enhances self-regulation. Self-awareness leads an individual to assess how they are doing compared to some ideal standard that they have personally set for themselves (Alberts et al., 2011; Duval & Wicklund, 1972). Self-awareness increases the saliency of this standard, compelling an individual to evaluate how they compare to the standard and adjust their behaviour to achieve the personal standard (Alberts et al., 2011). Research has demonstrated that when self-awareness is heightened, individuals will attribute more meaning to their choices (Dishon et al., 2018).

Additionally, the benefits associated with self-awareness were exemplified in a study conducted by Kreibich et al. (2020). Kreibich et al. (2020) sought to assess how self-awareness is involved in the process of identifying obstacles when achieving certain goals as self-awareness has previously been implicated in goal achievement. It was found that individuals with higher situational and dispositional self-awareness identified more obstacles in relation to personal idiosyncratic goals. Also, participants with higher levels of situational and dispositional self-awareness were able to identify more obstacles within the assigned task. Altogether, self-awareness is implicated in the identification of obstacles that hinder goal achievement as well as the attribution of meaning to decisions, demonstrating how self-awareness is valuable (Kreibich et al., 2020).

There are maladaptive aspects to self-awareness too as rumination can occur (Morin, 2011). Ruminative self-focus involves anxiously thinking about oneself and comparing oneself to a standard that they have set, yet they do not meet this standard (Morin, 2011). This effect is enhanced in individuals who are highly self-aware. In a study conducted by Sutton (2016), more evidence for the ruminative factor of self-awareness was discovered. Self-awareness was associated with self-reflection, insight, rumination, and mindfulness (Sutton, 2016). Self-reflection and insight predicted beneficial outcomes whereas rumination predicted increased costs and reduced benefits associated with self-awareness (Sutton, 2016). Highly self-aware individuals who ruminate are more likely to experience depression, anxiety, and neurotic tendencies

(Morin, 2011; Silvia & O'Brien, 2004). However, individuals who do meet their personal standards are less likely to ruminate. Instead, they either engage in reflection that will lead them to either change their ideal standard or change themselves to meet their ideal standard (Morin, 2011). Therefore, self-awareness can either result in reflection or rumination (Silvia & O'Brien, 2004).

Altogether, individuals who are highly self-aware and who address self-discrepancies are likely to have increased self-control, enhanced self-esteem, and increased positive affect. However, highly self-aware individuals who ruminate can potentially experience decreased self-esteem, increased negative affect, and an increased risk of anxiety and depression.

1.6 Self-Awareness and Social Media Usage

Although social media has been examined in relation to a plethora of other variables (e.g., self-esteem), there is a dearth of studies that have examined the relationship between self-awareness and social media use. Of the few studies that have examined self-awareness in relation to social media usage, it was discovered that individuals with higher narcissism (an inflated self-concept) increased their public awareness (awareness of oneself from others' perspectives) after browsing Facebook (Qiu et al., 2010).

Although this study involved self-awareness, it focused on public self-awareness instead of self-awareness as it is typically defined (e.g., being the object of one's attention). Furthermore, there has not been a study that has assessed the relationship between self-awareness, social media usage, self-esteem, and affect and if self-control moderates these relationships. As self-awareness involves a self-regulatory mechanism that makes personal standards salient, resulting in the alteration of problematic behaviour, it would be interesting to examine how self-awareness relates to problematic social media usage (Du et al., 2021).

1.7 Self-Awareness and Affect

The relationship between affect and self-awareness relies on an individual's perception of the discrepancy between their actual versus ideal self (Phillips & Silvia, 2005). Objective self-awareness theory predicts that higher self-awareness strengthens the relationship between emotions and self-discrepancies (Phillips & Silvia, 2005). This aligns with the previous discussion on the connection between self-awareness and self-regulation. As previously stated, self-awareness causes an individual to reevaluate their current state and compare it to their ideal standards (Silvia & O'Brien, 2004). When a discrepancy between current state and ideal standards occurs, an individual can either adjust their behaviour to align with the ideal standards, change the ideal standard to align with their current state, or outright avoid the discrepancy. Regardless of how an individual deals with the discrepancy, the acknowledgement of the discrepancy can initiate negative emotions (Phillips & Silvia, 2005).

This initiation of negative affect does not occur for individuals with low self-awareness as Phillips and Silvia (2005) found that, when self-awareness was not induced, self-discrepancies had nonsignificant and weak relations to emotions. Therefore, self-awareness is associated with negative affect for individuals with high self-awareness and apparent self-discrepancies. This occurs because self-awareness increases the emotional consequences of self-standard discrepancies. Consequently, the motivation to achieve congruency between one's current state and their ideal standards is heightened (Phillips & Silvia, 2005). Aside from this acute negative affect from the acknowledgement of self-discrepancies, self-awareness is associated with positive affect. Self-awareness is related to positive affect as reflection results in improved mental health due to improving one's understanding of their emotions, values, etc. (Morin, 2011). Therefore, the emotional consequences, whether they be negative or positive emotions, of self-awareness are adaptive, propelling an individual to achieve congruency between their current and ideal standards.

