

The Emotional Influences of Instagram on Mood and Self-Esteem

#Hashtag Mood

by

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Abstract

Social Media is a rapidly growing entity with great influence that expands with each day. When we experience and interact with a phenomenon this pervasive, it is important to look at the effects of said phenomenon. The social media platform, Instagram, is the largest social media platform to date. A lot has been written about the nature and influences of social media and other social media platforms but there has been a gap in research on the influences Instagram on mood and self-esteem. The purpose of this research is to understand the uniqueness of Instagram and to identify the emotional influences of Instagram in order to inform effective and unproblematic usage. It was hypothesized that the positive/uplifting Instagram content would evoke positive mood states and higher feelings of self-esteem among Instagram users, and that negative/depressing Instagram content would evoke negative mood states and lower feelings of self-esteem when users were exposed to negative/depressing content. It was also hypothesized that in the condition containing both uplifting and depressing content, participants would generally lean toward one emotional state than the other, experiencing either higher self-reported mood and self-esteem states or lower mood and self-esteem states after being exposed to both positive and negative content than they had before seeing the Instagram content. The first two hypotheses were supported. Participants reported higher mood and self-esteem states after being exposed to positive Instagram content, and lower mood and self-esteem states after being exposed to negative Instagram content. However, the combined condition where participants saw both positive and negative Instagram content, did not represent a statistically significant lean towards a positive mood and self-esteem over a negative mood and self-esteem state, and vice versa.

Keywords: Instagram, mood, self-esteem, emotion, uplifting, depressing

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Social media is a rapidly growing entity with great influence that expands with each day. When we experience and interact with a phenomenon this large, it is important to look at the effects of said phenomenon. Instagram is an app where users can post pictures or videos, sharing them with friends they have decided to allow partake in their virtual world, while keeping up with the virtual world of others. Users can also message each other on Instagram, as well as posts 60-second-long videos or “stories” of what one chooses to capture. Instagram is currently one of the largest social media platforms, averaging 500 million universal users a day (Aslam, 2018). It was founded by Kevin Systrom and Mike Krieger in October of 2010. The success of Instagram skyrocketed quickly attracting tens of millions of users before the co-founders sold it to Facebook in 2012 for \$1 billion (Shontell, 2013). Therefore, it is safe to say that there are some elements that keep Instagram users coming back for more.

There is a general lack of research on Instagram. However, there have been some researchers who have done great research on the social media platform. For example, Kircaburun and Griffith (2018), reviewed previous research done on other social media platforms such as Facebook, but they noticed that Instagram had qualities that other social platforms did not have. The current research will attempt to evaluate the emotional influences and self-esteem impacts of Instagram on its’ users in greater depth. The current research study examines the short-term effects of positive versus negative Instagram posts on emotional states. Short-term impacts of Instagram are important because of the strong tendency of Instagram users to view Instagram frequently throughout the day. Thus, if brief exposure to Instagram is repeated, it may form a pattern, or perhaps, an emotional arc.

The current research posed three main research questions. First, how do the uplifting Instagram posts relate to users' short-term mood? Secondly, how does the emotional content of Instagram posts relate to self-reported current self-esteem? Finally, how does the presentation of both uplifting and depressing content relate to self-reported current mood and self-esteem states. The literature review will begin with a review of the past research done on Instagram's influence. More specifically, the literature review will describe the previous research on the impact of Instagram on mood and self-esteem. After reviewing the previous research, the methods used in current research will be outlined.

Inclusion/Exclusion

The articles used in this literature review were selected using the Purchase College Library Database (i.e. Psych-ARTICLES, PsycINFO) and Science Direct starting in October of 2010, when Instagram was created, until the present time. Articles were included if the research discussed emotion, Instagram, social media, mood, mood induction and self-esteem.

Literature Review

Emotions are one of the central cores of the human experience. We as humans, experience the world through them, processing life through the lens of our emotions. The theory of emotions, according to Lang and James, can be described as a physiological arousal and emotional experience occurring simultaneously, yet independently (Lang, 1994). However, straying away from traditional theories, Harlow and Stagner point out three main fundamental problems in previous theories of emotion. First, concerning the nature of the conscious processes said to compose an emotion. There have been some who propose that an emotion is simply a matter of organic and kinesthetic sensations, while others propose that an emotion is a pattern of feelings that linearly succeed each other to develop an emotion. There are also those who believe

in the intermediate version of the two ideas, believing that they co-exist to play a part in the development of emotion. The second problem concerns anatomical region for feelings and emotions. There have been varying views on where the center for emotions and feelings lie; some suggesting the thalamus and other suggesting the cortex (without specificity). Finally, the third problem concerns the number and nature of innate emotions and subsequent modification. There have also been several varying theories that question the existence of innate emotional responses, while others believe there may be up to thirteen emotional responses (Harlow, 1932). The authors of this article discuss previous theories of emotion and propose a version of their own theory of emotions.

There has been theoretical debate on the acquisition of emotional responses. This led to a non-conclusive gap in research as theorist have not reached a consensus about how emotions are acquired. The theory that Lang colleagues credits as being the most complete, however, is the position taken by Tolman (1932), who claims that emotions are distinguished and given separate names by virtue of differences between physiological disturbances which they seek and avoid, by the differences between the final physiological dormancy and instabilities which they seek and avoid, and, by the characteristic differences of means-end-relation in which they expect these dormancies and instabilities to be.

Harlow and colleagues suggest that the effect that unconditioned affective emotional responses comprise a foundation for emotion, and that emotions themselves are a sequential product of conditioned responses. They argue that fundamental conscious emotional states are, in fact, feelings. However, with the knowledge that an emotion is a conglomerate of feelings, there may be other consciousness represented, such as consciousness of a stimulus. They then suggest that feelings are concentrated in the thalamus, while sensations are in the cortex. Finally, they

suggest that there are no innate emotions. However, they argue that the advantage to their theory is that it suggests a group of unconditioned responses as being the basis from which emotions may develop. They proposed that the number of emotions is limitless, and that there are certain fundamental emotional classes delimited by underlying feelings. They suggest that there are four fundamental “feeling tones”; pleasure, unpleasantness, excitement and depression; these feelings representing the only conscious elements detectable in an emotion aside from sensations and cognition of the stimulating situation. These tones representing the only identifiable conscious elements in an emotion, aside from sensations and cognition of the stimulating situation. In summary, differentiation of specific emotions is to be considered not as a matter of different motor components, but simply as differences in the conscious attitude taken toward the stimulus (Harlow, 1932).

The theory of emotion that Harlow and colleagues propose is crucial as it underlines important details for the current research. As they proposed, differentiation of emotions is not simply motor components; or just the processing of what it is a user of Instagram is looking at (stimuli). Emotion is the processing of differences in the conscious attitude formed about the content or stimuli being received. Therefore, it is imperative to discover what elements about Instagram make its emotional influences on its users so strong, and whether the evocation of those emotional influences can cause short term changes of emotional states. In the current study, it was examined if exposure to emotional content on Instagram activates this theory of emotion.