1.8 Self-Awareness and Self-Control

The adaptiveness of self-awareness is also exemplified with its effects on self-control. Silvia and O'Brien (2004) state that "self-awareness enables people to internalize standards of conduct, appraise whether or not they are meeting them, and reflect upon their actions in light of broader principles." (p. 5). Self-awareness leads to the reassessment of one's actions and analyzing whether one is meeting their ideal standard of conduct, increasing self-control (Silvia & O'Brien, 2004).

In addition, self-awareness is associated with self-control even after ego depletion has occurred. Ego depletion is the gradual depletion of resources after exerting self-control (Alberts et al., 2011). Therefore, ego depletion is the process whereby self-control failures are more likely to occur (the strength model of self-control). A study conducted by Alberts et al. (2011) showed that individuals who had high ego depletion and were primed for self-awareness outperformed the participants on the self-control task who had high ego depletion but were not primed for self-awareness. This result can be explained by the self-regulatory aspect to self-awareness because self-awareness made their personal standard for self-control salient, inducing self-control in their behaviour.

In sum, self-awareness makes the personal standard of self-control salient, causing one to alter their behaviour (Alberts et al., 2011). Consequently, this study will examine how self-awareness and self-control interact and the consequent effects on social media usage, self-esteem, and affect.

1.9 Self-Awareness and Self-Esteem

In addition, self-awareness will be examined in relation to self-esteem as self-esteem is affected both by self-awareness and social media usage. Self-awareness may be related to either reduced or enhanced self-esteem depending on whether the individual with high self-awareness meets whatever standard they have set for themselves or if they handle the discrepancy in a healthy manner (Cheng et al., 2012; Silvia & O'Brien, 2004). Handling the discrepancy in a healthy manner entails addressing the discrepancy whereas a problematic approach involves avoiding the discrepancy (Cheng et al., 2012).

Silvia and Duval (2002) examined the relationship between self-awareness and self-esteem and considered how information about probability for improvement would affect this relationship. Results indicated that highly self-aware individuals who were told that there was a high probability of improvement experienced lowered state self-esteem. However, highly self-aware individuals who were told that they have a low probability of improvement experienced heightened self-esteem (Silvia & Duval, 2002).

Cheng et al. (2012) assessed how inducing self-awareness in individuals with either congruent or incongruent implicit and explicit self-esteem impacts their emotions. Self-esteem is described as both the explicit (how one presents oneself) and implicit (how one thinks of oneself) self-evaluations that individuals use for themselves. One can have an incongruent self-esteem (e.g., low implicit, high explicit self-esteem). As self-awareness can initiate negative affect by enhancing focus on self-discrepancies, the authors wanted to investigate how self-esteem congruency relates to negative affect.

Results demonstrated that individuals with high implicit and low explicit self-esteem exhibited increased negative affect after the self-awareness manipulation (mirror placed in front of the participant). Individuals with congruent self-esteem (high implicit and explicit) did not experience any significant changes in negative affect after experiencing heightened self-awareness. This study aligned with previous studies that demonstrated that self-awareness can initiate negative affect in individuals who fail to meet personal standards (due to incongruent self-esteem).

Another study on self-awareness and self-esteem involved showing images of various female and male facial expressions (happy, disgusted, and angry) (Kim et al., 2019). The participants were asked about which face most closely resembled their face as well as which face most closely resembled the face of someone looking at you, inducing self-awareness.

It was discovered that a high number of participants in the low self-esteem group selected the disgusted and angry faces in comparison to the high self-esteem group, demonstrating a negative self-evaluation. The high self-esteem group selected happy faces more frequently than the low self-esteem group, exhibiting a positive self-evaluation. Therefore, when self-awareness is induced, individuals with high self-esteem will evaluate themselves positively and individuals with low self-esteem will evaluate themselves negatively, underlining the complex relationship between self-awareness and self-esteem.

In sum, the relationship between self-awareness and self-esteem is complicated by whether personal standards are met. Failure to meet personal standards (exemplified by an incongruent self-esteem) can result in negative affect amongst the highly self-aware (Cheng et al., 2012). Lastly, inducing self-awareness for individuals with high self-esteem leads them to evaluate themselves positively but negatively for those with low self-esteem (Kim et al., 2019). As self-awareness and self-esteem do not exemplify a clear relationship, further investigation into factors (e.g., self-control) that moderate this relationship is necessary. Furthermore, as self-esteem is often negatively related to social media usage, it would be interesting to see how self-awareness interacts with social media usage and self-esteem.

1.10 The Present Study

The present study will investigate the relationship between social media usage and self-awareness. Additionally, self-control, self-esteem, and affect will be measured. As discussed, self-awareness has a self-regulatory mechanism, leading individuals to evaluate their ideal and personal standards, identify goal obstacles, and attribute meaning to personal choices (Dishon et al., 2018; Kreibich, 2020; Morin, 2011). This regulatory aspect can lead to either self-reflection (resolving the discrepancy) or rumination (avoiding the discrepancy). Self-control is believed to be an indication of the alteration of behaviours to align with ideal standards in the sense that, when an individual experiences a discrepancy, their self-control increases to resolve the discrepancy (Alberts et al., 2011; Silvia & O'Brien, 2004). Therefore, it could be that self-control is involved in whether self-awareness is negatively or

positively related to social media usage. In addition, although research indicates that social media usage negatively impacts self-esteem (Bergagna & Tartaglia, 2018), it would be enlightening to understand how self-awareness and self-control are involved in this relationship.

Altogether, research indicates a negative relationship between social media usage, self-esteem, and self-control. As for the relationship between affect and social media usage, the consensus is not as clear, but findings point to a slightly negative relationship. Studies show self-control and self-awareness are positively related. Furthermore, the relationship between self-esteem and self-awareness is dependent on ideal standards being met.

With these results in mind, the aim of this study is to examine if the relationship between self-awareness and social media usage is moderated by self-control. Given that self-awareness is associated with increased self-esteem and increased positive affect (when ideal standards are met), it would be expected that increased self-awareness and self-control along with decreased social media usage would be related to increased self-esteem and positive affect. Therefore, the first hypothesis is that the relationship between self-awareness and social media usage is negative if self-control levels are high. Thus, self-control will moderate the relationship between social media usage and self-awareness. Self-awareness will be the predictor variable while social media usage will be the outcome variable. The other hypotheses state that self-awareness and self-control will have a positive relationship with self-esteem and positive affect, given social media usage is low. Therefore, social media usage will be the moderating variable. Self-awareness and self-control will be the predictor variables while self-esteem and positive affect will be the outcome variables (Bergagna & Tartaglia, 2018; Błachnio et al., 2016; Du et al., 2021).

2 | METHODS

2.1 Ethics

All participants volunteered to participate in the study and received a 1% increase to their psychology final grade. All the participants provided their written informed consent for study participation. The study was approved by the Brandon University Research Ethics Committee, in accordance with the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS-2018) (ethics number: 22949).

2.2 Participants

125 participants were recruited on a voluntary basis through introductory psychology courses. Participants were 73.6% female, 20.8% male, and 0.8% nonbinary. The majority were first year university students (44%) with a Muni= 2.06. The age ranged from 18-58 with a Mage = 21.55. White/European was the most listed ethnicity (60.8%). The rest were Asian (13.6%), Black/African (10.4%), Indigenous (10.4%), and Hispanic (4.8%). Table 1 demonstrates demographic information for the sample.

A G-Power A Priori analysis for a linear multiple regression model indicated that 110 participants were to be recruited to achieve a 0.95 power and 0.10 effect size. A small effect size was assumed considering there has never been a study that has assessed the relationships between self-awareness, self-control, affect, and self-esteem in the context of social media usage.

2.3 Materials

All the materials were presented in a randomized fashion on Microsoft Forms. Participants were asked to identify their age, gender, years in university, and ethnicity.

The revised, short-form *Self-Reflection and Insight Scale* (SRIS) was used to measure self-awareness (Silvia, 2021). There are 12 items in the short-form SRIS with two subscales. The first subscale measures self-reflection and has 6 items. The second subscale measures insight and has 6 items. The self-reflection section has a Cronbach's α = .87 and the insight section has a Cronbach's α = .83. Furthermore, the scale has strong reliability, no differential item functioning for genders, as well as strong convergent validity with scales that measure private self-consciousness (Grant et al., 2002; Silvia, 2021). The items are scored on a 6-point Likert scale (1 = strongly disagree, 6 = strongly agree) (e.g., *I don't often think about my thoughts*). Higher scores on the scale indicate an increased tendency to self-reflect and engage in insight. The SRIS is commonly used to measure self-awareness (Silvia, 2021).

The *Brief Self-Control Scale* was used to measure self-control (Tangney et al., 2004). It has a Cronbach's α = .85, good convergent validity with other self-control scales, and has strong test-retest reliability (Cudo et al., 2020). There are 13 items on the scale (e.g., *I have a hard time breaking bad habits*). Items are scored on a 5-point Likert scale (1 = not at all like me, 5 = very much like me). Higher overall scores reflect poorer self-control.