“Emotions are information” (Brackett, 2019). In his book “Permission to Feel”, Professor Marc Brackett proposes that the influence of our emotional state is pervasive, and aside from our physical health an essential aspect of human life. Emotions are everywhere, life is saturated with them, every second calling for the emergence of one. He mentions that more than half of

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American college students experience overwhelming anxiety, a third experience intense depression. Also, that over the last two decades the suicide rate has increased by 28 percent. (Brackett, 2019). When we see statistics like these, it is important to identify where these college students are sending their mental time, and what they are being exposed to. Brackett discusses the general lack of awareness of individuals' own emotions. People generally are not sure of how to process them or even release them. Previous research had denied the credibility of emotions as a facet of human intelligence because it could not be formally tested at the time. However, in 1990, Peter Salovey and John Mayer introduced the first formal theory of emotional intelligence in a scientific arena. Defining it as "the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions" (Salovey and Mayer, 1990). Further research led to the emergence of correlating mood and emotions and how they play a role in thought process, judgment and behavior. (Brackett, 2019). The idea of the cognitive loop was introduced, connecting emotions to mood. When someone is in a good mood, they are more likely to have positive thought and memories, which in turn perpetuate positive thinking. Psychologists by the late 1990's had formally credited emotional intelligence as a form of intelligence agreeing that emotion and cognition work simultaneously to perform information processing. (Brackett, 2019) Brackett gathered five areas that he felt locate where feelings matter most: attention, decision making, social relations, health, and creativity. He proposes that we are to use our emotions as tools to navigate life with.

The research done on the theory of emotions and the understanding of emotions, provides very deep implications and connections to the current research. People are emotional creatures, and the emotions can have several origins of influence. Instagram is a platform that may give us a look into the emotional intelligence of the people using it, and the reasons behind why and how

they use it. People may be experiencing a variety of emotions when using Instagram, and that in turn influences their mood states, and potentially their behavior. Instagram may be a social factor, that has high level influence on the emotions, mood and self-esteem of its users. This is imperative to recognize in order to spark awareness of what we as people allow to influence us and why.

Only three articles have been found about the emotional and psychological impact of Instagram on its users. Since these are the most relevant studies, they will be thoroughly described. In one of the few studies, according to Kircaburun and Griffith, there is a lack of knowledge about the social media platform known as Instagram. Within the past decade, some researchers have studied the entirety of social media on a more general basis (Bányai et al., 2017). Other research focused on the obsessive and problematic use of the social media platform, Facebook, (Satici 2018; Young et al. 2017), Twitter (Kircaburun 2016b), and YouTube (Balakrishnan and Griffiths 2017). Kircaburun and Griffith took notice of the lack of research on the problematic uses and general research of Instagram and sought to explore such. There are approximately 1 billion Instagram monthly users worldwide and more than 500 million daily active users (Aslam, 2020). Clearly, Instagram exerts a wide span of influence.

When something is heavily influential in the general culture, or more specifically on a specific age group, it is important to research the specifics of that phenomenon. For this reason, research has been done to zero in on the specific features of Instagram in relation to problematic Instagram use and feelings of presence, as previous studies have associated addictive Internet apps with feelings of presence and escapism; users using Instagram as a means to escape reality and/or connect with the online community (Kircaburun and Griffith, 2018). The purpose of Kircaburun and Griffith's study was to create a model to understand the effect of Instagram in its

relation to perceived feelings of presence and escapism between use of the different Instagram features. The features studied were IG live, likes, commenting, scrolling through different posts and watching videos, as well as receiving likes and comments on users' own posts. It was hypothesized that use of these features in relation to feelings of presence and escapism, would result in problematic Instagram use. It was also hypothesized that escapism would be positively associated with PIU and would mediate between use of different Instagram features, feeling of presence, and PIU.

In order to test their hypothesis, Kircaburun and colleagues (2019) created a complex model that allowed them to gauge the use of five Instagram features; watching others IG live streams, watching others videos, looking at other's photos, leaving likes and comments on others' posts, and likes and comments on their own posts, by having participants respond to questions on a 7-point Likert scale. Participants then filled out a questionnaire to assess problematic social use, e.g. "I feel anxious when I am not able to check my social network account" (Kircaburun, 2019). The researchers examined the associations between the five Instagram features with three different types of presence: social presence, spatial presence and co-presence, and then escapism. The feelings of presence variables measuring feelings of involvement; escapism measuring feelings of escape from reality. The study yielded several results, but the most interesting finding was that watching IG live feeds, liking, and commenting on the posts of others was correlated with higher feelings of presence as well as problematic Instagram usage, while escapism was only correlated with problematic Instagram use. One of their hypotheses predicted that watching Instagram live and liking and commenting, would be associated with problematic Instagram use. The findings did partially align with their hypotheses, however, the researchers found that it was much more complicated than they originally

hypothesized. Although watching live streams and liking and commenting was associated with problematic Instagram use and feelings of escapism, they were positively indirectly associated with co-presence and spatial presence.

The sample for this study was purposive; it was not representative of a larger population, only consisting of 333 individuals. Perspective of, use and meaning of certain social aspects tend to greatly vary across cultures. Therefore, one can wonder if this study demonstrates methodological equivalence across different countries, as the way that certain information is viewed and the effects of certain influences on people can greatly vary across cultures. In other words, one could wonder if the findings of this study be different had the experiment been conducted in other regions such as North America, Guatemala or Haiti, instead of only in Turkey.

This study implies that there is a lot to take into consideration when looking at the effects of social media, specifically Instagram, on our lives and our usage of it. More specifically, Instagram possesses features that are unique to its' platform such as IG live, that influence how people perceive themselves as being connected to the world, or their feelings of presence. Being that Instagram is one of the most popular and influential social media platforms and what that implies, it is imperative that we recognize that. Having a deeper insight into these effects and how we depend on them can provide insight into better usage, how to use, and how much time we carve out for it. For the research questions that will be addressed in the current research, this study is vital, as it reflects that there are indeed mental and physical influences of Instagram on those who use it.

Future research should include longitudinal studies that would dive further into the correlations between the five Instagram features that were noted in this study, in relation to

feelings of presence and escapism and how this correlation results in problematic Instagram use. The article also suggests that future research could utilize qualitative research data and mixed methods for more reliable and in-depth results. Future studies could demonstrate a larger and more representative study by using a mixture of participants perhaps from various countries and of a larger age range.

There are many reasons that someone may use Instagram. One person may use it for business, another for entertainment, another simply for distraction. In some shape or form, whatever someone regularly consumes, there is a potential influence on the mind of that person. Researchers propose that there may be a correlation between Instagram and the psychological well-being of its users. Mackson and colleagues (2019), surveyed Instagram users and non-users, in the areas of depression, anxiety, loneliness, self-esteem, body image, and social comparison. They also evaluated reported time using Instagram and Instagram anxiety. The main goal of this research was to compare users and non-users on the measures. The researchers proposed that social media can be beneficial to people because of the feeling of social fellowship it provides. Baumeister and Leary (1995) proposed that humans possess an internal need to belong; furthermore, that social media partially satisfies it. Due to these varying perspectives, the researchers wanted to fill the gaps in the research done about Instagram, specifically, its influence on psychological well-being.

Mackson and colleagues (2019) reference research done by Whiting and Williams (2013), which suggest that there are seven themes as to why people use social media. These themes, in order of influence, are social interaction, seeking information, passing time, entertainment, relaxing, communicating, and convenience. However, it is also argued that despite its universal influence, social media use can also yield negative outcomes, including mental

health issues (Dobrea and Pasarelu, 2016; Seabrook et al., 2016; Vannucci et al., 2017). There is the skepticism that social media can lead to decreased life satisfaction and jealousy, but also offers benefits such as social connectedness (Lin and Utz, 2015).