Self-esteem was measured using the *Rosenberg Self-Esteem Scale* (Rosenberg, 1965). It has a Cronbach's α = .85,

Table 1. Demographic Information for Sample

	n	%
Gender		
Female	92	73.6
Male	26	20.8
Nonbinary	1	0.8
Missing	6	6.4
Age		
18-20	72	57.6
21-23	23	18.4
24-26	8	6.4
27-58	14	11.2
Missing	8	6.4
Years in University		
1 year	55	44.0
2 years	26	20.8
3 years	20	16.0
4 years	12	9.6
5-11 years	4	3.2
Missing	8	6.4
Ethnicity		
White/European	76	60.8
Indigenous	13	10.4
Hispanic	6	4.8
Asian	17	13.6
Black/African	13	10.4

Table notes:
N=125. Participants were on average 21.5 years old

moderate construct validity, and has excellent reliability (Bergagna & Tartaglia, 2018). The scale contains 10 items (e.g., *I feel that I have a number of good qualities*). Items are scored on a 4-point Likert scale (1 = strongly disagree, 4 = strongly agree). Higher scores indicate higher self-esteem.

Affect was measured using the *Positive and Negative Affect Scale* (PANAS) (Watson & Tellegan, 1988). It has excellent convergent and discriminant validity, strong reliability, and its Cronbach's α = .84–.90 (Watson et al., 1988). The PANAS has 20 items and two subscales. The first subscale measures positive affect and has 10 items. The second subscale measures negative affect and contains 10 items. Participants are scored on a 5-point Likert scale (1 = slightly or not at all, 5 = extremely) on emotions such as interest and hostility. Higher scores on the positive affect items reflect increased positive affect whereas higher scores on the negative affect items reflect increased negative affect.

The *Social Network Sites Usage Questionnaire* was used to measure social media usage, Cronbach's α = .82 (Shi et al., 2014).

Shi et al. (2014) state that the questionnaire demonstrated strong validity and reliability in their Chinese population. Although there are two subscales (one for usage and one for affective experience), only the subscale that measures social media usage will be used. There are 13 items in the usage subscale, 10 which measure frequency of usage on a 7-point scale (1 = never, 7 = multiple times a day) (e.g., *how frequently do you check others' comments or messages on your profile?*). The other 3 items measure duration of time on social network sites (1 = less than 15 minutes, 7 = more than four hours), number of friends (1 = 1-50, 7 = over 500), and the constitution of friends (1 = all are real life friends, 7 = all are strangers in real life). Higher scores on all the items indicates increased social media usage. Each scale demonstrated

acceptable Cronbach's alphas for this study and were relatively normally distributed, as demonstrated by Table 2.

Table 2. Cronbach's Alphas for Scales

	Mean	Std. Deviation	Cronbach's Alpha
SC	3.151	0.388	0.853
PA	3.172	0.122	0.873
NA	2.328	0.481	0.855
SE	2.849	0.356	0.898
SA	4.161	0.439	0.789
SMU	2.960	1.361	0.741

Table notes:
SC: Self-Control, PA: Positive Affect, NA: Negative Affect, SE: Self-Esteem, SA: Self-Awareness, SMU: Social Media Usage

2.4 Procedure

A brief description of the study was presented to introductory psychology students over Zoom at the beginning of their classes. The scales included in the study were listed. The students were given access to the researcher's and advisor's emails if they had any questions after the presentation. The purpose of the study was not revealed to students until they consented to participation and completed the scales. They received a 1% bonus to their introductory psychology mark for participation. Students were informed that anyone could participate, regardless of gender, race, etc. There was a requirement that participants be 18 years old and over.

Students accessed the study through a URL link. The professor presented the URL and presentation script. This URL led them to Microsoft Forms. Once the participant completed the consent form and scales, they were provided with a debrief and thanked for their participation. The study was presented to five introductory psychology classes and two second-year psychology classes.

2.5 Design

The study had a correlational design and moderation analyses were conducted for each hypothesis. For the first hypothesis, self-awareness was the independent variable and social media usage was the dependent variable. Self-control was the moderating variable. For the following hypotheses, self-awareness and self-control were the independent variables while affect and self-esteem were the dependent variables. Here, social media usage was the moderating variable.

3 | RESULTS

Once the survey was closed, the data was transferred to an Excel document to be coded. Once the data was entered into IBM's SPSS software, analysis of reliability and descriptive statistics were done. Table 3 shows descriptive statistics for each scale. Table 4 demonstrates correlations between the variables.

Each hypothesis involved a moderation analysis which was done using Hayes (2012) PROCESS macro (Model 1) for SPSS. Additionally, mediation analyses were done using the same Hayes (2012) PROCESS macro (Model 4). This PROCESS macro centered the variables, established if there were any main effects, and provided significance coefficients for the interactions. Each hypothesis met all assumptions required to conduct linear regressions with moderation and mediation. For hypothesis 4, 3 outliers (< 3 standard deviations) had to be removed.

Table 3. Descriptive Statistics for Self-Control, Positive Affect, Nefative Affect, Self-Esteem, Self-Awareness, and Social Media Usage

	Min	Max	Mean	SD	Variance
SC	23.00	61.00	40.9587	8.78293	77.140
PA	15.00	49.00	31.7200	7.59945	57.752
NA	10.00	46.00	23.2800	7.65864	58.655
SE	11.00	39.00	28.4919	5.58088	31.146
SA	28.00	71.00	49.9344	8.33765	69.516
SMU	14.00	64.00	38.4797	9.12154	83.202

Table notes:
SC: Self-Control, PA: Positive Affect, NA: Negative Affect, SE: Self-Esteem, SA: Self-Awareness, SMU: Social Media Usage, Min: Minimum, Max: Maximum, SD: Standard Deviation

3.1 Hypothesis 1

To test the first hypothesis that self-control moderates the relationship between self-awareness and social media usage, a simple linear regression with moderation was conducted. Self-awareness was entered as the independent variable (IV), self-control as the moderator, and social media usage as the dependent variable (DV). The interaction between self-awareness and self-control could not significantly predict social media usage, $\beta = -.007$, $p = .517$, 95% CI [−.031, .016]. Therefore, the first hypothesis was rejected. A linear regression was conducted and found that self-awareness could not significantly predict social media usage, $R2 = .00$, $F(xs1, 116) = .478$, $\beta = -.070$, $p = .491$, 95% CI [−.272, .131]. However, a linear regression demonstrated that self-awareness significantly predicted self-control, $R2 = .23$, $F(1, 114) = 34.0$, $\beta = .514$, $p < .001$, 95% CI [.339, .688].

Hayes (2012) PROCESS macro (Model 4), was done with self-control as the mediator (IV: self-awareness, DV: social media usage). It found that self-control fully mediated the

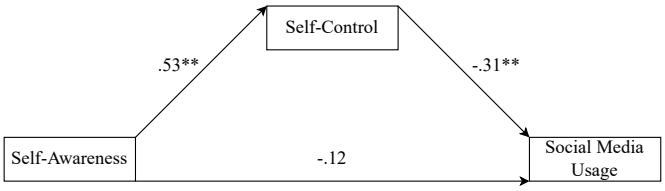
Table 4. Correlations between Self-Control, Positive Affect, Negative Affect, Self- Esteem, Self-Awareness, and Social Media Usage

		SC	PA	NA	SE	SA	SMU
SC	Pearson Correlation	1	0.404**	-0.448**	0.532**	0.479**	-0.298**
	Sig. (2-tailed)		<0.001	<0.001	<0.001	<0.001	0.001
PA	Pearson Correlation	0.404*	1	-0.285**	0.521**	0.349**	0.065
	Sig. (2-tailed)	<0.001		0.001	<0.001	<0.001	0.480
NA	Pearson Correlation	-0.448**	-0.285**	1	-0.513**	-0.385**	0.144
	Sig. (2-tailed)	<0.001	0.001		<0.001	<0.001	0.115
SE	Pearson Correlation	0.532**	0.521**	-0.513**	1	0.405**	-0.045
	Sig. (2-tailed)	<0.001	<0.001	<0.001		<0.001	0.627
SA	Pearson Correlation	0.479**	0.349**	-0.385**	0.405**	1	-0.064
	Sig. (2-tailed)	<0.001	<0.001	<0.001	<0.001		0.491
SMU	Pearson Correlation	-0.298**	0.065	0.144	-0.045	-0.064	1
	Sig. (2-tailed)	0.001	0.480	0.115	0.627	0.491	

Table notes:

SC: Self-Control, PA: Positive Affect, NA: Negative Affect, SE: Self-Esteem, SA: Self-Awareness, SMU: Social Media Usage

negative relationship between self-awareness and social media usage (indirect effect = −0.17, 95% CI [-.30, -.05]). Figure 1 demonstrates the mediation analysis. Therefore, although the first hypothesis was rejected, a mediation analysis found that self-control significantly mediated the relationship between self-awareness and social media usage.