A lot of the existing research on social media and its influences focus on the negative consequences. Mackson and colleagues had two goals for their study. First, to examine whether having an Instagram account versus not having an account would result in different psychological outcomes. They wanted to examine whether having an Instagram account would be beneficial for users' feelings of social connectedness compared to non-users. Second, to examine predictors of depression and anxiety among Instagram users. They wanted to know if and when, Instagram may be detrimental to mental health, in the context of looking at the platform as a social tool.

Mackson and colleagues (2019) came up with five hypotheses for their study. First, they hypothesized that participants who actively use Instagram would experience decreased levels of depression, anxiety, and loneliness and higher self-esteem than non-users. Secondly, they hypothesized that participants who were Instagram users would experience negative body image issues more than participants who are non-users. Thirdly, it was hypothesized that Instagram users would be less depressed and anxious because they were less lonely. Fourth, it was hypothesized that greater Instagram anxiety would be associated with greater general anxiety among active Instagram users, including when common associated variables, such as, self-esteem, loneliness, and body image, were controlled. Finally, they hypothesized that predictors of general anxiety among Instagram users would include time spent on the application, social comparison, and depression based on existing research. They expected that the predictors of depression among Instagram users would include time spent on the application, Instagram

anxiety, and general anxiety. All these hypotheses were based on their expectation that the way people use Instagram can determine psychological outcome.

Several measures were used to evoke specific emotional states, including the Rosenberg Self-Esteem Scale (Rosenburg, 1965) and the Instagram Anxiety Scale which the researchers of the study developed themselves. It was revealed that Instagram is associated with positive psychological outcomes, including lower levels of depression, anxiety, and loneliness, as well as greater self-esteem. The social comparison finding further suggested the possibility that users were getting the social benefits of Instagram, such as lower anxiety and depression, which could protect against the inclination to socially compare. They also found that several factors contribute to depression and anxiety among Instagram users. Instagram anxiety was associated with both depression and anxiety. This specific form of anxiety refers to feeling anxiety symptoms about specific processes involved in using the application such as receiving likes on one's own post. Furthermore, Instagram anxiety was negatively associated with depression, meaning users with higher Instagram anxiety had fewer depression symptoms.

The study was correlational. Therefore, because correlation does not equal causation, there is no direct evidence linking Instagram use to the psychological constructs they measured, such as general anxiety. The correlation was non-directional, so it could not prove that general anxiety led to Instagram use or if Instagram use led to general anxiety. It could be implied that there is a third variable that affects both. Furthermore, a future study may examine the impact of Instagram, or social media in general, by way of requiring participants to abstain from using it for a certain period. This could allow researchers to examine their psychological well-being beforehand and observe the changes that occur from not engaging in constant social media use.

The implications of this study suggest that social media, i.e. Instagram can be beneficial to its users. However, they also acknowledge that their findings do not neglect the negative influences that Instagram has been found to have. The findings of this study allowed for a new perspective on the impacts of Instagram that are not as widely held. This exhibits the complex nature of the influences of Instagram, and that there much more to consider when evaluating and studying this platform. Understanding the application better can help with intervention for anxious and depressive mood states that may be related to Instagram use. This can be done by narrowing in on this platform that many people spend a sizable portion of their time on. Future research would do well to explore the correlational nature of the results of this study and get more specific about the directionality of the influence. Future research should also seek to examine how findings such as these can be applied therapeutically.

The potential relationships that may exist between Instagram and the mental health of its users is a vital aspect to consider when examining its' influence. For this reason, the third and finally study focused on identifying whether there is a relationship between Instagram use and mental health outcomes, such as depressive symptoms, self-esteem and general anxiety. (Sherlock and Wagstaff, 2018). Sherlock and colleagues delved into whether exposure to Instagram images could have tangible immediate effects on psychological, outcomes. They hypothesized that “time spent on Instagram would correlate positively with depression, physical appearance anxiety, generalized anxiety, social comparison and body dissatisfaction, and negatively correlated with self-esteem” (Sherlock and Wagstaff, 2018).

The researchers had the participants of the study take a survey where they were presented with several scales in no specific order. The Centre Epidemiological Studies Depression Scale was used to measure depressive symptoms, with higher scores indicating higher depressive

symptoms. The Heatherton Self-Esteem Scale measured self-esteem in three domains; performance social interaction, and appearance, with higher scores indicated higher self-esteem. The State-Trait Anxiety Inventory was used to measure general anxiety. Higher scores indicated greater anxiety. The Physical Appearance State and Trait Anxiety Scale measured individuals' body image anxiety and that they generally feel, and currently felt at the time of the study. Higher scores indicated higher physical appearance anxiety. The Body Image Disturbance Questionnaire measured concerns about physical appearance, higher scores indicated higher body image disturbance. Finally, the Iowa-Netherlands Comparison Orientation Scale measured how frequently individuals compare themselves with others. Higher scores indicated higher frequency of social comparison. Instagram use was measured by questions created by the researchers (i.e. "how many followers do you have on Instagram" and "how many accounts do you follow on Instagram") (Sherlock and Wagstaff, 2018). The researchers picked images from public Instagram accounts using the hashtags "#beauty, #Fitspo, and travel" to show as the picture stimuli. They used 10 beauty images, on the basis that the person (female in this study) was clearly wearing makeup. Then 10 fitness images, on the basis that they showed a female person wearing work out apparel who was currently engaged in a workout, or in a fitness center setting. Finally, the travel images that represent major travel destinations around the world, with a focus on landmarks and attractions, no visible faces in the pictures.

The study yielded results that were consistent with the original hypothesis of the researchers. They found that the average time allotted to Instagram by the participants were indeed positively correlated with depressive symptoms, trait anxiety, social comparison orientation, physical appearance anxiety, and body image disturbance. Also, time spent on Instagram was negatively correlated with self-esteem. They also found that the number of

followers one has is positively correlated with depression and trait anxiety and negatively associated with self-esteem. The number of accounts followed by an individual was positively correlated with depression and negatively with self-esteem. Age was also negatively correlated with Instagram use, and social comparison. When exploring the mediation of the association between social media use and psychological outcomes., they found that there was a significant partial mediating effect of social comparison on the relationship between Instagram use and depressive symptoms, self-esteem and physical appearance anxiety. Social comparison also had a significant mediating effect on the relationship between time spent on Instagram and trait anxiety and body image disturbance. In order to compare the effect of exposure to several categories of Instagram images on self-esteem, appearance anxiety, self-rated attractiveness, and general anxiety, the researchers conducted analysis of variance, measuring time as the between-subjects variable.

Instagram's array of distinguishing features has allowed for its vast and swift expansion. These several distinguishing features that Instagram possesses over other social media platforms, is what the authors of this study imply defines the application as more uncharted territory. The researchers suggest that based on their findings, increased use of Instagram, which is image based and users idealize said images, likely puts users at higher risks of negative outcomes than users of other social media platforms such as Facebook. Therefore, it is important to study Instagram because of its stake in the psychological well-being of its users. The researchers themselves suggested that their study should have also investigated the effects of exposure to idealized images on different other social media platforms as well; arguing that presentation format is important because of the possible influence of seeing content on a specific platform.