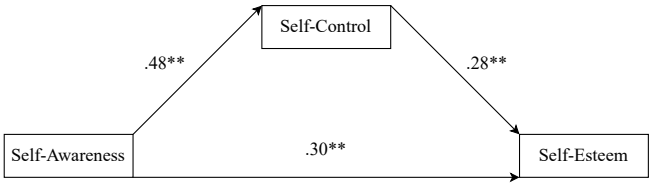
**. Correlation is significant at the 0.01 level (2-tailed).

Fig. 1. Mediation analysis demonstrating self-control as a significant mediator between self-awareness and social media usage.

3.2 Hypothesis 2

For the second hypothesis, a simple linear regression with moderation was conducted to assess if social media usage moderated the relationship between self-awareness and self-esteem. Self-awareness was entered as the IV, social media usage as the moderator, and self-esteem as the DV. The relationship between self-awareness and self-esteem, moderated by social media usage, was insignificant, β = -.000, p = .904, 95% CI [-.011, .010]. Therefore, the second hypothesis was not supported. But a linear regression found that self-awareness significantly predicted self-esteem, R2 = .20, F(1, 115) = 28.7, β = .278, p < .001, 95% CI [.176, .381]. However, the interaction between self-control and social media usage could not significantly predict self-esteem, β = -.000, p = .885, 95% CI [-.009, .011]. A linear regression was also run and found that self-control significantly predicted self-esteem, R2 = .37, F(1, 116) = 69.4, β = .385, p < .001, 95% CI [.293, .476].

As self-awareness, self-esteem, and self-control were all positively related, a mediation analysis was conducted with self-control as the mediator (IV: self-awareness, DV: self-esteem). Self-control partially mediated the relationship between self-awareness and self-esteem, (indirect effect = 0.13, 95% CI [.07, .20]). Figure 2 shows the mediation analysis. Thus, although the moderator was insignificant, self-awareness and self-control were positively related to self-esteem. Furthermore, self-control partially mediated the relationship between self-awareness and self-esteem.



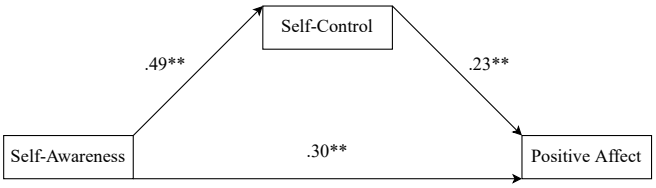
**. Correlation is significant at the 0.01 level (2-tailed).

Fig. 2. Mediation analysis demonstrating self-control as a significant mediator between self-awareness and self-esteem.

3.3 Hypothesis 3

A simple linear regression with moderation was run to assess if social media usage moderated the relationship between self-awareness and positive affect. Self-awareness was the IV, social media usage was the moderator, and positive affect was the DV. The interaction between self-awareness and social media usage could not significantly predict positive affect, β = -.013, p = .127, 95% CI [-.029, .004]. Thus, the third hypothesis was rejected. However, a linear regression found that self-awareness significantly predicted positive affect, R2 = .12, F(1, 118) = 16.4, β = .312, p < .001, 95% CI [.159, .464]. As for self-control, the interaction between self-control and social media usage could not significantly predict positive affect, β = -.001, p = .897, 95% CI [-.017, .015]. A linear regression demonstrated that self-control significantly predicted positive affect, R2 = .16, F(1, 117) = 22.8, β = .358, p < .001, 95% CI [.209, .506]. Altogether, the moderator was insignificant, but self-awareness and self-control positively related to positive affect.

A mediation analysis was conducted (IV: positive affect, DV: social media usage) and discovered that self-control fully mediated the relationship between positive affect and social media usage (indirect effect = −0.18, 95% CI [-.30, -.06]). Furthermore, a mediation analysis with self-control as the mediator (IV: self-awareness, DV: positive affect) found that self-control partially mediated the relationship between self-awareness and positive affect (indirect effect = 0.12, 95% CI [.04, .21]). Figure 3 demonstrates the mediation analysis. Therefore, moderation did not occur, but self-control significantly mediated self-awareness, positive affect, and social media usage.



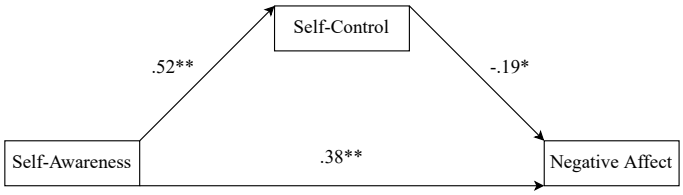
**. Correlation is significant at the 0.01 level (2-tailed).

Fig. 3. Mediation analysis demonstrating self-control as a significant mediator between self-awareness and positive affect.