Research done on the influential nature of Facebook suggested that trait self-esteem was lower in participants who were chronically exposed to content on Facebook. (Vogel, 2014). They found that there was a relationship between trait self-esteem and social comparison. In their research, there was an increase of upward social comparison, or comparison to someone or thing they believe to be better than them, rather than downward social comparison, resulting in lower trait self-esteem. To target a causal relationship, they manipulated upward and downward comparison reviewing the participants' personal Facebook content (to find their main interest to compare) and public social network content. For example, if the participants were interested in fitness, they were shown a public Facebook profile of another person that was extremely high activity, or very lower activity, in order to manipulate comparison. Their results demonstrated that participants had lower trait self-esteem and marginally poorer self-evaluations after being exposed to a target of high activity. Overall, poorer self-esteem when shown an upward comparative target than the downward comparative target. Vogel and colleagues used the Rosenberg Self-Esteem Scale as a post self-esteem measure. These findings are important to the current research as it is imperative to know what will evoke lower/higher self-esteem states in participants when viewing social media, to see if there are the same, different or heightened elements of this on the social media platform, Instagram.

The previous research discusses several of features of Instagram, the impact the platform may have on the psychological wellbeing of its' users, and the theory of emotions. It can be deduced from the previous literature, that there is a mix of ideas about the emotional and psychological influences of Instagram on its users.

Present Research

The present research fills some of the gaps in the literature on Instagram and take a deeper look into the influence of uplifting versus depressing text-based posts, with features such as liking and commenting, on the mood and self-esteem of Instagram users. The present study also examines the influence of combined uplifting and depressing text-based posts of mood and self-esteem on Instagram users. The purpose of this research is to understand the uniqueness of Instagram and the immediate power it has on its users. Another purpose of this study is to identify the emotional implications of ongoing Instagram use in order to provide information to help guide affective use. It was hypothesized that the positive/uplifting Instagram content will evoke positive mood states and higher feelings of self-esteem among Instagram users, and that depressing content will evoke negative mood states and lower feelings of self-esteem when users are exposed to negative/depressing content. Also, it was hypothesized that in the combined uplifting and depressing condition, participants would lean more towards one emotion state than the others, scoring higher or lower on both the post PANAS and Rosenberg Self-Esteem Scale than the pre PANAS and Rosenberg scale.

Method

Participants

There was a total of 121 participants recruited for the present study. However, 34 participants were removed from the data for failure to answer key questions; 87 remain. The participants for this study were between the ages of 18-30 years old, the average age was 22. Participants were recruited via the Purchase Psychology Participant Pool, word of mouth, email, social media (including snapchat, Instagram, and Facebook), and by use of cellular communication (texts and phone calls). If the participant was below the age of 18 or above the age of 30, or did not have an Instagram account, they were unable to participate in the study.

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They were asked for this information in the demographic questionnaire before proceeding to the study. The sample was 81.6% Female, 12.6% Male, 4.5% Non-Binary, one person did not respond. It was also reported that participants were 37.9% Black/African American, 35.6% White/Caucasian, 10.3% Hispanic/Latinx, 3.4% Asian, 8.3% who picked more than ethnicity choice, 2.3% who identified as Other, and finally one person who did not respond (1.149%). Participants were recruited via the Psychology Participant Pool were compensated with one credit toward the Psychology course for which they participated in the study. Participants outside of the Psychology department did not receive compensation but were thanked for their time and participation in the study. The entirety of the study took 11 minutes.

Mood. In order to measure the current mood of the participants, they were presented items from the Positive and Negative Affect Schedule (PANAS; Tellegen, 1988), a widely used measure of emotion. Watson and Tellegen (1985) have established the PANAS scale as a two-factor model. This measure has been used in previous self-report studies. Watson and Clark (1988) have since compiled a list of a total of twenty mood descriptor terms that measure positive and negative affect (i.e. interested, excited, irritable, nervous).

Self-Esteem. In order to measure self-esteem, variables from the Rosenberg Self Participants Scale (1965) were used as a pre-post measure. This scale is the most widely used scale to measure self-esteem. It has been used across many fields of study and has demonstrated methodological equivalence across several cultures (Schmitt and Allik, 2005). Examples of items from this measure include “On the whole, I am satisfied with myself.” Responses were measured on a 1-7 Likert Scale from “strongly agree” to “strongly disagree.”

Materials and Procedure. The entirety of the experiment was presented to participants via Qualtrics, an online survey platform. Participants completed a six-step process. They were randomly placed into one of three different groups. First, all participants were asked to fill out an informed consent form, stating their agreement to participate in the study. The informed consent form also made clear that they can leave the study at any time they choose. Next, participants completed brief demographic questionnaire about their age, ethnicity, gender identity and Instagram usage. Once completed, participants were presented with 20 items for the Positive and Negative Affect Scale and 10 items from the Rosenberg Self-Esteem Scale, to measure their mood and self-esteem before being exposed to the Instagram content. There were three randomized experimental condition. In the first condition participants were exposed to 10 uplifting/positive Instagram posts. In the second condition, participants were exposed to 10 depressing/negative Instagram posts. Finally, in the combined condition, participants were randomly exposed to a total of 10 posts to avoid order effects: five positive/uplifting and negative/depressing content. Participants were shown these Instagram posts for up to 15 seconds at a time, allowing them time to view the full posts, but not spend more time on one post than another. The Instagram text-based posts appeared as they would on Instagram; positive/uplifting or negative/depressing, to evoke various moods and emotions. The number of likes and comments on the posts were also visible to the participants. The positive/uplifting posts had more likes in order to simulate the real-life Instagram experience. After viewing all the posts, participants were asked to respond to the Rosenberg scale as a post measure for self-esteem and then PANAS scale once again, as a post measure for mood; the order in which they are presented with these post-Instagram measures will be counter-balanced with the pre-Instagram measures. Finally, participants answered an open-ended survey asking them about their current mood state,

and self-esteem, as well as their attentiveness to the posts e.g. “could you please describe your mood at this moment?”, “how do you feel about yourself at this moment?” “describe the images you saw.” (See Appendix G)

Results

There were three hypotheses for the current study. One, the participants in the positive/uplifting condition, which was labeled “#happyquotes” would have lower scores on the PANAS scale and higher scores on the Rosenberg Self-Esteem scale after being shown the positive/uplifting Instagram content than they did before they saw the content. Two, the participants in the negative/depressing condition, labeled “#unhappyquotes”, would have higher scores on the PANAS scale and lower scores on the Rosenberg Self-Esteem Scale after being shown the negative/depressing content, than they did before they saw the content. Third, that participants in the condition containing both positive/uplifting and negative/depressing Instagram content, which was labeled “#both”, would generally lean more toward one emotional state than the other, either scoring higher on both the PANAS and Rosenberg Self-Esteem scales or scoring lower on both the PANAS and Rosenberg Self-Esteem scales, after being exposed to both positive and negative content than they had before seeing the Instagram content. A total of 12 separate paired samples t-tests conducted to compare within-subject participant responses to the pre and post measures in each of the three conditions and a total of four Repeated Measures ANOVA’s were conducted to compare the total means among the three conditions.

A paired samples t-test was conducted to compare the total pre and post measure mood scores in the “#happyquotes” condition. There was a significant difference between total pre mood scores ($M = 2.5$, $SD = 0.62$) and total post mood scores ($M = 2.4$, $SD = 0.63$) in the #unhappy quotes condition; $t(30) = 2.01$, $p = 0.05$.

A paired-samples t-test was conducted to compare the total pre and post measure mood scores for the positive items in the PANAS scale in the “#happyquotes” condition. There was no significant difference between total pre mood scores for the positive items ($M = 28.36$, $SD = 9.02$) and total post mood scores for positive items ($M = 29.6$, $SD = 10.1$) in the #happy quotes condition; $t(30) = -1.1$, $p = 0.029$.

A paired-samples t-test was conducted to compare the total pre and post measure mood scores for the negative items in the PANAS scale in the “#happyquotes” condition. There was a significant difference between total pre mood scores for the positive items ($M = 21.4$, $SD = 9.79$) and total post mood scores for negative items ($M = 18.8$, $SD = 9.50$) in the #happy quotes condition; $t(30) = 4.2$, $p = .001$.

A paired-samples t-test was conducted to compare the total pre and post measure self-esteem scores in the “#happyquotes” condition. There was a marginally significant difference between total pre self-esteem scores ($M = 2.9$, $SD = 0.63$) and total post self-esteem scores ($M = 2.8$, $SD = 0.23$) in the #happy quotes condition; $t(30) = 1.94$, $p = 0.06$.

Four paired sampled t-test were conducted for the depressive condition, or “#unhappy quotes”. A paired-samples t-test was conducted to compare the total pre and post measure mood scores in the “#unhappyquotes” condition. There was a significant difference between total pre mood scores ($M = 2.6$, $SD = 0.59$) and total post mood scores ($M = 2.3$, $SD = 0.68$) in the #unhappy quotes condition; $t(30) = 3.36$, $p = 0.002$.

A paired-samples t-test was conducted to compare the total pre and post measure mood scores for the negative items in the PANAS scale in the “#unhappyquotes” condition. There was a significant difference between total pre mood scores for the positive items ($M = 30.5$, $SD =$

6.92) and total post mood scores for positive items ($M = 26.3$, $SD = 9.40$) in the #unhappy quotes condition; $t(30) = 4.25$, $p = .001$.

A paired-samples t-test was conducted to compare the total pre and post measure mood scores for the negative items in the PANAS scale in the “#unhappyquotes” condition. There was no significant difference between total pre mood scores for the positive items ($M = 21.28$, $SD = 8.02$) and total post mood scores for negative items ($M = 19.1$, $SD = 7.64$) in the #unhappy quotes condition; $t(30) = 1.73$, $p = 0.09$.

A paired-samples t-test was conducted to compare the total pre and post measure self-esteem scores in the “#unhappyquotes” condition. There was a significant difference between total pre self-esteem scores ($M = 3.01$, $SD = 0.43$) and total post self-esteem scores ($M = 2.8$, $SD = 0.15$) in the #unhappy quotes condition; $t(30) = 4.34$, $p = .001$.

Finally, four paired samples t-tests were conducted for the condition containing both uplifting and depressive Instagram content, or #both”. A paired-samples t-test was conducted to compare the total pre and post measure mood scores in the “#both” condition. There was no significant difference between total pre mood scores ($M = 2.31$, $SD = 0.58$) and total post mood scores ($M = 2.02$, $SD = 0.56$) in the #both condition; $t(30) = 1.6$, $p = 1.26$.

A paired-samples t-test was conducted to compare the total pre and post measure mood scores for the positive items in the PANAS scale in the “#both” condition. There was no significant difference between total pre mood scores for the positive items ($M = 25.1$, $SD = 7.53$) and total post mood scores for positive items ($M = 23.2$, $SD = 7.24$) in the #both quotes condition; $t(30) = 1.56$, $p = 0.13$.

A paired-samples t-test was conducted to compare the total pre and post measure mood scores for the negative items in the PANAS scale in the “#both” condition. There was no

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significant difference between total pre mood scores for the positive items ($M = 21.3$, $SD = 7.12$) and total post mood scores for negative items ($M = 20.7$, $SD = 8.26$) in the #both quotes condition; $t(30) = 0.68$, $p = 0.50$.

A paired-samples t-test was conducted to compare the total pre and post measure self-esteem scores in the “#both” condition. There was no significant difference between total pre self-esteem scores ($M = 2.86$, $SD = 0.87$) and total post self-esteem scores ($M = 2.64$, $SD = 0.16$) in the #both condition; $t(30) = 1.31$, $p = 0.20$.

Next, a total of four repeated measures ANOVAs were run to compare the total means among the three conditions. A repeated measures anova was conducted to compare the pre and post means for mood across all three conditions. The Instagram posts had a statistically significant effect in self-esteem across the conditions. $F(2,83) = 3.18$, $p = 0.04$. A post-hoc tests was conducted, and significance was found between the post #both” and pre “#unhappyquotes” conditions, as well as the between the pre and post “unhappyquotes conditions; the means decreasing.

A repeated measures ANOVA was conducted to compare the pre and post means for the positive mood items in the PANAS scale. There was a statistically significant difference of the positive mood items across the conditions. $F(2,83) = 7.28$, $p = 0.001$. A post-hoc tests was conducted and significance was found between the post “#both” condition and the post “#happyquotes” condition, the post “#both” and pre “unhappy” condition, and finally the pre and post “#unhappyquotes” conditions.

A repeated measures anova was conducted to compare the pre and post means for the negative items in the PANAS scale. There was no statistical significance of the negative items across the conditions. $F(2,83) = 0.49$, $p = 0.61$

Finally, a repeated measures anova was conducted to compare the pre and post means for self-esteem across all three conditions. There was no significant difference across the conditions. $F(2,83) = 0.29, p = 0.75$.

Discussion

The current study hypothesized that the positive/uplifting Instagram content will evoke positive mood states and higher feelings of self-esteem among Instagram users, and that depressing content will evoke negative mood states and lower feelings of self-esteem when users are exposed to negative/depressing content. It was also hypothesized that in the combined uplifting and depressing condition, participants would lean more towards one emotion state than the others, scoring higher or lower on both the post PANAS and Rosenberg Self-Esteem Scale than the pre PANAS and Rosenberg scale. Across the 12 paired samples t-tests, six of the analyses supported the original hypotheses. In the positive/uplifting and negative/depressing conditions, participant scores on the mood and self-esteem measures increased after viewing the positive/uplifting and decreased negative/depressing Instagram content. Therefore, the hypotheses are supported that, after viewing positive/uplifting content, participants' scores on the mood and self-esteem scales would increase. It was also supported, that after viewing negative/depressing content, participants' scores on the self-esteem and mood scales would decrease. In the condition where participants saw both positive/uplifting and negative/depressing content, which was labeled as “#both,” there were no significant findings in reported differences in pre and post mood and self-esteem scores. This could be due to the way participants process seeing uplifting and then depressive content, or vice versa. It is possible that, if one sees an uplifting quote and then a depressive one, or vice versa, there is a lack of engagement because of the processing of two messages one after the other, with different emotional valences.

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Viewing two messages with different emotional valences in close succession seemed to have led the subjects to being unaffected emotionally, and in terms of their self-esteem. Some people also may see it as being balanced, taking the good with the bad, but not letting it necessarily effect their current mood and self-esteem states, rather simply absorbing the information. This tendency can point back to the research done by Whiting and Williams (2013), who studied the psychological outcomes of using Instagram and its association with depressive states and anxiety. They found that Instagram anxiety, which is defined as being anxious about specific processes/features on Instagram, such as receiving likes and comments on one's own posts, was non-directionally correlated with general anxiety and depression; conceivably pointing to the way individuals process their interactions on Instagram, the content they are viewing, and how it affects their mood and self-esteem states.