3.4 Hypothesis 4

A simple linear regression with moderation was run to examine if social media usage moderated the relationship between self-awareness and negative affect. Self-awareness was the IV, social media usage was the moderator, and negative affect was the DV. The interaction between self-awareness and social media usage could not significantly predict negative affect, β = -.007, p = .321, 95% CI [-.022, .007]. Consequently, the fourth hypothesis was rejected. But a linear regression found that self-awareness significantly predicted negative affect, R2 = .20, F(1, 115) = 28.6, β = -.369, p < .001, 95% CI [-.505, -.232]. In addition, the interaction between self-control and social media usage could not significantly predict negative affect, β = -.000, p = .990, 95% CI [-.015, .015]. However, a linear regression indicated that self-control significantly predicted negative affect, R2 = .18, F(1, 114) = 24.7, β = -.336, p < .001, 95% CI [-.470, -.202]. Thus, the fourth hypothesis was rejected but it was discovered that self-awareness and self-control negatively related to negative affect.

A mediation analysis was also conducted with self-control as the mediator (IV: self-awareness, DV: negative affect). It was discovered that self-control partially mediated the relationship between self-awareness and negative affect (indirect effect = −0.10, 95% CI [−.19, −.02]). The mediation is demonstrated by Figure 4. Therefore, self-control partially mediated the relationship between self-awareness and negative affect.



*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

Fig. 4. Mediation analysis demonstrating self-control as a significant mediator between self-awareness and negative affect.

4 | DISCUSSION

It was hypothesized that self-control would influence the relationship between self-awareness and social media usage. The current study also hypothesized that self-awareness would be negatively related to social media usage. However, results indicated that self-control was not a significant moderator nor was self-awareness significantly related to social media usage. But since self-awareness was positively related to self-control and self-control was negatively related to social media usage, a mediation analysis was conducted. This analysis uncovered

that self-control fully explained the relationship between self-awareness and social media usage. Thus, although mediation was not a part of the initial hypotheses and there has not been a study that has assessed self-control as a mediator between self-awareness and social media usage, this result is understandable considering prior studies.

These prior studies have found that self-awareness enhances self-control by emphasizing self-discrepancies (in current and ideal standards) and therefore highlighting the need to change and control one's behaviour (Alberts et al., 2011). It is also well known that self-control is negatively related to social media usage as individuals with higher self-control are less susceptible to excessive social media usage (Błachnio & Przepiorka, 2015). Therefore, these results demonstrate how important self-control is in producing the negative relationship between self-awareness and social media usage. Increased self-awareness prompts increased self-control, consequently reducing social media usage. This result is unlikely to occur if self-awareness resulted in rumination and no prompt for increased self-control occurred. Perhaps the hypothesis for moderation did not occur because COVID-19 stress was not controlled for. For example, it could have been that individuals with high self-awareness and self-control had moderate social media usage instead of low social media usage. In this case, social media usage could have been at a moderate level even with high self-awareness and self-control due to the COVID-19 pandemic, something that exacerbated social media usage for many (Thygesen et al., 2022).

As for the lack of relationship between self-awareness and social media usage, the relationship between self-awareness and boredom needs to be assessed. It has been found that self-awareness increases boredom effects because self-awareness emphasizes the need to deal with boredom when one examines their current state versus their ideal standards (Moynihan et al., 2017). Furthermore, boredom increases feelings of meaninglessness, enhancing the need to resolve boredom for individuals with high self-awareness. Thus, although high self-awareness is related to self-control, self-awareness could be positively related to impulsiveness for individuals who are bored and experience a heightened sense of meaninglessness. Individuals with high self-awareness who avoid self-discrepancies and resort to impulsiveness are perhaps more at risk of excessive social media usage (Moynihan et al., 2017). Impulsiveness may serve as a distraction from self-discrepancies, avoiding the negative affect that self-discrepancies initiate (Cheng et al., 2012). Altogether, the positive relationship between self-awareness and boredom is perhaps the result of avoidance of self-discrepancies whereas the positive relationship between self-awareness and self-control is the result of addressing self-discrepancies. In conclusion, self-control was a significant mediator for the negative relationship between self-awareness and social media usage, aligning with previous studies on the three variables.

For the other hypotheses, no moderation was found, but numerous significant relationships were found that aligned with previous studies, as shown in Table 4. Additionally, mediation analyses discovered that self-control served as a significant mediator for relationships between numerous variables. For example, a mediation analysis found that self-control partially mediated the relationship between self-awareness and self-esteem. Thus, as previous studies found that high self-awareness can be associated with either high or low self-esteem, this study found that self-control partially explained why self-awareness is positively related to self-esteem. This positive relationship can likely be explained by the effect that self-awareness and self-control have on one's behaviour as they emphasize personal standards (self-awareness) and the alteration of behaviour to meet those standards (self-control) (Morin, 2011). Consequently, knowing what standards one would like to achieve and acting on the achievement of those standards would likely result in higher self-esteem.

In addition, a mediation analysis found that self-control fully mediated the negative relationship between positive affect and social media usage. Therefore, self-control can explain the negative relationship between positive affect and social media usage. This once again aligns with other studies that found that increased self-control was related to moderate social media usage and therefore increased wellbeing (Du et al., 2021). The positive relationship between self-awareness and positive affect is likely because self-awareness is associated with improved mental health and a better understanding of one's emotions, values, etc. (Morin, 2011).

Another mediation analysis found that self-control partially mediated the relationship between self-awareness and positive affect. Therefore, self-control partially explains why self-awareness is positively associated with positive affect. This is understandable considering self-control can lead to positive affect as it diminishes self-discrepancies, a catalyst for negative affect (Cheng et al., 2010). This study also found a significant positive relationship between self-control and positive affect. This sample could have been higher in self-awareness and more likely to self-reflect as opposed to ruminate, explaining the increased positive affect.

Lastly, a mediation analysis found that self-control partially mediated the negative relationship between self-awareness and negative affect. This outcome is similar to prior

studies as self-awareness is associated with reduced negative affect since it promotes one to address self-discrepancies (a cause of negative affect) (Morin, 2011). Self-control explains the negative relationship between self-awareness and negative affect because self-control minimizes self-discrepancies, reducing the negative affect from the acknowledgement of self-discrepancies. Additionally, perhaps this sample did not demonstrate a positive relationship between self-awareness and negative affect because they are more likely to self-reflect instead of ruminate, leading to reduced negative affect.

There has not been a study that has demonstrated how self-control mediates the relationship between self-awareness and social media usage. Self-control was a significant mediator for numerous relationships between other variables, emphasizing the importance of self-control as a consequence of self-awareness. Some future implications of this outcome indicate that perhaps people would benefit from heightened self-awareness as it could lead to improved self-control and therefore reduced social media usage. As demonstrated by this study, enhanced self-awareness and self-control could result in increased self-esteem and positive affect, along with reduced negative affect. Future research could focus on how to cultivate and improve self-awareness. Specifically, research could focus on how to cultivate self-awareness at younger ages so that individuals can reap the benefits of self-awareness earlier in life and learn how to maintain healthy self-reflection. Studies have already demonstrated how mindfulness meditation is associated with enhanced self-awareness, perhaps indicating that mindfulness meditation is a viable way of improving self-awareness (Lutz et al., 2016; Nyklíček, 2020). Furthermore, Lutz et al. (2016) demonstrated how mindfulness meditation was associated with reduced activation of brain regions associated with rumination.

There are a few limitations in this study. The Self-Reflection and Insight scale (Grant et al., 2002), although reliable, could not delineate whether an individual was self-aware with a tendency to ruminate versus reflect. The strong association between self-awareness, self-control, positive affect, and self-esteem in this study potentially signals that this sample was more prone to reflect. Secondly, the impact of COVID-19 on individuals was not measured or included as a covariate in this study. COVID-19 stress could have resulted in increased social media usage, increased negative affect, reduced self-esteem, and perhaps increased self-awareness and rumination (Zhao & Zhou, 2021). Therefore, COVID-19 stress could have been controlled for as it could have impacted peoples' scores on all the scales used in this study. Thirdly, gender differences in self-awareness were not examined nor how gender and self-awareness impact social media usage. Previous studies have demonstrated that women are more prone to problematic social media usage (Bergagna & Tartaglia, 2018) yet some studies find women score higher on self-awareness (Van Velsor et al., 1993). Therefore, the interaction between gender, social media usage, and self-awareness could be addressed in future studies.

Future research could focus on developing a scale that can provide insight into whether the participant is more likely to ruminate or reflect if they are highly self-aware. COVID-19 could be included as a covariate considering it could have an impact on self-control, self-awareness, self-esteem, affect, and/or social media usage. Additionally, gender differences could be examined as differences in self-awareness and social media usage have been discovered (Bergagna & Tartaglia, 2018; Van Velsor et al., 1993). Future studies could attempt to recruit a more diverse sample as this sample was primarily comprised of young, female, and white/Caucasian university students. Lastly, future research could focus on how to cultivate self-awareness in younger populations so they can reap the benefits of self-awareness earlier in life.

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CONFLICTS OF INTEREST

The authors declare that there is no conflict of interest.

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AUTHOR CONTRIBUTIONS

Valery Kalinin: conceptualization, writing, data analysis and interpretation, data visualization, and final editing. Nukte Edguer: supervision and editing.

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