There were also two separate t-tests conducted for participant scores for the positive and negative items on the PANAS scale. With regards to the positive items on the PANAS (i.e. excited, inspired), there was no significant difference in the pre and post participant scores in the happy quotes condition. There was a significant decrease in the pre post participant scores for the positive items in the #unhappy condition. Regarding the negative items on the PANAS (i.e. hostile, upset), there was a significant decrease in the #happyquotes condition. There was no significant difference in the #unhappy quotes condition. There was also no significant difference in the #both condition for the positive and negative PANAS items. Once again, this can be a product of the explanation of the individual processing multiple messages with different emotional valences.

There is also something to be said about repeated exposure to this content. The Instagram content that the participants were shown was collected from Instagram itself. Regular users of

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Instagram have been exposed to similar, if not the same Instagram posts as was presented in the study. Therefore, the idea of repeated exposure, and being used to the content that they were presented to the point where it may no longer have an effect that is detectable by Instagram users' themselves. Since, the study is largely dependent on self-report, people may not be reporting their accurate mood and self-esteem, as they may not be truly aware of it. It is also plausible to consider that people do not want to identify themselves with negative words, resulting them to report on the measures inaccurately. There are significant results on some measures but not others, which points to an impact of the emotional content of the messages.

The research done by Kircaburn and colleagues focused on the relationship between five Instagram features and their relation to feelings of presence, and if that relationship resulted in problematic Instagram usage among users (2018). They found that certain features such as liking, and commenting on the posts of others was correlated with higher feelings of presence, while escapism was correlated with problematic Instagram, yet, the effect was positive due to the indirect association to co-presence and spatial presence. In the current study, participants were shown the number of likes and comments on the post, the #happyquotes condition tending to have more likes than the #unhappyquotes condition. The likes and comments were shown to ensure that the stimuli simulated real life Instagram interaction. There is something to consider about whether the visible number of likes and comments on the posts contributed to the feelings of co-presence and spatial presence in the participants viewing them. Does having a higher number of likes and comments influence how people feel about how connected they are with the post presented to them, and vice versa when the opposite is true, well as the content of the post itself, ultimately influencing their mood and self-esteem states after viewing them? Although not as strong, the study also noticed a correlation between watching IG lives, liking and commenting

and escapism and problematic Instagram usage. It is possible that when participants saw the negative Instagram stimuli, that there is a parallel between using Instagram as a means to escape reality and then being presented with a plethora of negative stimuli that brings you back to the realities of life. Therefore, participants may have related less to the negative items in the PANAS in the #unhappyquotes, as well as people not generally wanting to be associated with negative words. Since there is not much past research to draw from about the emotional influences on Instagram, there is not a wealth of research to draw from to connect to the results of the current study.

Finally, participants were asked to fill out open-ended questions at the end of the survey. The questions were “Could you please describe your mood at this moment?”, “How do you feel about yourself at this moment?”, and “Please describe the images you saw.” For the most part the responses with of the participants was congruent with the condition they were in, including participants in the #both condition representing the mix that they had seen in their responses. One participant from the both condition responding “Some of them were sad but humans have a vast range of emotions. Can’t always expect people to be happy and chipper.” to the question asking them to describe the images. Participants in this study were all active Instagram users who may be used to seeing this type of content, which may influence how they perceive their actual emotions in response to seeing it, while other may be more susceptible to the both subtle and not so subtle messages of the posts that are portrayed all over the application.

Limitations

Although we can learn a lot from the current study, there are of course, limitations. The main limitation is the short-term nature of the study. In this study, the change of mood and self-esteem states are measured directly after participants are presented with uplifting/negative

Instagram content. However, we cannot conclude what the results of a longitudinal version of this study would be. Given the design of this study, we can only report on the immediate impact of Instagram exposure (uplifting versus depressing versus combined exposure), and we can't draw conclusions about the cumulative impact of viewing Instagram, several times per hour or many times per day. Nonetheless, some of the findings of this study may be suggestive about these impacts and can help contribute to future research directions.

Another limitation concerns the demographic characteristics of the participants. Statistics about Instagram show that most Instagram users are between 13-30 years of age. However, due to the context in which this study is conducted, the researchers had to use 18-30-year-old. Perhaps, there would be a different result if a younger demographic were included. The current study was also conducted Qualtrics, on an online survey platform. Whenever a study is conducted online, there are always several possible confounding variables. Participants may skip questions, or they may be multi-tasking while doing the experiment. Participants may not pay full attention while doing the experiment. Another possible confounding variable is that in the Instagram posts in the #happyquotes, the visible likes were higher than in the #unhappyquotes in order to simulate the real-life Instagram experience. However, having more likes on one post over another may affect the way people process the posts they are seeing, the same thing goes for brighter colors being synonymous with happier posts and dark colors for negative posts. These variables may influence participants reaction to the posts and how they process the information they are seeing, resulting in acceptance of the information or possible denial of it. It may also influence participants mood response to the posts.

One final limitation of this study is the climate in which it was conducted. Recruitment of for this study began toward the beginning of the height of the Covid-19 pandemic in New York;

New York City specifically. The survey was conducted entirely online, but it is possible that the state of the participants' emotions, moods and self-esteem were already compromised because of the mass chaos going on around them. Meaning, there is a possibility that the results of this study may have been different had the circumstances been a little different.

Implications

There are several implications that can be made from the current study. If mood and self-esteem states can be changed based upon the content that an Instagram user is viewing, it can be implied that over time, frequency affects behavior. If Instagram users are continuously exposed to the emotional stimuli of the platform, and it has been concluded that that emotional stimuli do, in fact, influence immediate mood and self-esteem states, perhaps we can hypothesize that over time, this consistent influence can lead to bigger changes. Frequency of use and therefore, exposure, can possibly lead to a shift in perception of one's self and others; aligning one's perception to be congruent with the content to which they are being exposed. For example, if an Instagram user is being frequently exposed to uplifting content about body image, we may speculate that that person's perception of their own body image may begin to shift to a more positive one; the same being true of their perception of others' body image. We can even go further to ponder, whether this shift in perception, due to frequency of exposure to a type of emotional stimuli, has a subsequent influence on the behavior of that person. Lining up this way: frequency of use equaling frequency of exposure to emotional stimuli, in turn facilitating a shift in one's perception of oneself and/or others, subsequently facilitating a shift in one's behavior. What makes Instagram different from the other platforms of social media and media in general, is its various components it possesses that pulls the users into its' world. People may lack the emotional intelligence needed to understand how what they see influences them, how to process

it as well as what to do those emotions. The three features examined in the present study were text-based posts, liking and commenting. When a person is watching TV, they are absorbing the information being presented to them, and can form their own opinions about what they are seeing, because they, for the most part, are not under the heavy influence of the immediate opinions of others, because there is no comment section on a TV. However on social media platforms, the opinions, approvals or lack thereof (likes,) and comments of other people who are viewing the same exact content are directly in front of you while you are in the process of forming your own opinion about the information you are being presented with; immediately merging the opinion of others with your own. This merge can perhaps overshadow what one genuinely thinks about the content being presented, which we can further speculate if people's opinions are ever really their own, especially on social media. Furthermore, Instagram remains different from other social media platforms that have been previously researched such as Facebook, because of its' ability for retention of its users. Also, what are the consequences of discontinuing the regular exposure of Instagram content, will it have a meaningful impact on its users? It is intriguing that the participants in the combined condition generally did not experience much of an impact after being exposed to both uplifting and depressing stimuli. The participants in the depressing condition were exposed to 10 depressing quotes from multiple different pages found on Instagram. It is possible that when one message is consistently reiterated by more than one source or user, the psychological effect is more impactful. On the other hand, when participants were seeing a mix of both messages, the tendency to be psychologically impacted more one way than the other is not as strong. This connects back to the point that viewing two messages with different emotional valences in close succession seemed to have led the subjects to being unaffected emotionally, and in terms of their self-esteem. People who are using

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Instagram continuously may be consuming content on a regular basis, and feeling because of it, but not releasing those feelings and are left with them brewing, potentially influencing perception and behavior. Emotions play a deep role in the processing of information when users are on Instagram, influencing how the information is processed. Furthermore, as Professor Brackett stated, “emotions are information”. (2019) Emotions are information into how one may feel about what they are seeing on Instagram, but if from one posts to the next a new emotion is evoked and the mood and the self-esteem of a person is constantly shifted, it can become very hard to keep up. There is much to be drawn from the present results in order to shape future research.

Future Research

Future research should consider the potential longevity of the hypothesized effects. For example, how does the constant exposure to this emotional stimuli/or frequency of use, influence users in the long run? Is there a potential effect on behavior after long term use? How does the amount of time spent on Instagram influence its users, if at all? A longitudinal study should be conducted in order to examine if these effects are not just short term and temporary, but if they are long lasting. The true importance of this work lies in what the results mean for its users and the future of how people interact with and respond to it. From the results, we can conclude that exposure to several uplifting Instagram quotes significantly produces heightened states of mood and self-esteem and that exposure to several depressing quotes significantly produces decreased states of mood and self-esteem. Furthermore, being exposed to equal amounts of both, does not significantly influence states of mood and self-esteem in either direction. The question now is, is too much of anything bad? Can constant exposure to positivity on Instagram lure users into a state of illusion and ignorance to the other aspects, feelings and emotions that happen in human

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life, and vice versa with constant negativity? Most importantly, more research should be done to explore the emotional effects on Instagram on its' users, especially with how large on a span of influence this platform has. The current research is the start to particularly important work as it is one of the beginning research studies to be done on the emotional influences of this platform. It is important to understand the nuances of how it works and how it effects the emotional life of people. There is a great need today for deep research and intervention to be done to positively affect the mental health of young people, and Instagram is a great place to look.

Supplementary Materials:

Appendix A: Recruitment Material

Appendix B: Informed Consent

Appendix C: Demographic Questionnaire

Appendix D: PANAS Scale

Appendix E: Rosenberg Scale

Appendix F: Instagram Content

Appendix G: Open Ended Survey

Appendix A

Recruitment Material

Below are the exact sentences that will be presented to potential participants recruited from the following platforms:

Psychology Participant Pool: “Hi! The following research investigates the emotional influences of the social media platform Instagram on its’ users. I would love for you to take a just a few minutes to participate in this study. to further the expansion of research in this area. You will be assigned one research participation credit for your participation. You must be 18 years old or over, or 30 years old and under to participate. Thank you for your time!”

Social Media (Facebook, Snapchat, Instagram): “Hi! The following research investigates the emotional influences of the social media platform Instagram on its’ users. I would love for you to take a just a few minutes to participate in this study to further the expansion of research in this area. You must be 18 years old or over, or 30 years old and under to participate. Thank you for your time!”

Email, Word of Mouth, Texting: “Hi! The following research investigates the emotional influences of the social media platform Instagram on its’ users. I would love for you to take a just a few minutes to participate in this study to further the expansion of research in this area. You must be 18 years old or over, or 30 years old and under to participate. Thank you for your time!”

Exclusion material: “If the participant is below the age of 18 or above the age of 30, or do not have an Instagram account, they cannot participate in the study. They will be asked for this information in the demographic questionnaire before proceeding to the study.

Appendix B



INFORMED CONSENT FORM

Name of Study: The Emotional Influences of Instagram on Mood and Self-Esteem

Researchers: Jasmine C Booker and Dr. Vocisano, Ph.D.

Contacts: Jasmine.Booker@purchase.edu (3473878738) & irb.chair@purchase.edu

Purpose: We would like permission to enroll you as a participant in a research study. This study investigates the emotional influences of Instagram on its users. In order to not manipulate the outcome of this study, more information about its purpose will be explained at the end of the experiment.

Procedure: In this experiment, you will begin by filling out a brief demographic questionnaire. You will then be asked to answer a few questions. You will then be shown posts from Instagram in which you are to just view the content on your screen. Finally, you will then be asked a few more questions, and that will conclude the study. The study should take no longer than 15 minutes. All personal information such as name and email will not be made public, and you will be given an anonymous identification number when data is reviewed; in no way linking your information to the data.

Costs, risks, and discomforts: Although possible, risks for this experiment are very minimal since there are no physical threats and there are few sensitive subjects discussed. The questions and scenarios discussed include topics and ideas that one would encounter in their everyday lives.

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The possible risks of this study include feelings of sadness, stress, emotional distress and triggers. You may skip any questions if desired, and you may opt out of the study any time. If you experience any form of discomfort or stress, please feel free to contact the SUNY Purchase College Counseling Center (914-251-6390) or the SUNY Purchase College Wellness Center.

Benefits and compensation: The general benefit of participating in scientific research is the satisfaction that comes from contributing to science and the pursuit of knowledge. If you are participating in this experiment from the SUNY Purchase College Participant Pool or from another Psychology course that agrees to give credit for participating in studies, you will be awarded one credit hour towards your class. If you are participating in this study outside of SUNY Purchase College, the possible benefits for taking this study are mainly related to the satisfaction of being a contributor to research. However, there are no direct benefits for participating in this study. Thank you for your time and effort.

Confidentiality: The results of this study may be published in a scholarly book or journal or used for teaching purposes. However, your name and other identifiers will not be used in any publication or teaching materials. Your data will never be associated with your name or any other information that would make it possible to identify you.

Refusal or withdrawal of participation: You do not have to participate in this study. If you decide to participate, you can change your mind and drop out of the study at any time without affecting your present or future interactions with the experimenters and with no loss of credit for participation.

Signature: I confirm that the purpose of the research, the study procedures, the possible risks and discomforts, as well as potential benefits that I may experience have been explained to me. All

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my questions have been answered. I have read this consent form. My signature below indicates my willingness to participate in this study. I understand that I may contact the chair of the Institutional Review Board if I experience any problems during this experiment or have concerns about the ethics of this research [irb.chair@purchase.edu].

Appendix C

Demographic Questionnaire

1. How old are you?
2. Do you have an Instagram account?
3. Approximately many times per hour do you use Instagram?
4. Approximately many times per day do you use Instagram?
5. Please describe your ethnic identity: _____
6. Please describe your gender identity. Would you, for example, describe your gender identity as non-binary, male, female, transgender? _____

Appendix D

PANAS Scale

This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you feel these items at this moment. Use the following scale to record your answers.

1	2	3	4	5
very slightly or not at all	a little	moderately	quite a bit	extremely
<input type="text"/> interested		<input type="text"/> irritable		
<input type="text"/> distressed		<input type="text"/> alert		
<input type="text"/> excited		<input type="text"/> ashamed		
<input type="text"/> upset		<input type="text"/> inspired		
<input type="text"/> strong		<input type="text"/> nervous		
<input type="text"/> guilty		<input type="text"/> determined		
<input type="text"/> scared		<input type="text"/> attentive		
<input type="text"/> hostile		<input type="text"/> jittery		
<input type="text"/> enthusiastic		<input type="text"/> active		
<input type="text"/> proud		<input type="text"/> afraid		

We have used PANAS with the following time instructions:

Moment (you feel this way right now, that is, at the present moment)

Today (you have felt this way today)

Past few days (you have felt this way during the past few days)

Week (you have felt this way during the past week)

Past few weeks (you have felt this way during the past few weeks)

Year General irritable alert ashamed inspired nervous determined attentive jittery active afraid (you have felt this way during the past year) (you generally feel this way, that is, how you feel on the average)

Appendix E

Rosenburg Self Esteem-Scale

1. On the whole, I am satisfied with myself. (Strongly Agree, Agree, Disagree, Strongly Disagree)
2. At times I think I am no good at all. (Strongly Agree, Agree, Disagree, Strongly Disagree)
3. I feel that I have a number of good qualities. (Strongly Agree, Agree, Disagree, Strongly Disagree)
4. I am able to do things as well as most other people. (Strongly Agree, Agree, Disagree, Strongly Disagree)
5. I feel I do not have much to be proud of. (Strongly Agree, Agree, Disagree, Strongly Disagree)
6. I certainly feel useless at times. (Strongly Agree, Agree, Disagree, Strongly Disagree)
7. I feel that I'm a person of worth, at least on an equal plane with others. (Strongly Agree, Agree, Disagree, Strongly Disagree)
8. I wish I could have more respect for myself. (Strongly Agree, Agree, Disagree, Strongly Disagree)
9. All in all, I am inclined to feel that I am a failure. (Strongly Agree, Agree, Disagree, Strongly Disagree)
10. I take a positive attitude toward myself. (Strongly Agree, Agree, Disagree, Strongly Disagree)

Appendix F

Instagram Stimuli

#happy quotes:

1. Keep Smiling
2. you are enough
3. Happiness is not about getting all you want; it is about enjoying all you have
4. Don't lower your standards you deserve good things
5. Happiness is enjoying the little things in life
6. Be around people who want you to win, as much as you want them to win
7. I'm going to have a productive week in 3, 2, 1!
8. Keep going, Keep growing!
9. It costs nothing to spread love
10. Every day may not be good, but there is something good in everyday

#unhappy quotes:

1. I'm BROKEN
2. I just wanted to be enough for someone
3. Tears are the summer shower to our souls
4. Tears are from the heart not from the brain
5. I don't wanna feel this way anymore, it's ruining everything for me
6. That moment you burst into tears in your room and you realize, no one knows how unhappy you are
7. because nothing makes me happier – and nothing makes me sadder – than you
8. school is just an endless cycle of “I just need to get through this week” every week
9. “they wanna see you do good, but never better than them. Remember that.”
10. “And that's the thing about people who mean everything they say. They think everyone else does too.”

Appendix G

Open-Ended Survey

1. Could you please describe your mood at this moment?
2. How do you feel about yourself at this moment?
3. Please describe the images you saw.

References

- Aslam, S. (2020, February 10). Instagram by the Numbers: Stats, Demographics & Fun Facts. Omnicore. <https://www.omnicoreagency.com/instagram-statistics/>
- Baumeister, R. F., & Leary, M. R. (1995, May). The need to belong: desire for interpersonal attachments as a fundamental human motivation. <https://www.ncbi.nlm.nih.gov/pubmed/7777651>
- Brackett, M. A. (2019). *Permission to feel*. London: Quercus.
- Bányai, F., Zsila, Á., Király, O., Maraz, A., Elekes, Z., Griffiths, M. D., ... Demetrovics, Z. (2017). Problematic Social Media Use: Results from a Large-Scale Nationally Representative Adolescent Sample. *Plos One*, 12(1). doi: 10.1371/journal.pone.0169839
- Balakrishnan, J., & Griffiths, M. D. (2017). Social media addiction: What is the role of content in YouTube? *Journal of Behavioral Addictions*, 6(3), 364–377. doi: 10.1556/2006.6.2017.058
- Harlow, H. F., & Stagner, R. (1933). Psychology of feelings and emotions. II. Theory of emotions. *Psychological Review*, 40(2), 184–195. doi: 10.1037/h0075696
- Kırcaburun, K. (2016b). Effects of gender and personality differences on twitter addiction among Turkish undergraduates. *Journal of Education and Practice*, 7(24), 33–42.
- Kırcaburun, K., & Griffiths, M.D. (2018). Problematic Instagram Use: The Role of Perceived Feeling of Presence and Escapism. *International Journal of Mental Health and Addiction*, 17(4), 909–921. doi: 10.1007/s11469-018-9895-7

Mackson, S. B., Brochu, P. M., & Schneider, B. A. (2019). Instagram: Friend or foe? The application's association with psychological well-being. *New Media & Society*, 21(10), 2160–2182. doi: 10.1177/1461444819840021

Harlow, H. F., & Stagner, R. (1933). Psychology of feelings and emotions. II. Theory of emotions. *Psychological Review*, 40(2), 184–195. doi: 10.1037/h0075696

Rodhom, C., & Tolman, E. C. (1950). Purposive Behavior in Animals and Men. *The American Journal of Psychology*, 63(2), 305. doi: 10.2307/1418946

Salovey, P., & Mayer, J. D. (1990). Emotional Intelligence. *Imagination, Cognition and Personality*, 9(3), 185–211. <https://doi.org/10.2190/DUGG-P24E-52WK-6CDG>

Satici, S. A. (2018). Facebook addiction and subjective well-being: A study of the mediating role of shyness and loneliness. *International Journal of Mental Health and Addiction*, 1–15. <https://doi.org/10.1007/s11469-017-9862-8>

Sherlock, M., & Wagstaff, D. L. (2019). Exploring the relationship between frequency of Instagram use, exposure to idealized images, and psychological well-being in women. *Psychology of Popular Media Culture*, 8(4), 482–490. doi: 10.1037/ppm0000182

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, 54(6), 1063–1070. doi: 10.1037/0022-3514.54.6.1063

Whiting A., Williams D. (2013) Why people use social media: A uses and gratifications approach. *Qualitative Market Research*, 16. doi: 10.1108/QMR-06-2013-0041

Vogel, E. A., Rose, J. P., Roberts, L. R., & Eckles, K. (2014). Social comparison, social media, and self-esteem. *Psychology of Popular Media Culture*, 3(4), 206–222. doi:

10.1037/ppm0000047

Young, N. L., Kuss, D. J., Griffiths, M. D., & Howard, C. J. (2017). Passive Facebook use, Facebook addiction, and associations with escapism: An experimental vignette study. *Computers in Human Behavior*, 71, 24–31. doi: 10.1016/j.chb.2017.01.039